

A465 Blaenau'r Cymoedd

Adrannau 5 + 6: *Dowlais Top - Hirwaun*



A465 Heads of the Valleys

Sections 5 + 6: *Dowlais Top - Hirwaun*



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A465 Heads of the Valleys Sections 5 and 6: Dowlais Top to Hirwaun

Environmental Statement Supplement Volume 3: Figures — March 2018



Environmental Statement Supplement Volume 3: Revised Figures

All Figures included in this Volume are a direct replacement of the corresponding Figures issued in the July 2017 published Environmental Statement Volume 3.

Revised Figures accompanying Chapter 1: Introduction

No revised Figures.

Revised Figures accompanying Chapter 2: Policy Context

No Figures.

Revised Figures accompanying Chapter 3: Need for Proposed Scheme

No Figures.

Revised Figures accompanying Chapter 4: Design Developments and Alternatives

No Figures.

Revised Figures accompanying Chapter 5: Proposed Scheme

No revised Figures.

Revised Figures accompanying Chapter 6: Consultations

No Figures.

Revised Figures accompanying Chapter 7: Environmental Assessment Methodology

No Figures.

Revised Figures accompanying Chapter 8: Air Quality

Figure 8.1	EPUK Construction Dust Assessment
Figure 8.2	NO ₂ Monitoring Locations
Figure 8.3	Sensitive Ecological Receptors
Figure 8.4	Predicted Change in NO ₂ Concentrations Between DM and DS Scenarios for 2022
Figure 8.5	Predicted Change in PM ₁₀ Concentrations Between DM and DS Scenarios for 2022

Revised Figures accompanying Chapter 9: Cultural Heritage

Figure 9.1	Archaeological Remains and Historic Buildings (including Conservation Areas)
Figure 9.2	Historic Landscape Character Areas
Figure 9.3	Registered Historic Landscapes

Revised Figures accompanying Chapter 10: Landscape and Visual Impact

Figure 10.5	Landscape Character Areas: National, National Park and County Borough
Figure 10.6.2	Zone of Theoretical Visibility - Existing Road
Figure 10.7	Night Time Light Sources and Exterior Lighting Environmental Zones
Figure 10.8	Visual Effects

Visualisations (NEW)

Visualisation 1	RV10.2 - View south-east from National Cycle Route 46 (receptor S6-A6), looking towards Hirwaun junction (Year 1 and Year 15)
Visualisation 2	KV10.8 - View north-west from the Taff Trail on the Cefn Coed viaduct (receptor S5-A1), to the A470 viaduct, A470 junction and the Taf Fawr viaduct (Year 1 and Year 15)
Visualisation 3	RV10.30 - View from Vaynor Public Footpath 34 (receptor S5-A6), looking south along the leat and disused Gurnos Quarry Tramroad to the Taf Fechan viaduct (Year 1)
Visualisation 4	RV10.41 - View south from Pant Hollow open space allocation (receptor S5-A12) (Year 1 and Year 15)
Visualisation 5	RV10.47 - View south from National Cycle Route 46 (receptor S5-A15), to Dowlais junction (Year 1 and Year 15)

Revised Figures accompanying Chapter 11: Nature Conservation

Figure 11.6	Marsh Fritillary Site Overview
Figure 11.7	Marsh Fritillary Habitat Loss
Figure 11.15	Nature Conservation Mitigation ¹

Revised Figures accompanying Chapter 12: Geology and Soils

No revised Figures.

Revised Figures accompanying Chapter 13: Materials

No revised Figures.

Revised Figures accompanying Chapter 14: Noise and Vibration

Figure 14.4	Noise Change Contour Plan DM (Opening Year) Against DS (Opening Year)
Figure 14.5	Noise Change Contour Plan DM (Opening Year) Against DS (Future Year)
Figure 14.6 (NEW)	Noise Change Contour Plan DM (Opening Year) Against DM (Future Year)
Figure 14.7 (NEW)	Operational Sample Receptors and NAPPA Location

Revised Figures accompanying Chapter 15: Effects on All Travellers

No revised Figures.

Revised Figures accompanying Chapter 16: Community and Private Assets

No revised Figures.

Revised Figures accompanying Chapter 17: Road Drainage and the Water Environment

No revised Figures.

Revised Figures accompanying Chapter 18: Cumulative Effects

No revised Figures.

Revised Figures accompanying Chapter 19: Summary and Conclusions

No Figures.

¹ Please note that this figure is confidential as it contains sensitive information regarding protected species. Should you require an electronic copy of this document then please make your request to Welsh Government.

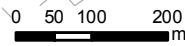
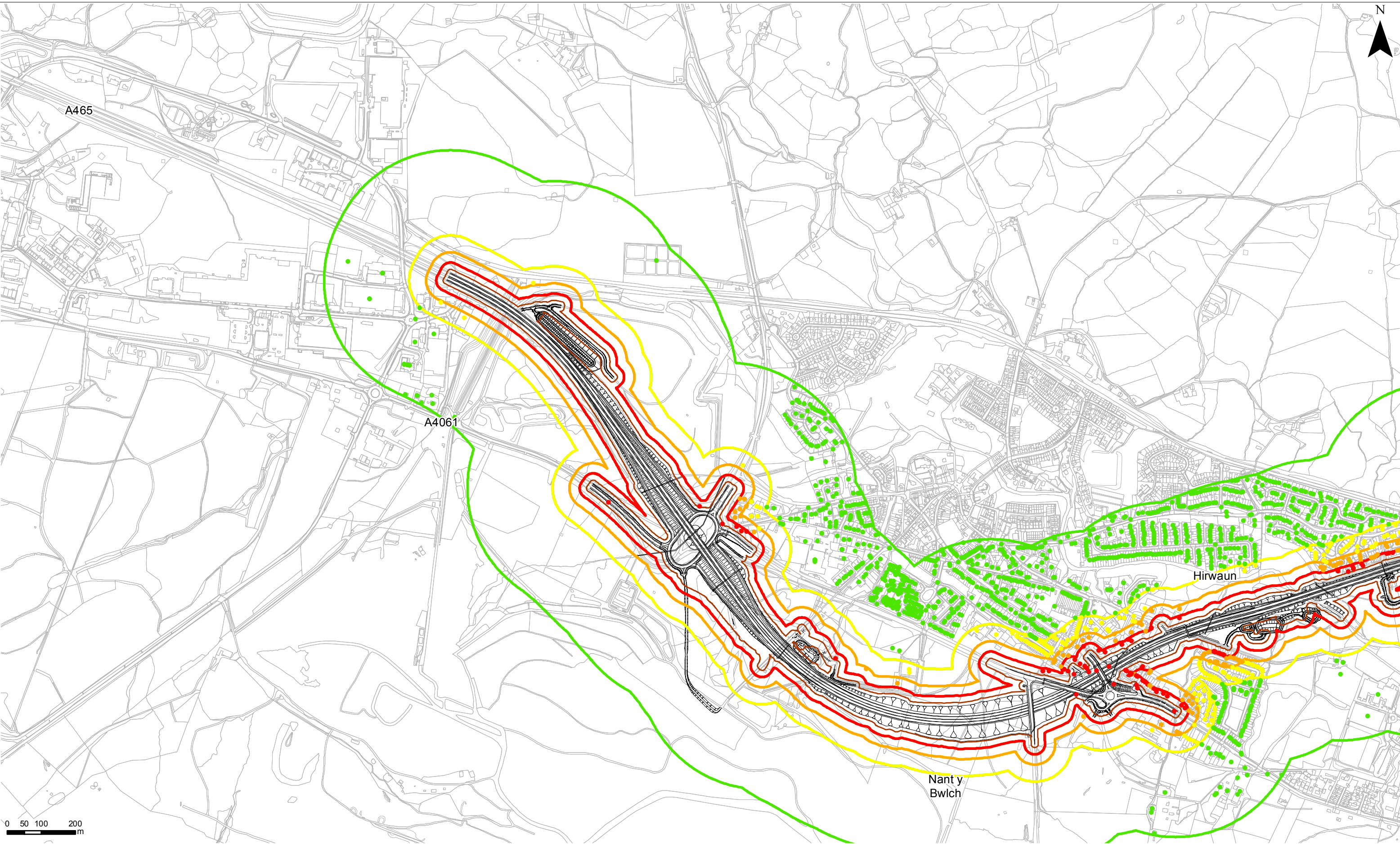
Environmental Statement Supplement Volume 3: Revised Figures

All Figures included in this Volume are a direct replacement of the corresponding Figures issued in the July 2017 published Environmental Statement Volume 3.

Revised Figures accompanying Chapter 8: Air Quality are included as follows:

Figure 8.1	EPUK Construction Dust Assessment
Figure 8.2	NO2 Monitoring Locations used for verification
Figure 8.3	Ecological receptors and study area modelled in the air quality assessment
Figure 8.4	Predicted Change in NO ₂ Concentrations Between DM and DS Scenarios for 2022
Figure 8.5	Predicted Change in PM ₁₀ Concentrations Between DM and DS Scenarios for 2022

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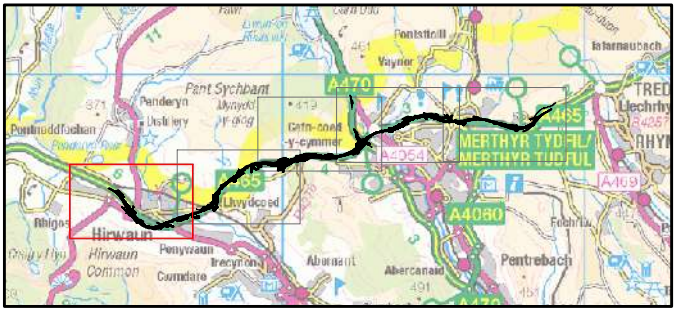


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— Scheme design
▭ Assumed construction boundary

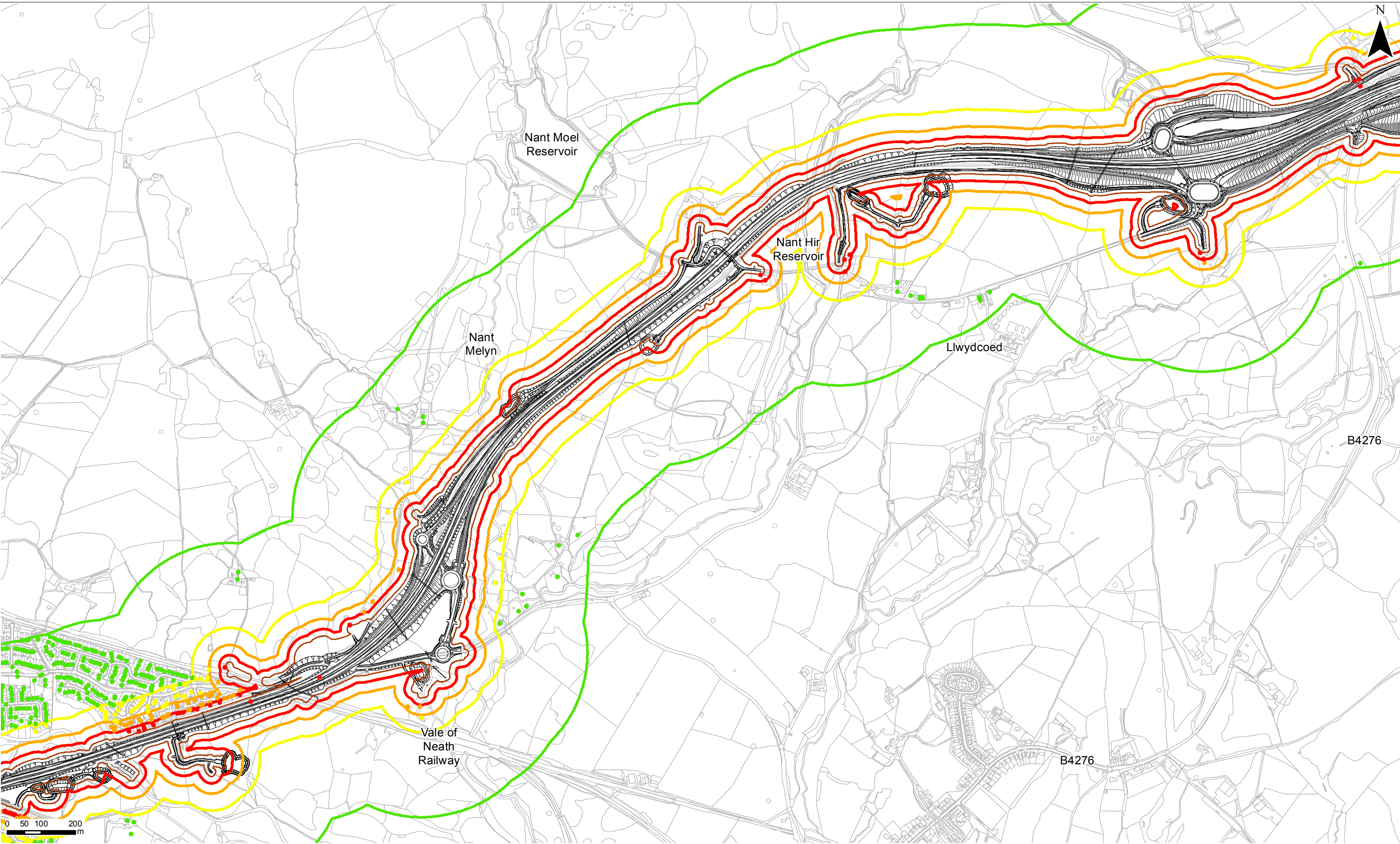
Distance bands (metres)
▭ 0 - 20
▭ 21 - 50
▭ 51 - 100
▭ 101 - 350

Dust receptors within IAQM distance bands
● 0 - 20
● 21 - 50
● 51 - 100
● 101 - 350




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Title	EPUK construction dust assessment	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.1 Sheet 1 of 5	Rev 0

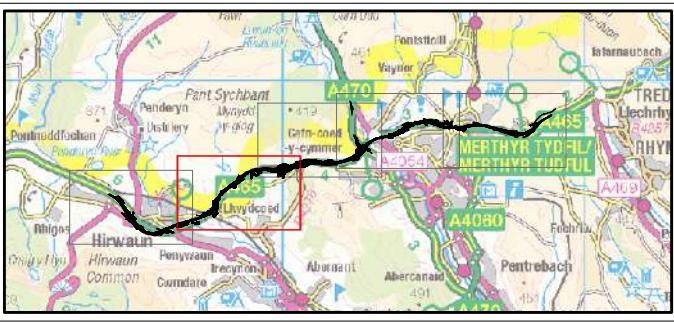


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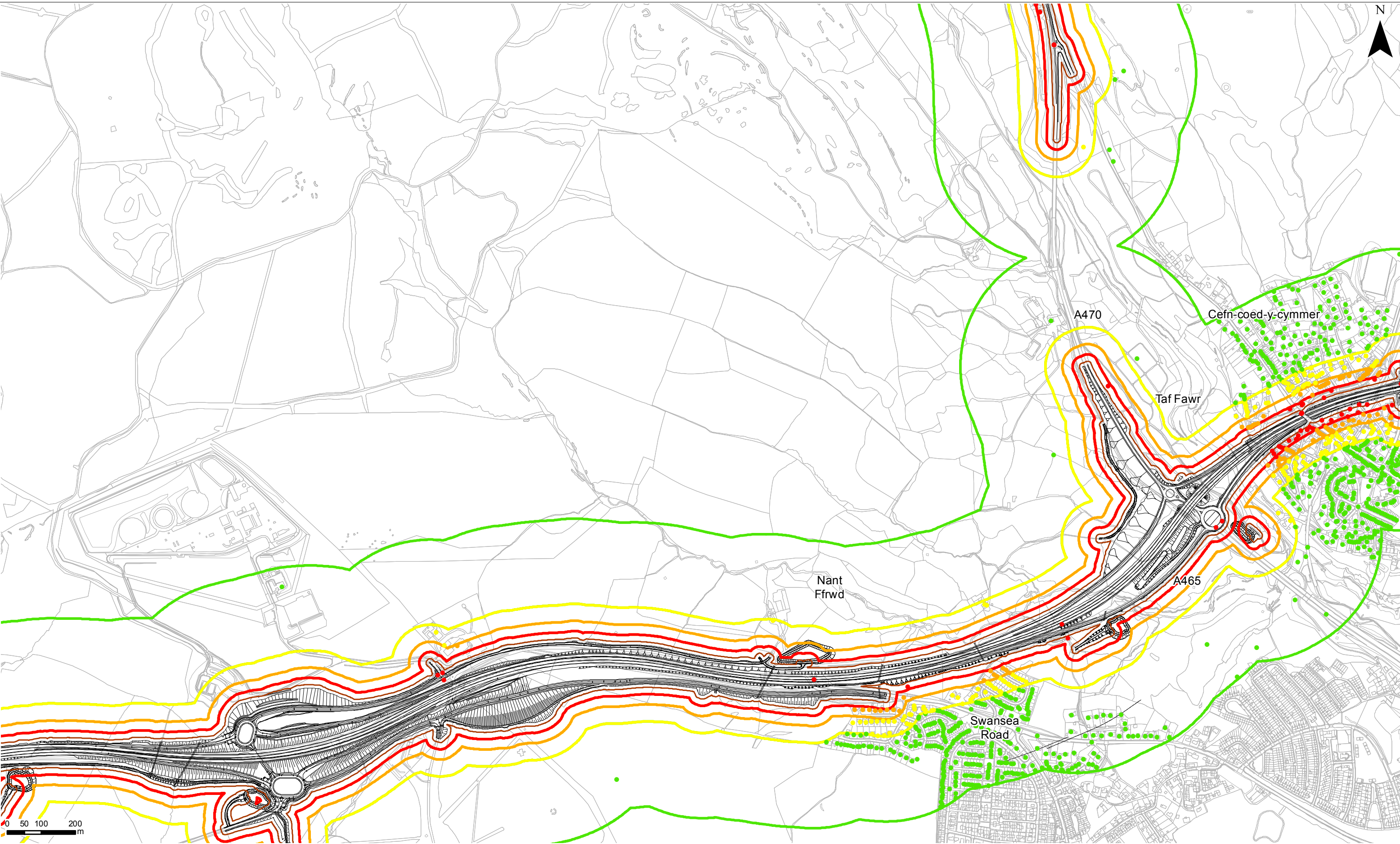
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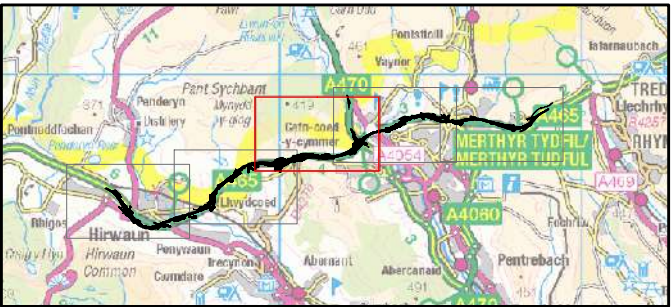
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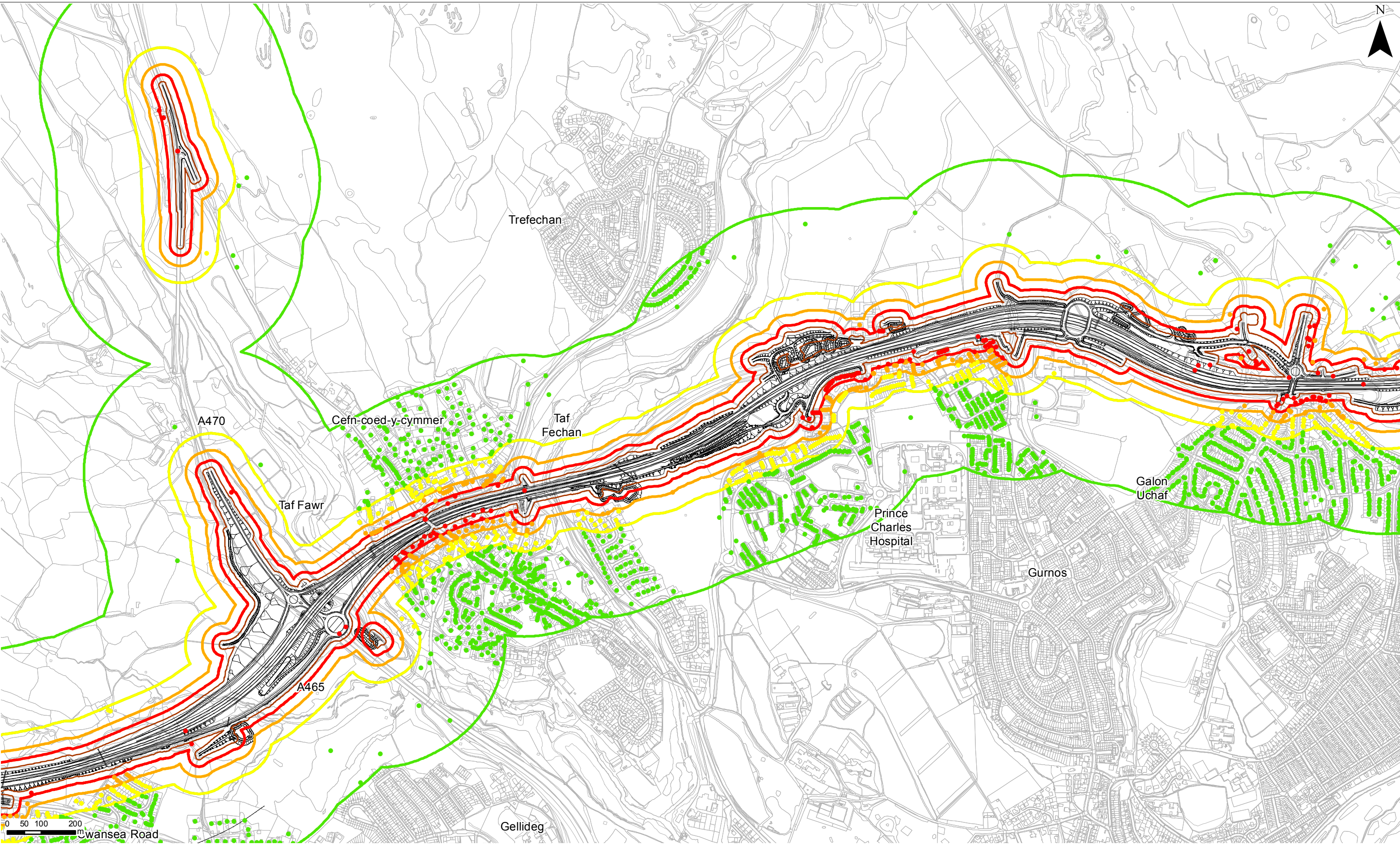


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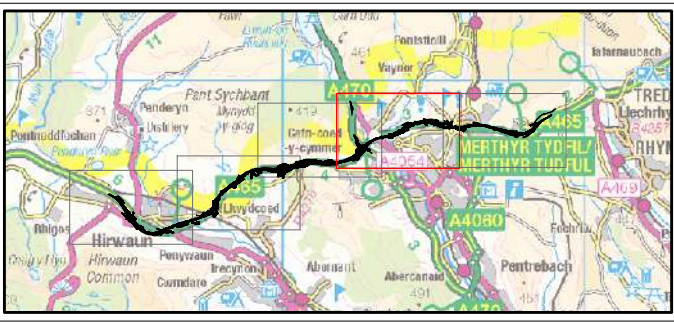
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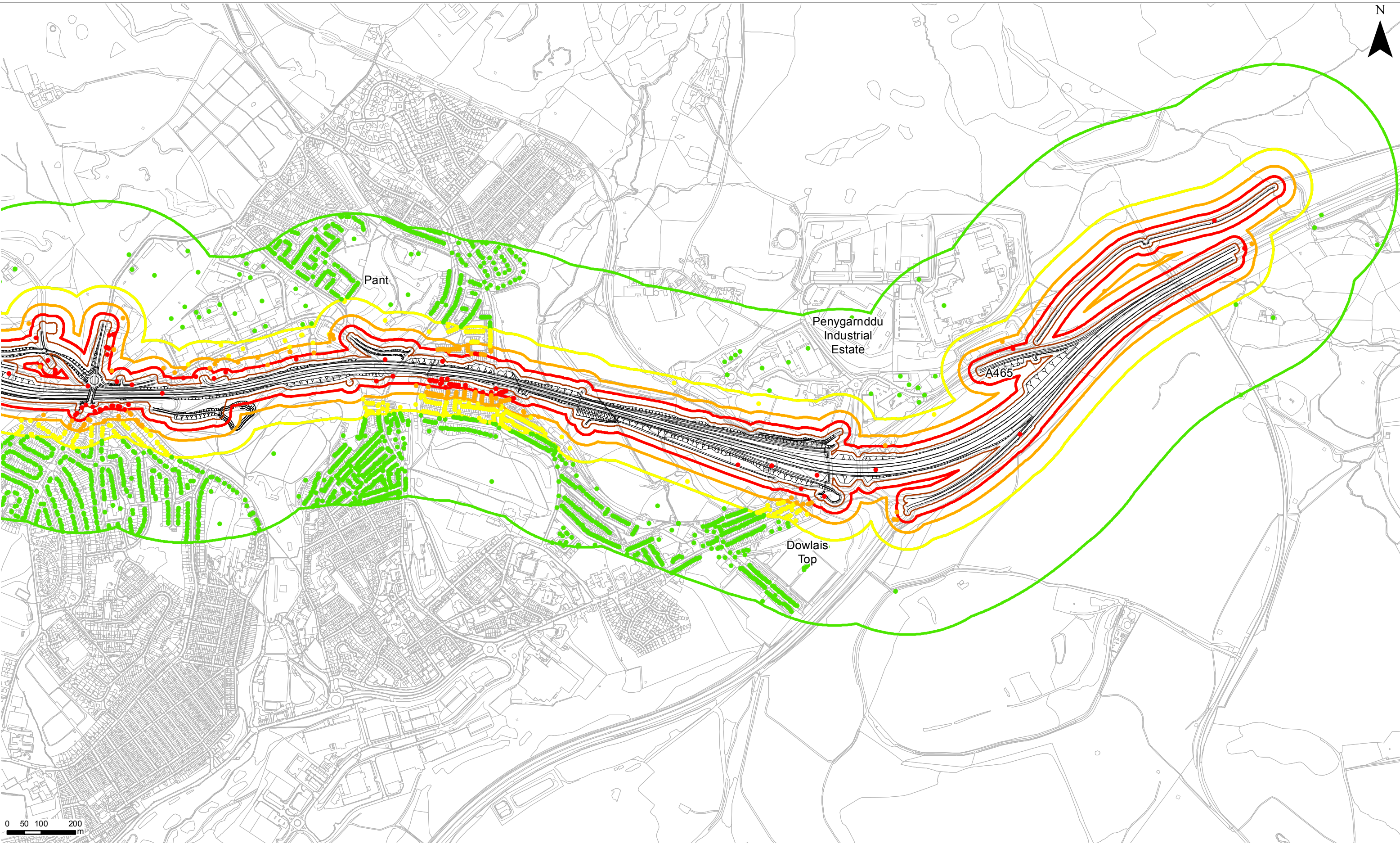


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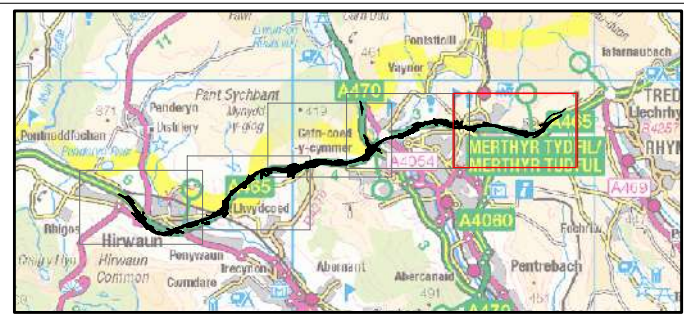


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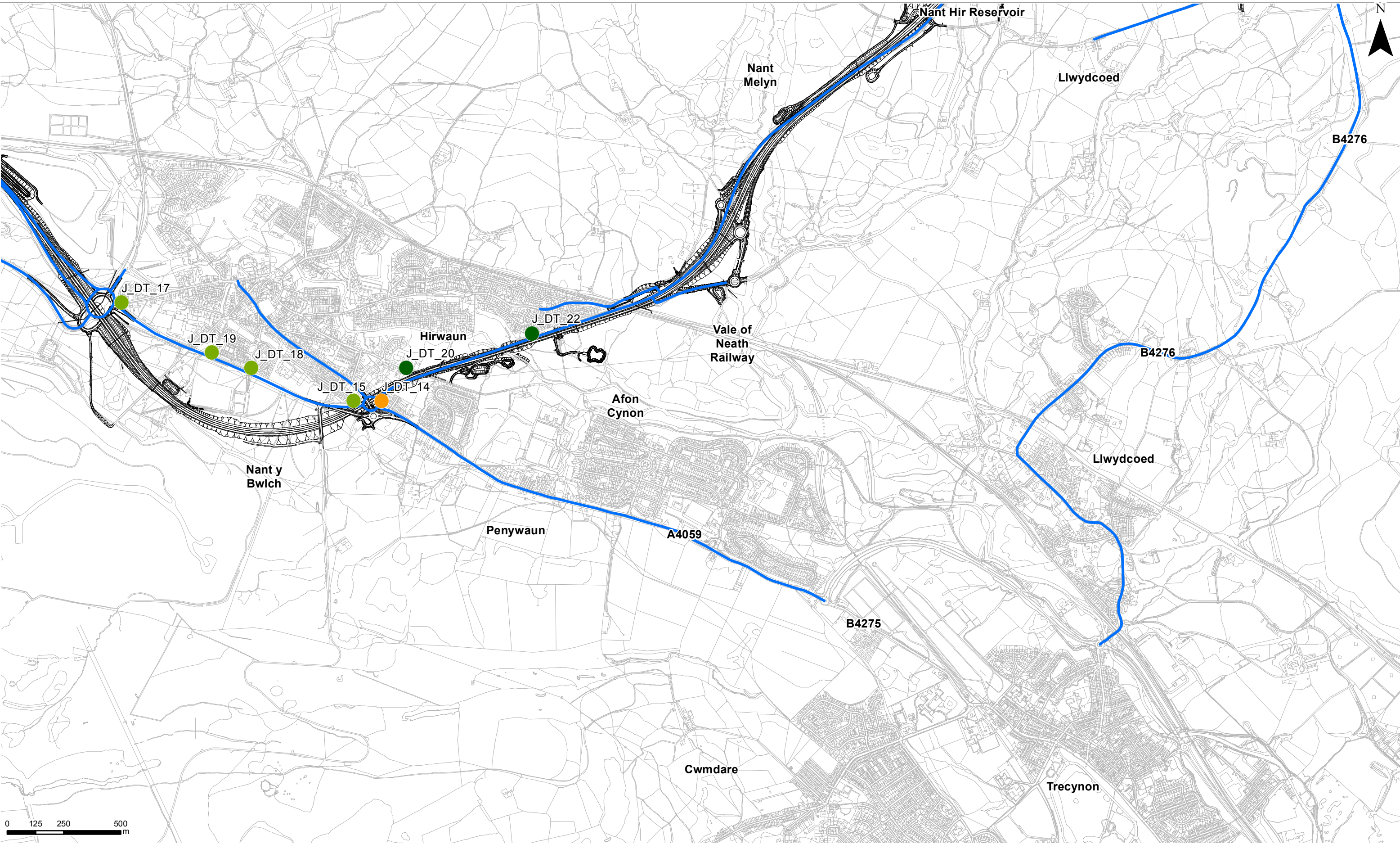
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— Scheme design

— DMRB affected links

Monitoring locations

NO₂ concentration (ugm⁻³)

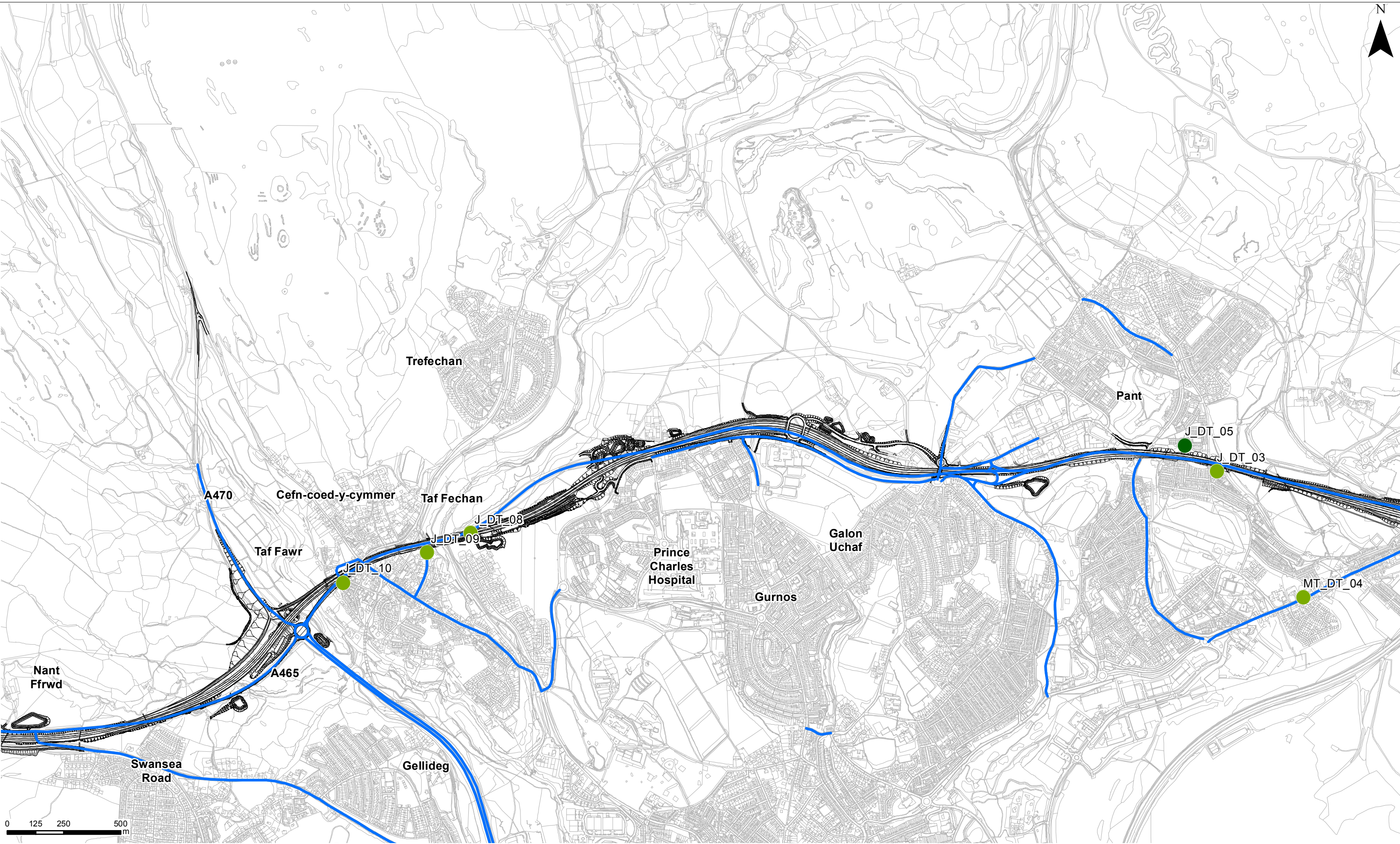
- 0 - 20.0
- > 20.0 - 30.0
- > 30.0 - 35.0
- > 35.0 - 40.0
- > 40.0



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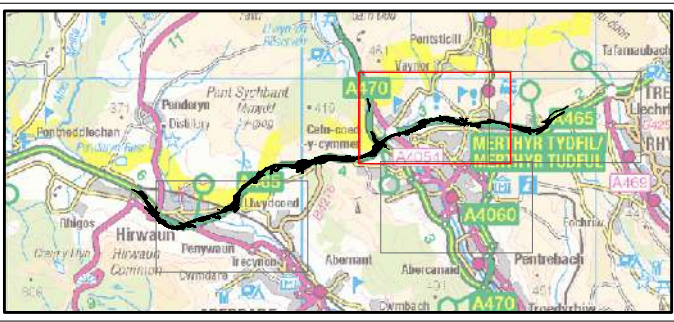
Legend


- Scheme design
- DMRB affected links

Monitoring locations


NO₂ concentration (ugm⁻³)

- 0 - 20.0
- > 20.0 - 30.0
- > 30.0 - 35.0
- > 35.0 - 40.0
- > 40.0



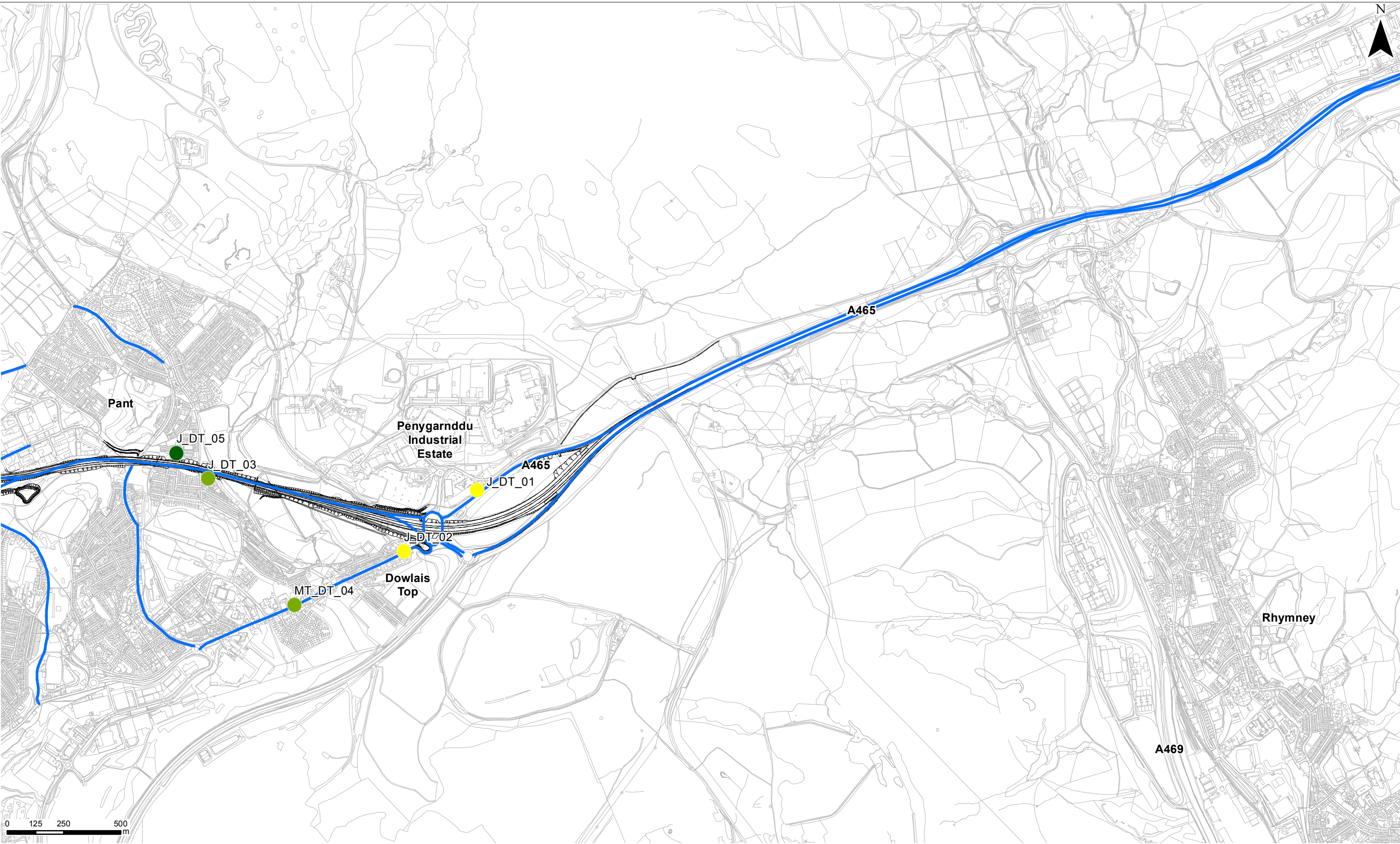


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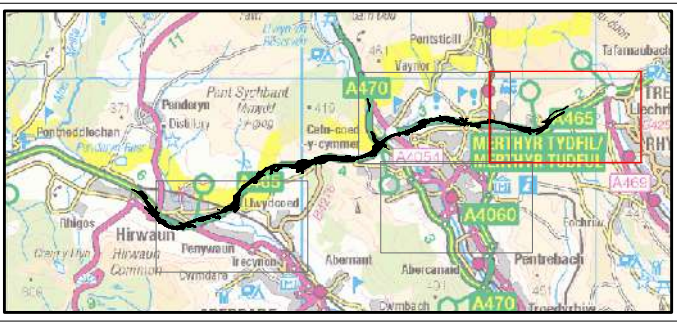
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- Scheme design
- DMRB affected links

Monitoring locations

NO₂ concentration (ugm⁻³)

- 0 - 20.0
- > 20.0 - 30.0
- > 30.0 - 35.0
- > 35.0 - 40.0
- > 40.0





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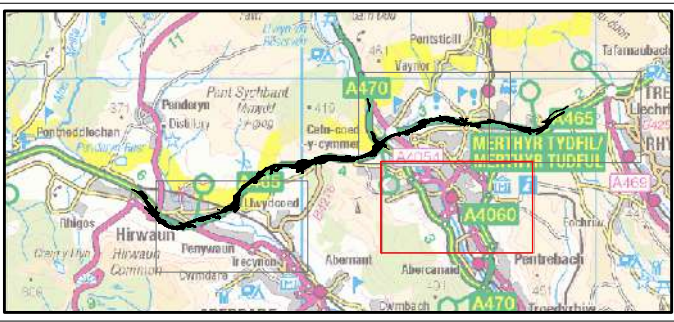
Legend


- Scheme design
- DMRB affected links
- Twynrodyn AQMA

Monitoring locations


NO₂ concentration (ugm⁻³)

- 0 - 20.0
- > 20.0 - 30.0
- > 30.0 - 35.0
- > 35.0 - 40.0
- > 40.0



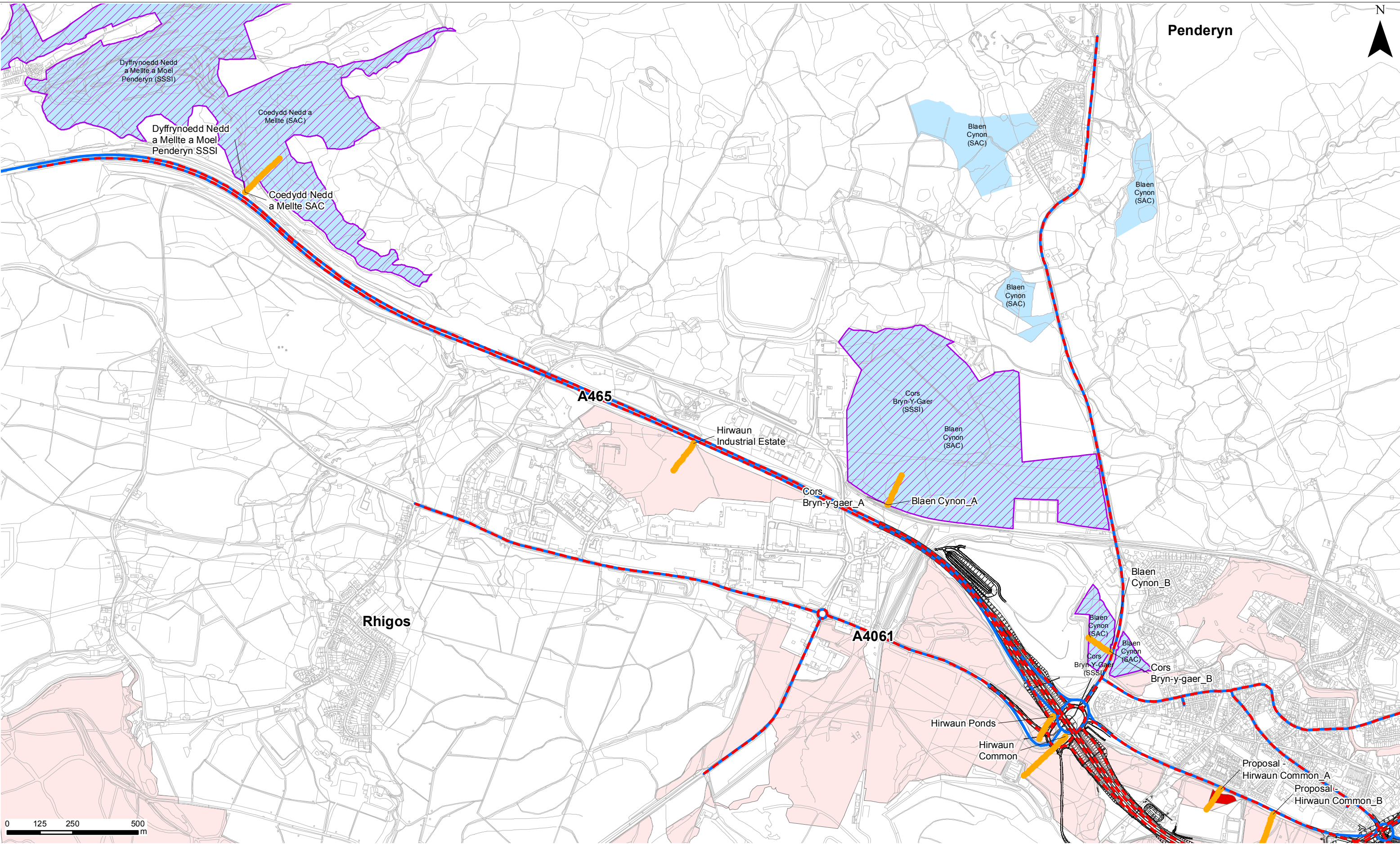


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Legend

- Scheme design
- Modelled roads: without scheme
- Modelled roads: with scheme
- Ecological receptor
- Twynrodyn AQMA
- Special Area of Conservation (SAC)
- Site of Special Scientific Interest (SSSI)
- Site of Importance for Nature Conservation (SINC)
- Ancient woodland
- Suitable habitat for marsh fritillary



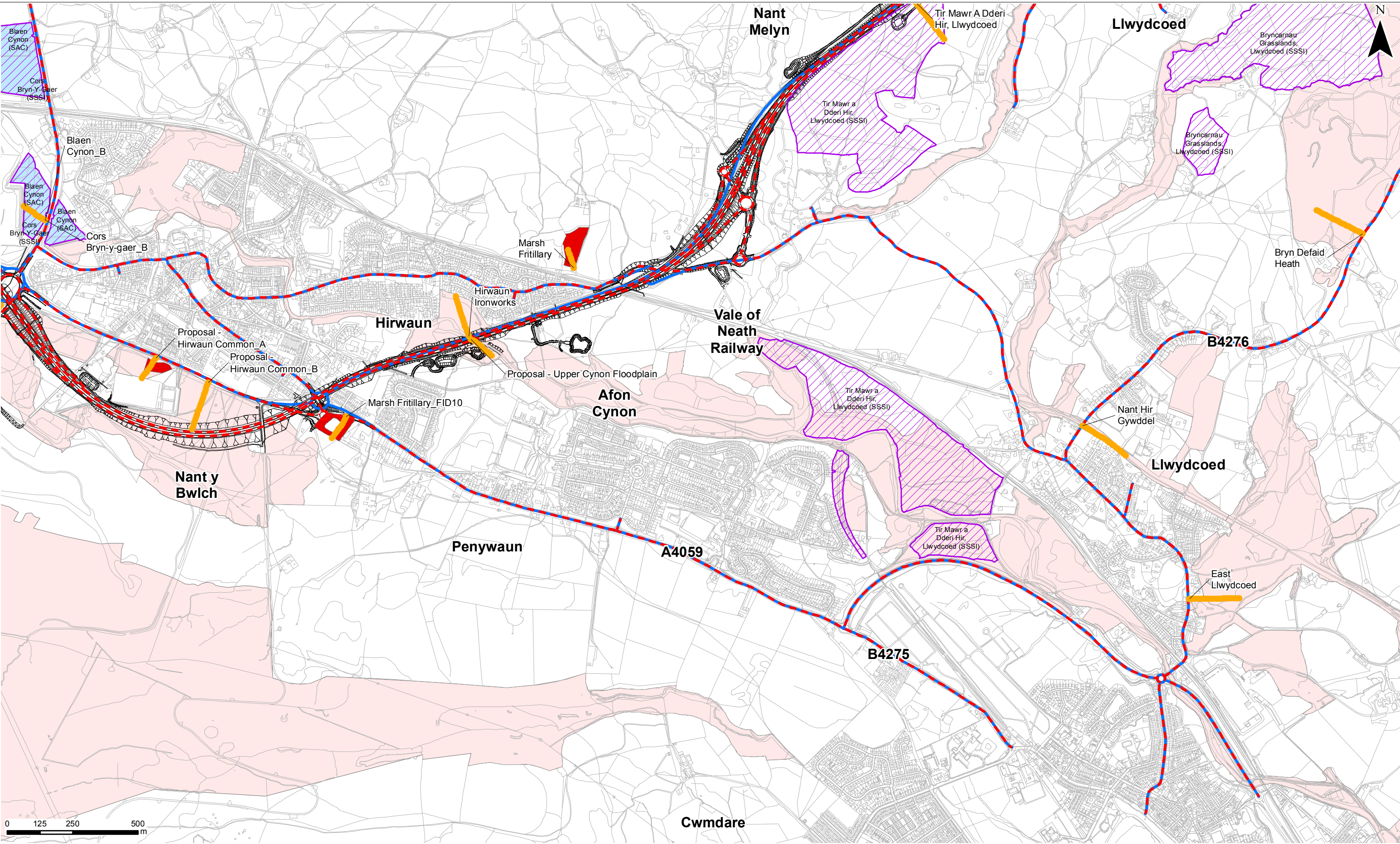


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Scale	1:13,000 @A3	DO NOT SCALE
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Legend

Scheme design

Modelled roads: without scheme

Modelled roads: with scheme

Ecological receptor

Twynrodyn AQMA

Special Area of Conservation (SAC)

Site of Special Scientific Interest (SSSI)

Site of Importance for Nature Conservation (SINC)

Ancient woodland

Suitable habitat for marsh fritillary



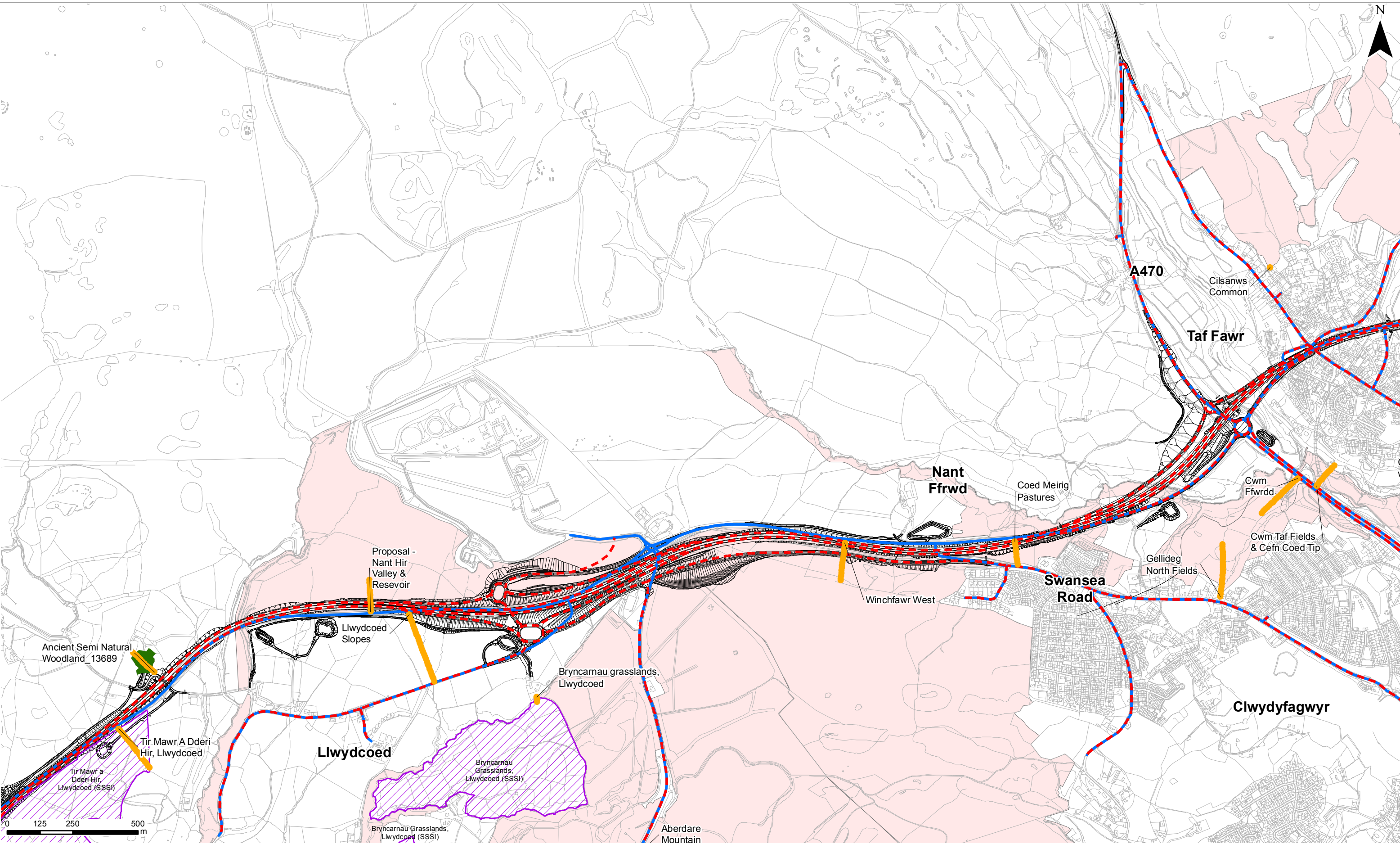


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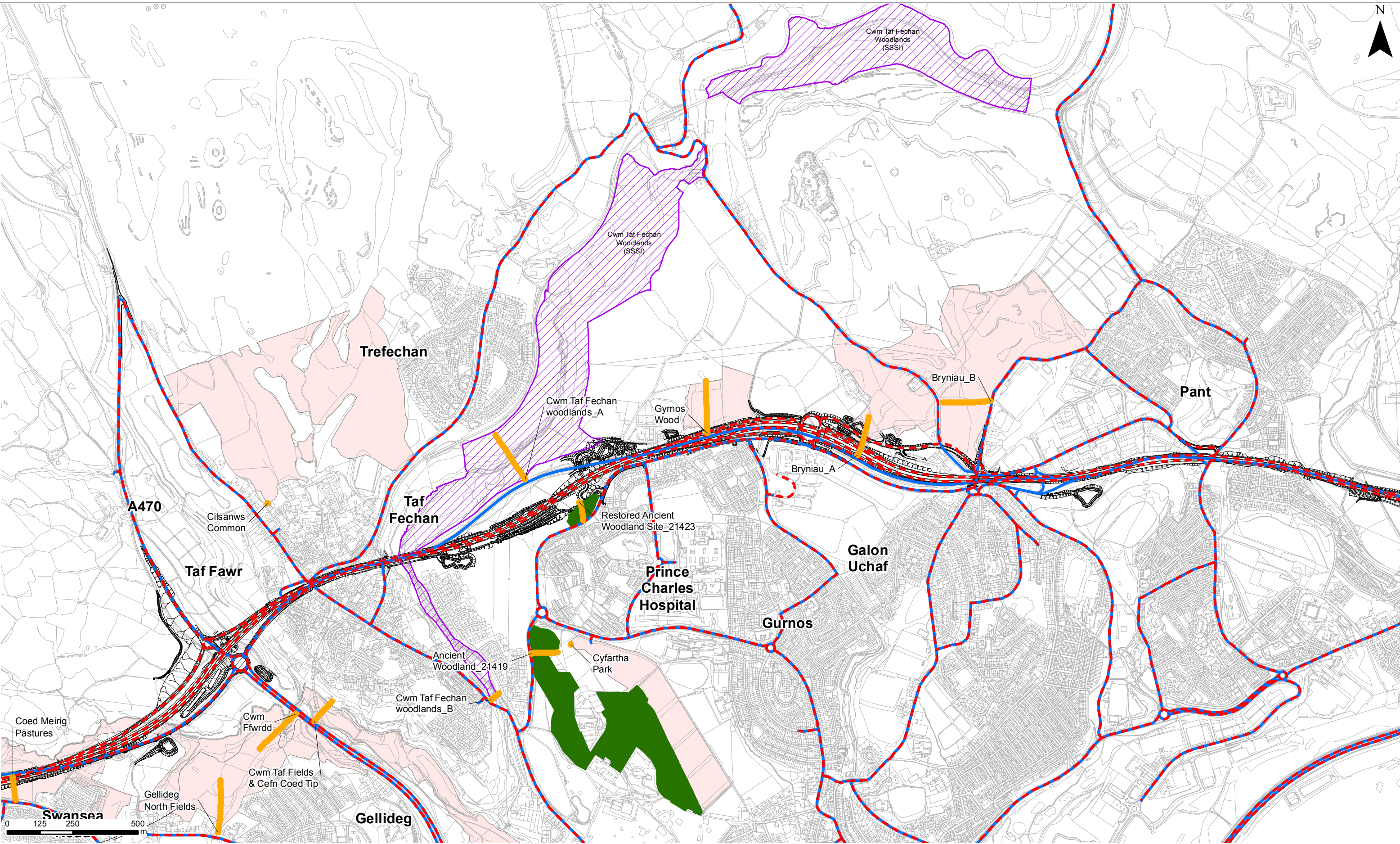


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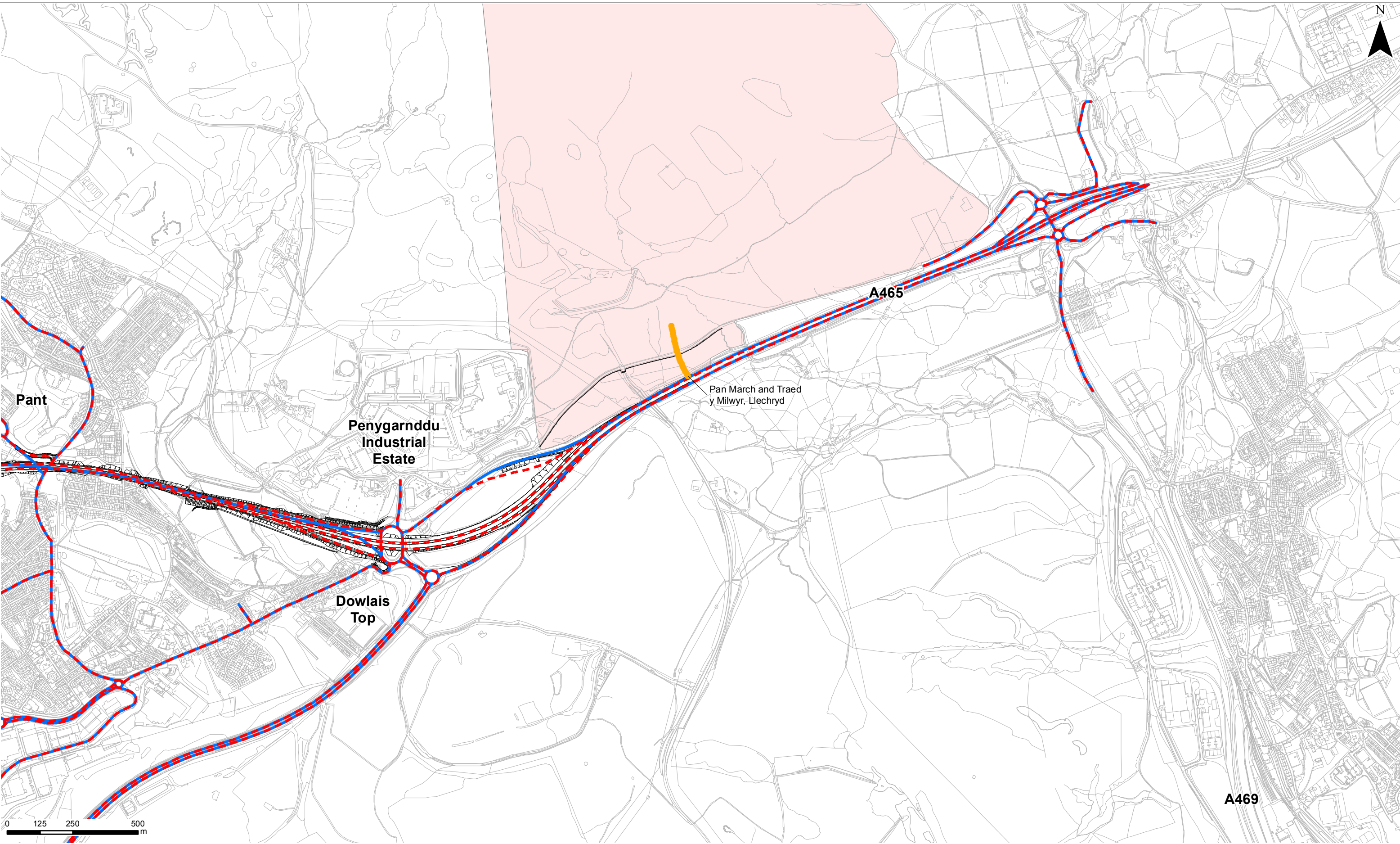


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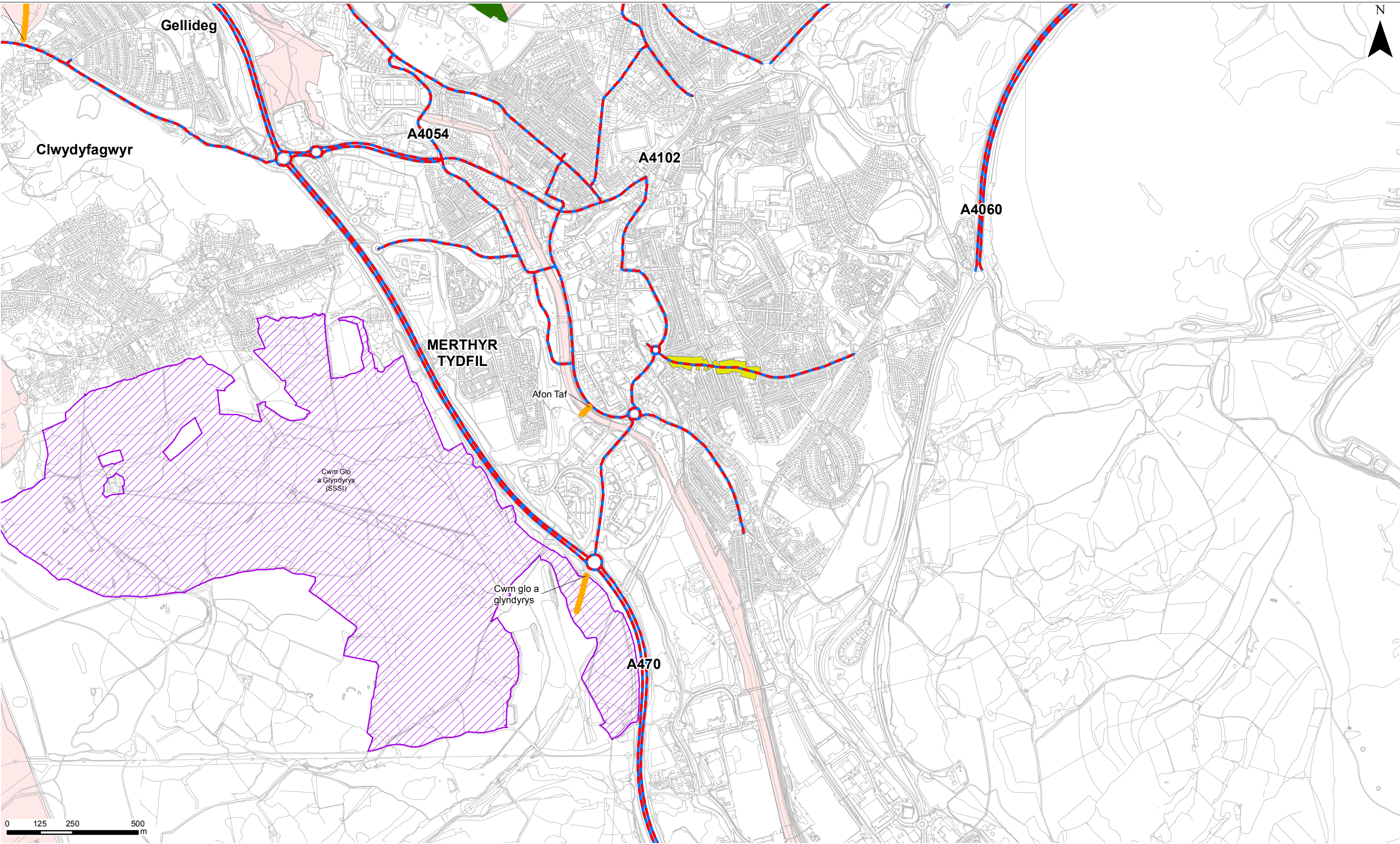


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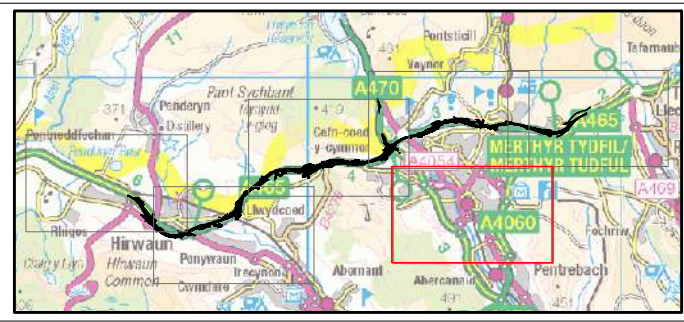
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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Ecological receptors and study area modelled in the air quality assessment	
Scale	1:13,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.3 Sheet 6 of 6	Rev 0



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Legend

Scheme design

Modelled roads: without scheme

Modelled roads: with scheme

Twynrodyn AQMA

R0XX Receptor ID

NO₂ net change with scheme µg/m³

> 4.0

> 2.0 - 4.0

> 0.4 - 2.0


> 0.0 - 0.4

> -0.4 - 0.0

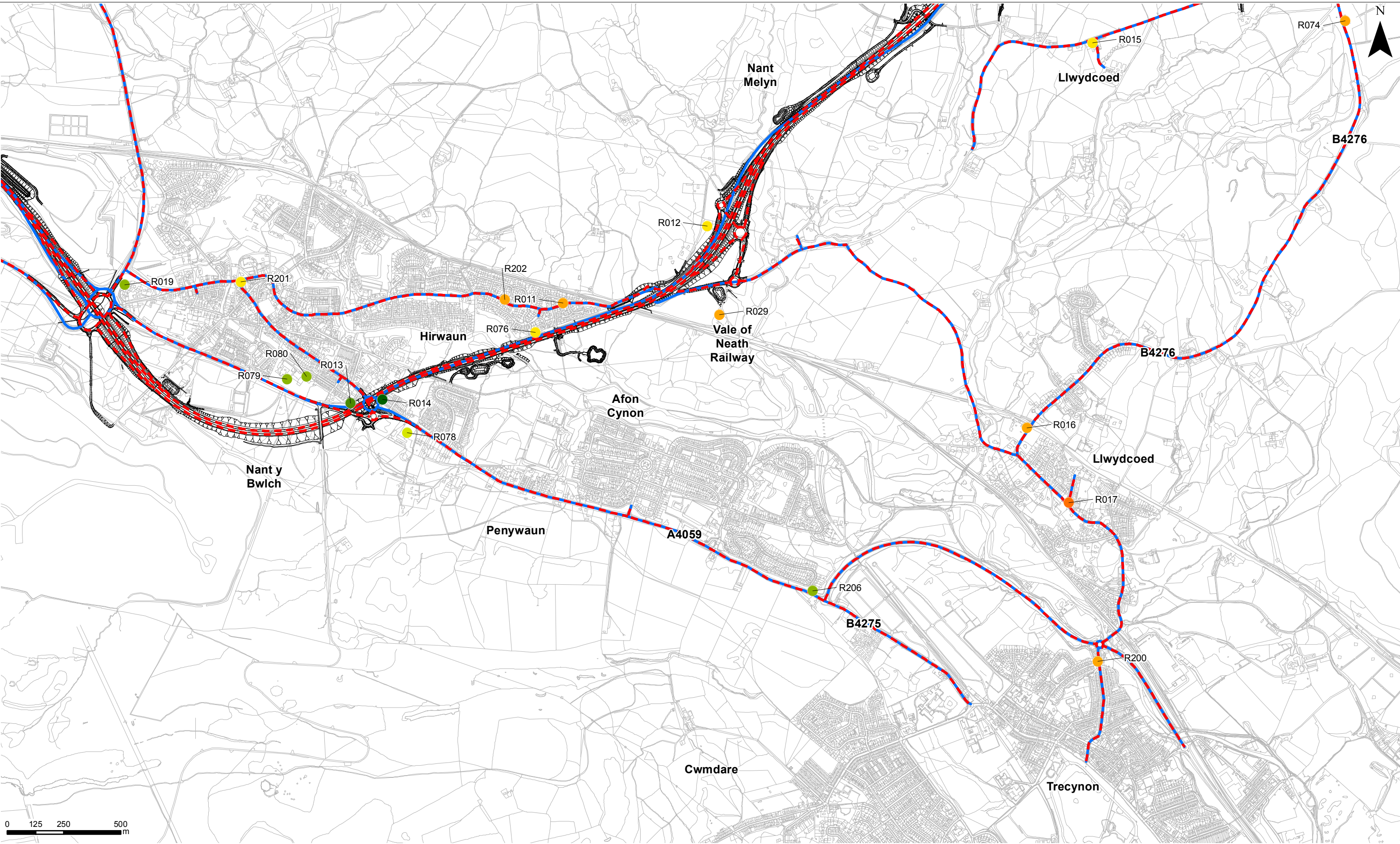
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< -4.0


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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Predicted change in NO ₂ concentrations between DM and DS scenarios for 2022	
Scale	1:15,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.4 Sheet 1 of 6	Rev 0



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Legend

—

 Scheme design

Modelled roads: without scheme

Modelled roads: with scheme

Twynrodyn AQMA

R0XX

 Receptor ID

NO₂ net change with scheme µg/m³

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> 2.0 - 4.0

> 0.4 - 2.0

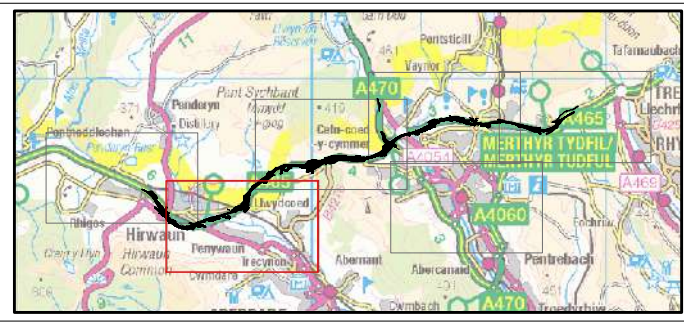
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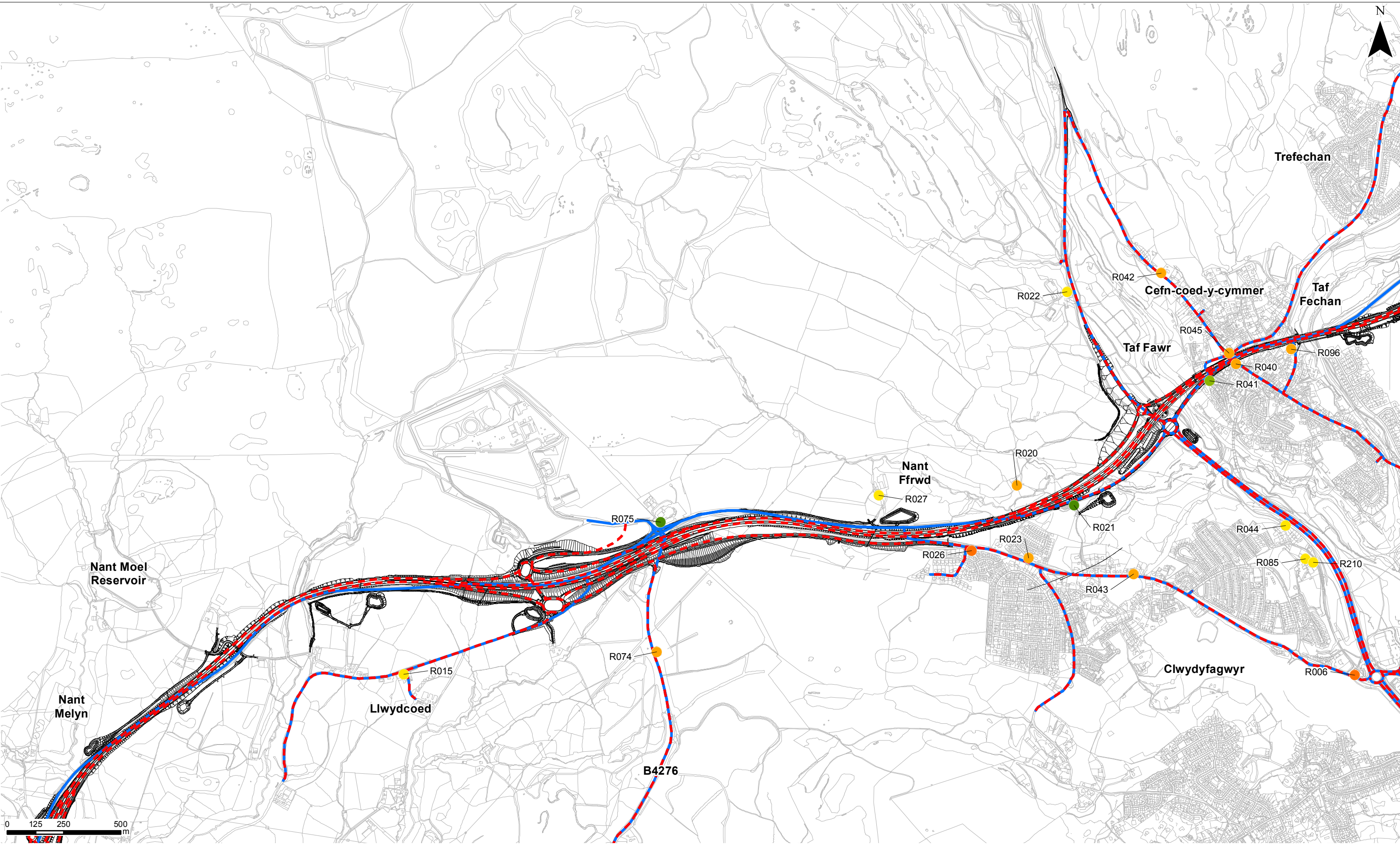
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Title	Predicted change in NO ₂ concentrations between DM and DS scenarios for 2022	
Scale	1:15,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.4 Sheet 2 of 6	Rev 0



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Legend

—

 Scheme design

—

 Modelled roads: without scheme

- -

 Modelled roads: with scheme

■

 Twynrodyn AQMA

R0XX Receptor ID

NO₂ net change with scheme µg/m³

●

 > 4.0

●

 > 2.0 - 4.0

●

 > 0.4 - 2.0

●

 > 0.0 - 0.4

●

 > -0.4 - 0.0

●

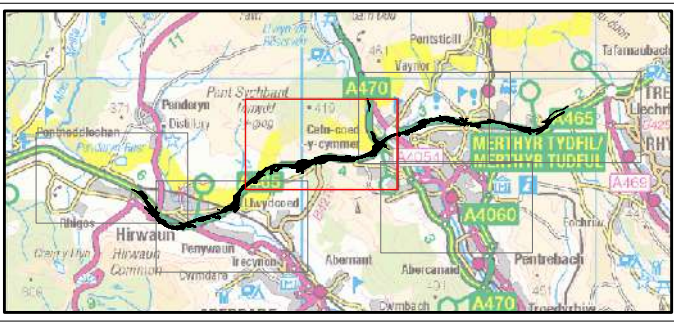
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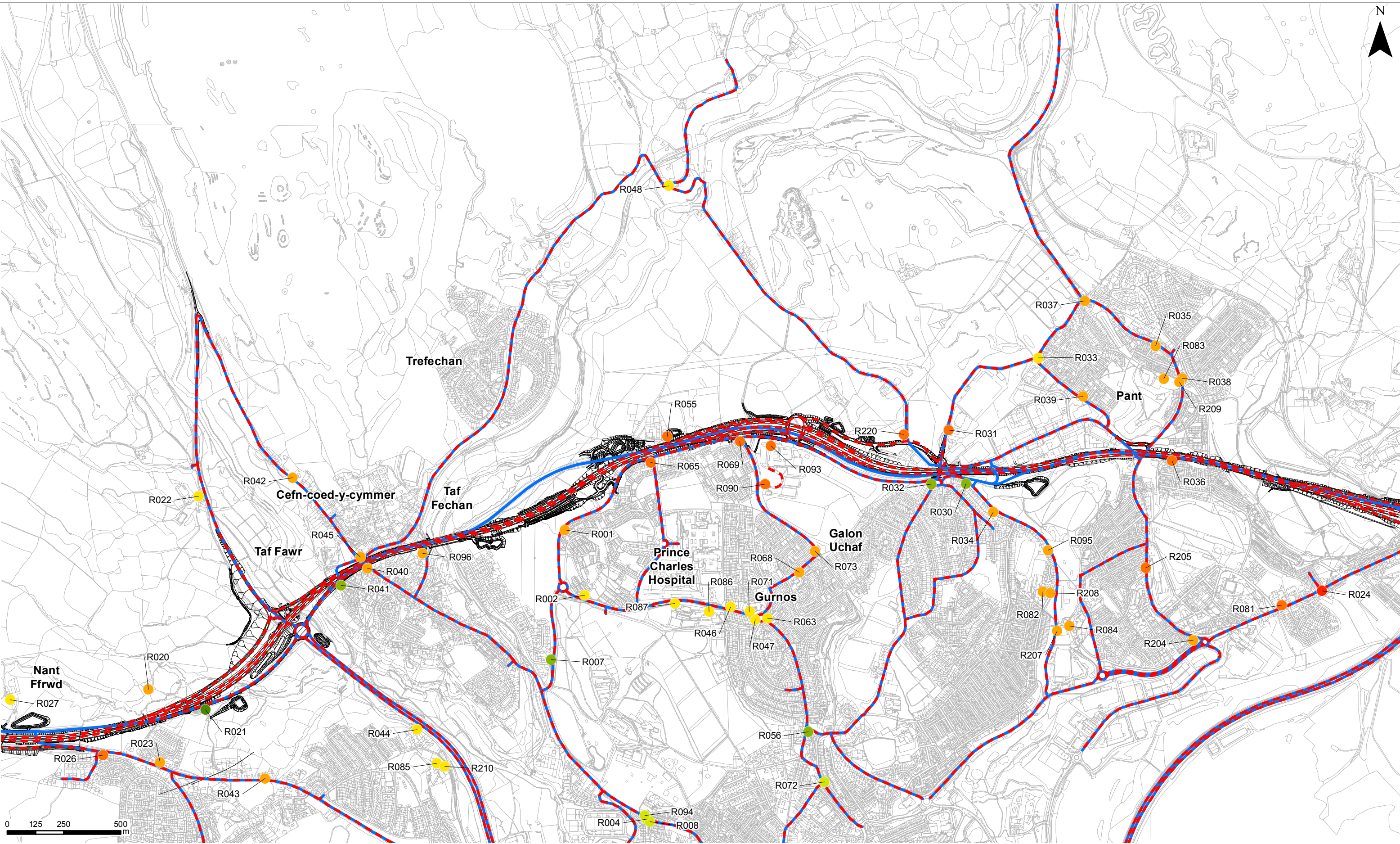
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Title	Predicted change in NO ₂ concentrations between DM and DS scenarios for 2022	
Scale	1:15,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.4 Sheet 3 of 6	Rev 0



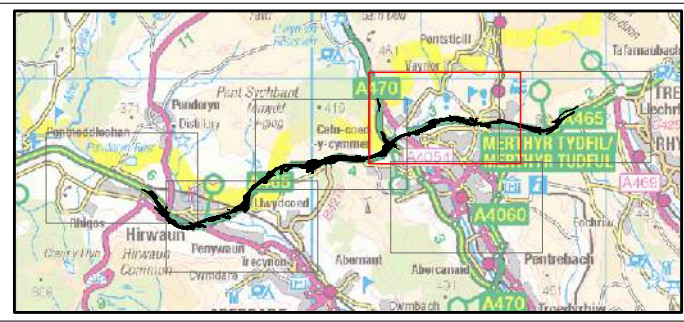
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Legend

- Scheme design
- Modelled roads: without scheme
- Modelled roads: with scheme
- Twynrodyn AQMA
- R0XX Receptor ID


NO₂ net change with scheme µg/m³

- > 4.0
- > 2.0 - 4.0
- > 0.4 - 2.0
- > 0.0 - 0.4
- > -0.4 - 0.0
- > -2.0 - -0.4
- > -4.0 - -2.0
- < -4.0



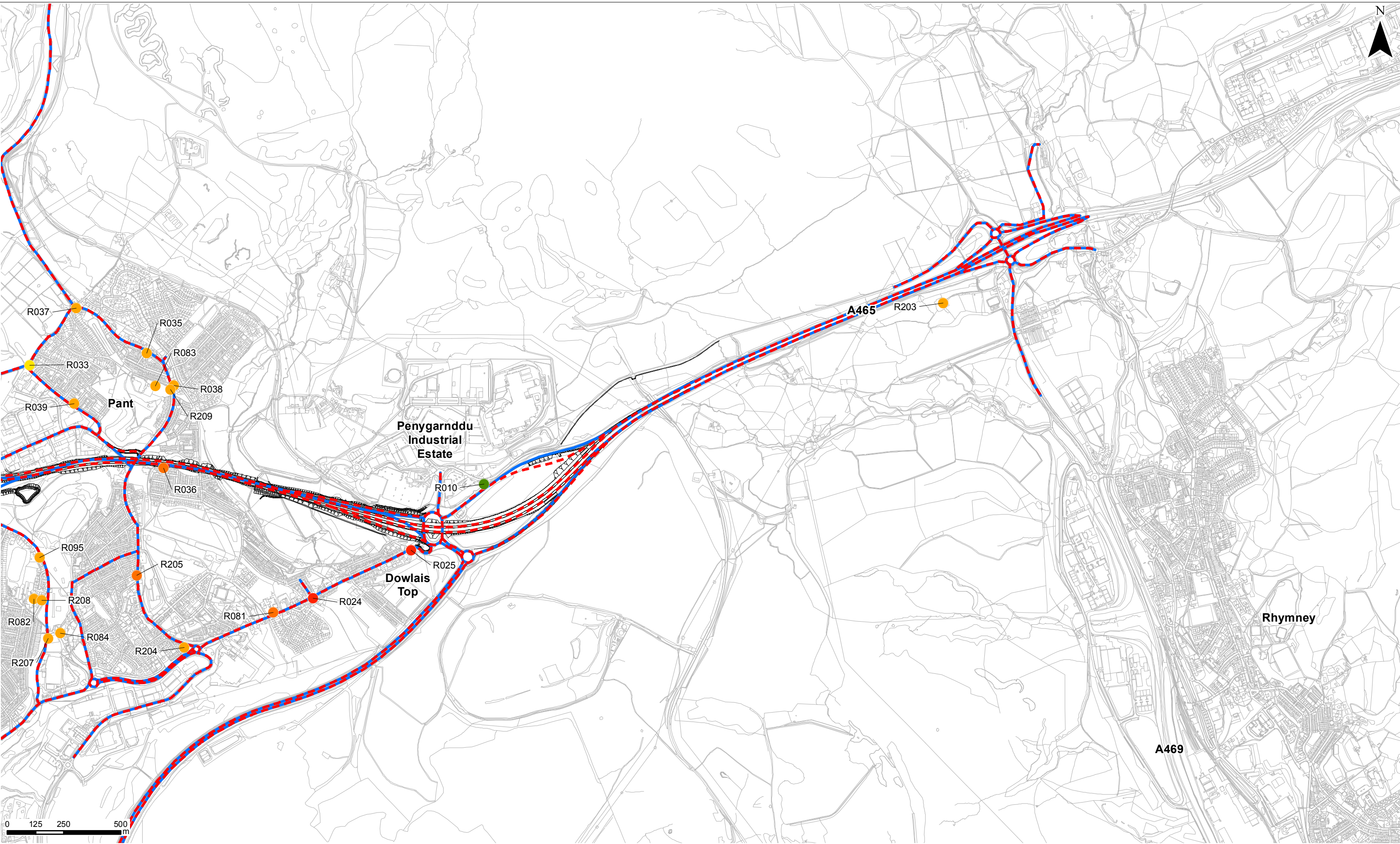


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Scale	1:15,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.4 Sheet 4 of 6	Rev 0



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Legend

Scheme design

Modelled roads: without scheme

Modelled roads: with scheme

Twynrodyn AQMA

R0XX Receptor ID

NO₂ net change with scheme µg/m³

> 4.0

> 2.0 - 4.0

> 0.4 - 2.0


> 0.0 - 0.4

> -0.4 - 0.0


> -2.0 - -0.4

> -4.0 - -2.0

< -4.0



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Scale	1:15,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.4 Sheet 5 of 6	Rev 0



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Legend

Scheme design

Modelled roads: without scheme

Modelled roads: with scheme

Twynrodyn AQMA

R0XX Receptor ID

NO₂ net change with scheme µg/m³

> 4.0

> 2.0 - 4.0

> 0.4 - 2.0


> 0.0 - 0.4

> -0.4 - 0.0


> -2.0 - -0.4

> -4.0 - -2.0

< -4.0

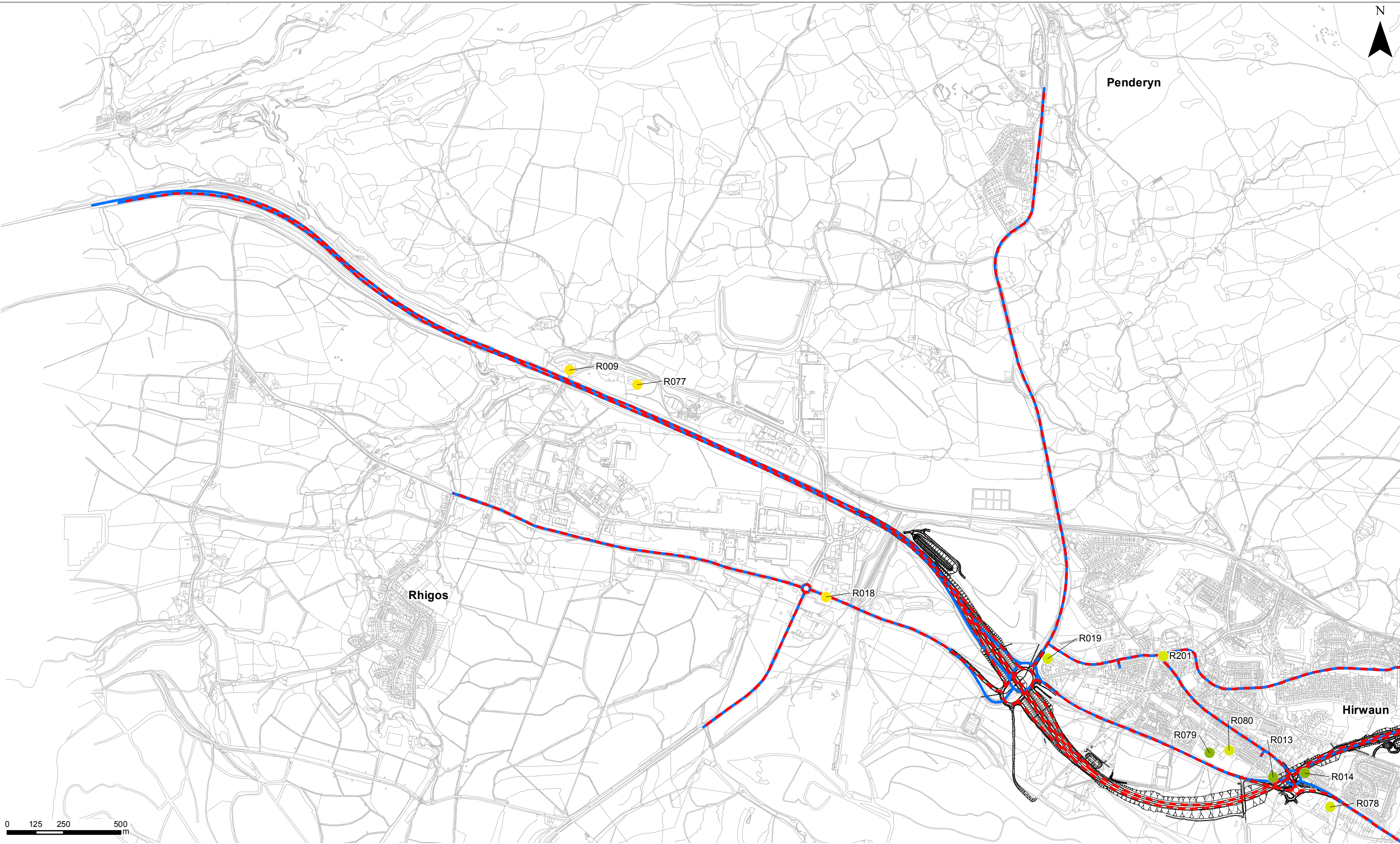


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Scale	1:15,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.4 Sheet 6 of 6	Rev 0



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Legend

Scheme design

Modelled roads: without scheme

Modelled roads: with scheme

Twynrodyn AQMA

R0XX

Receptor ID

PM₁₀ net change with scheme µg/m³

> 4.0

> 2.0 - 4.0

> 0.4 - 2.0

> 0.0 - 0.4


> -0.4 - 0.0

> -2.0 - -0.4


> -4.0 - -2.0

< -4.0



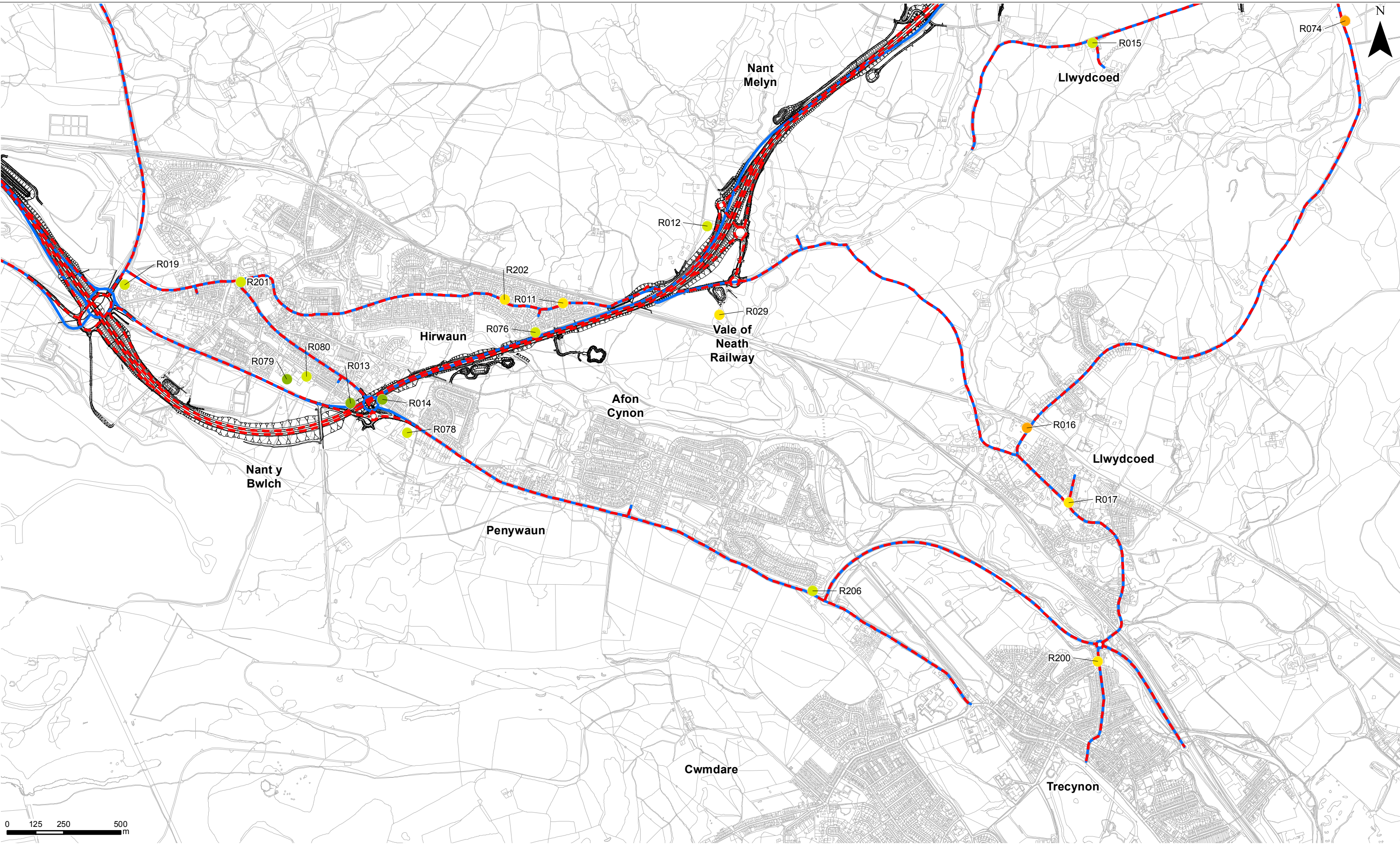


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Title	Predicted change in PM ₁₀ concentrations between DM and DS scenarios for 2022	
Scale	1:15,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.5 Sheet 1 of 6	Rev 0



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Legend

—

Scheme design

—

Modelled roads: without scheme

- -

Modelled roads: with scheme

■

Twynrodyn AQMA

R0XX

Receptor ID

PM₁₀ net change with scheme µg/m³

●

> 4.0

●

> 2.0 - 4.0

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> 0.4 - 2.0

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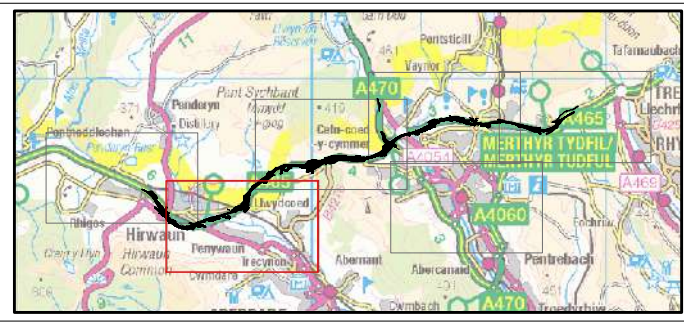
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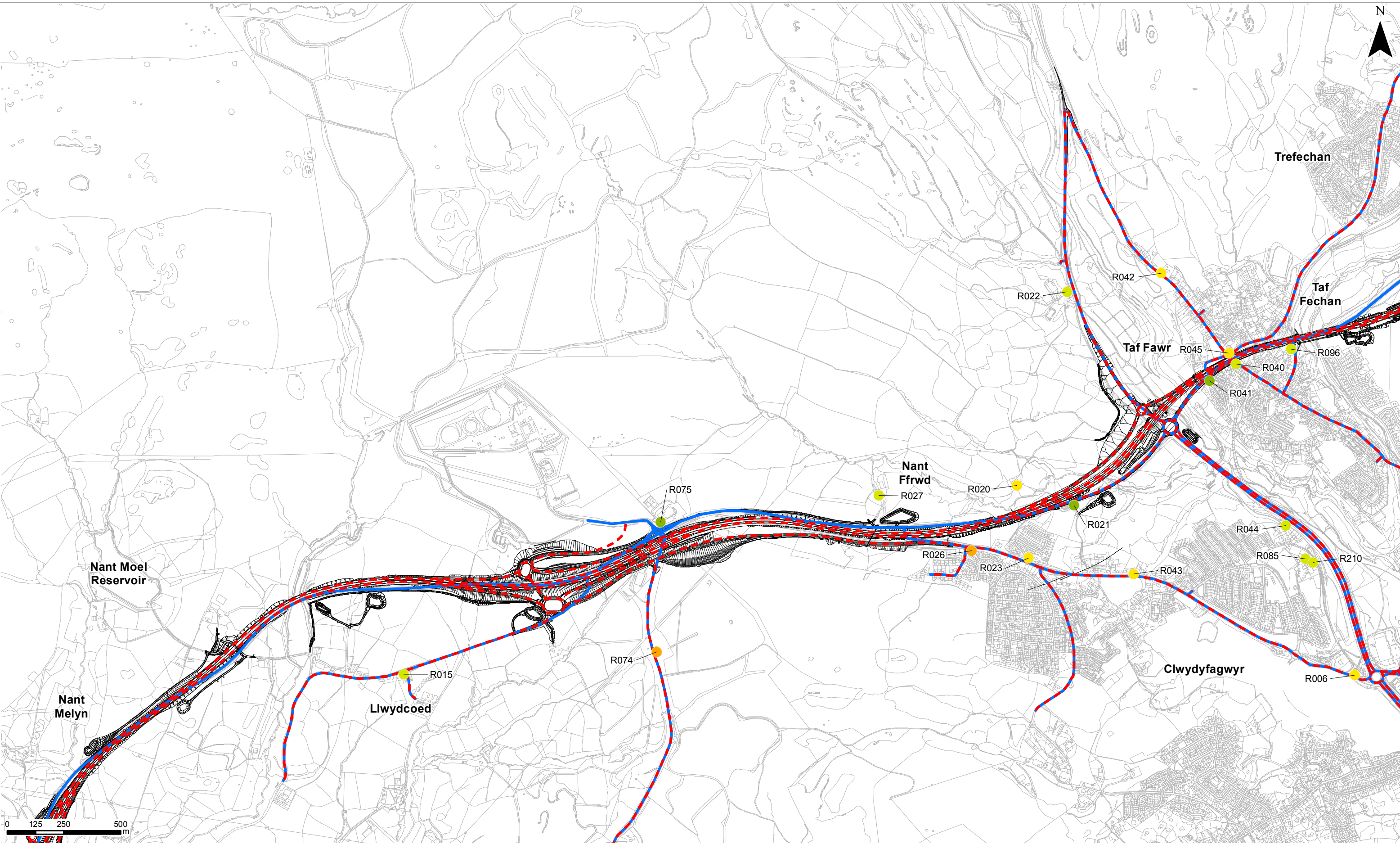
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Scale	1:15,000 @A3	DO NOT SCALE
Drawing No.	Figure 8.5 Sheet 2 of 6	Rev 0



0	MAR18	FINAL	FL	RM	HP	WB
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Scheme design

Modelled roads: without scheme

Modelled roads: with scheme

Twynrodyn AQMA

R0XX

Receptor ID

PM₁₀ net change with scheme µg/m³

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> 2.0 - 4.0

> 0.4 - 2.0


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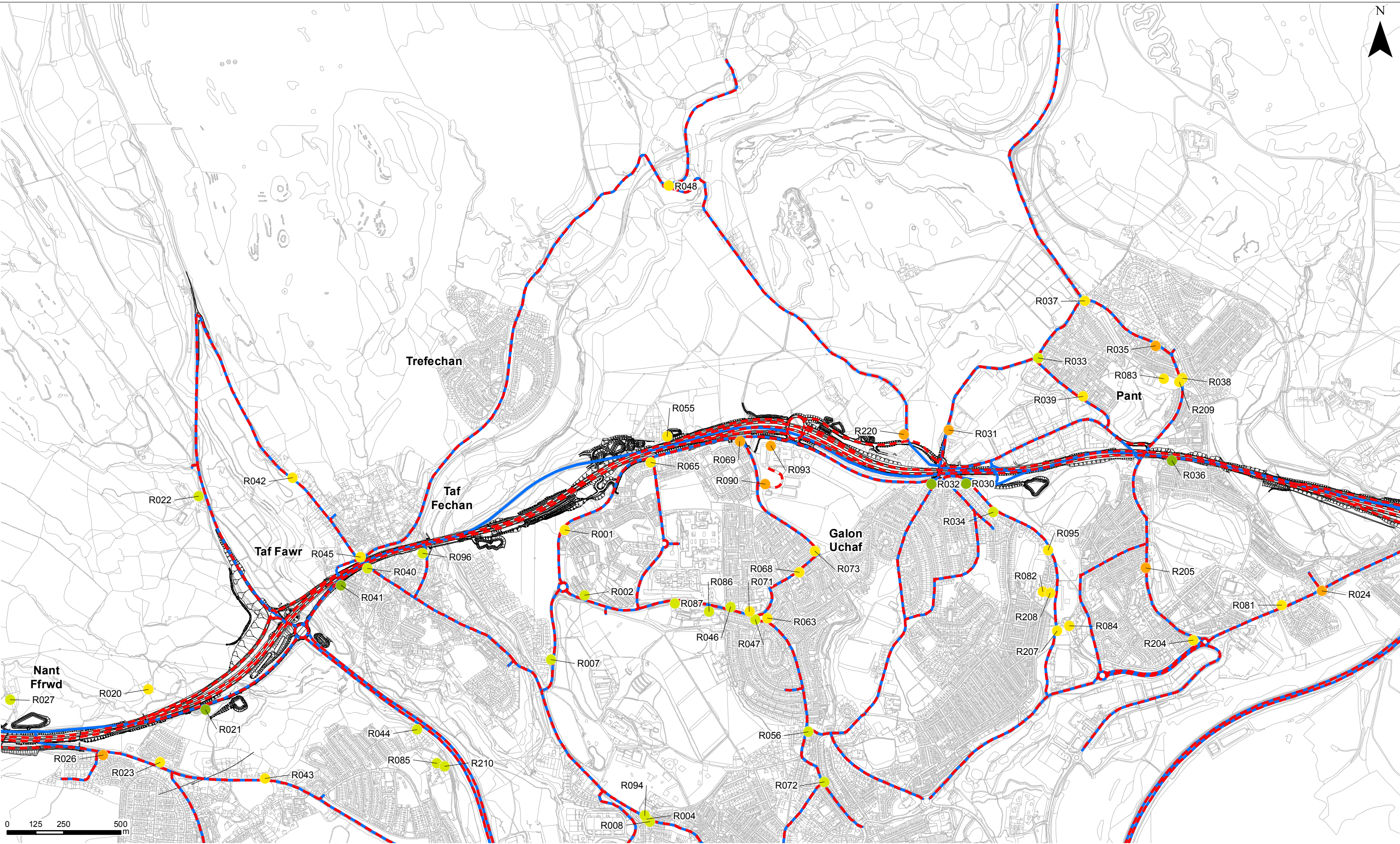
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Drawing No.	Figure 8.5 Sheet 3 of 6	Rev 0



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Scheme design

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R0XX

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> 4.0

> 2.0 - 4.0

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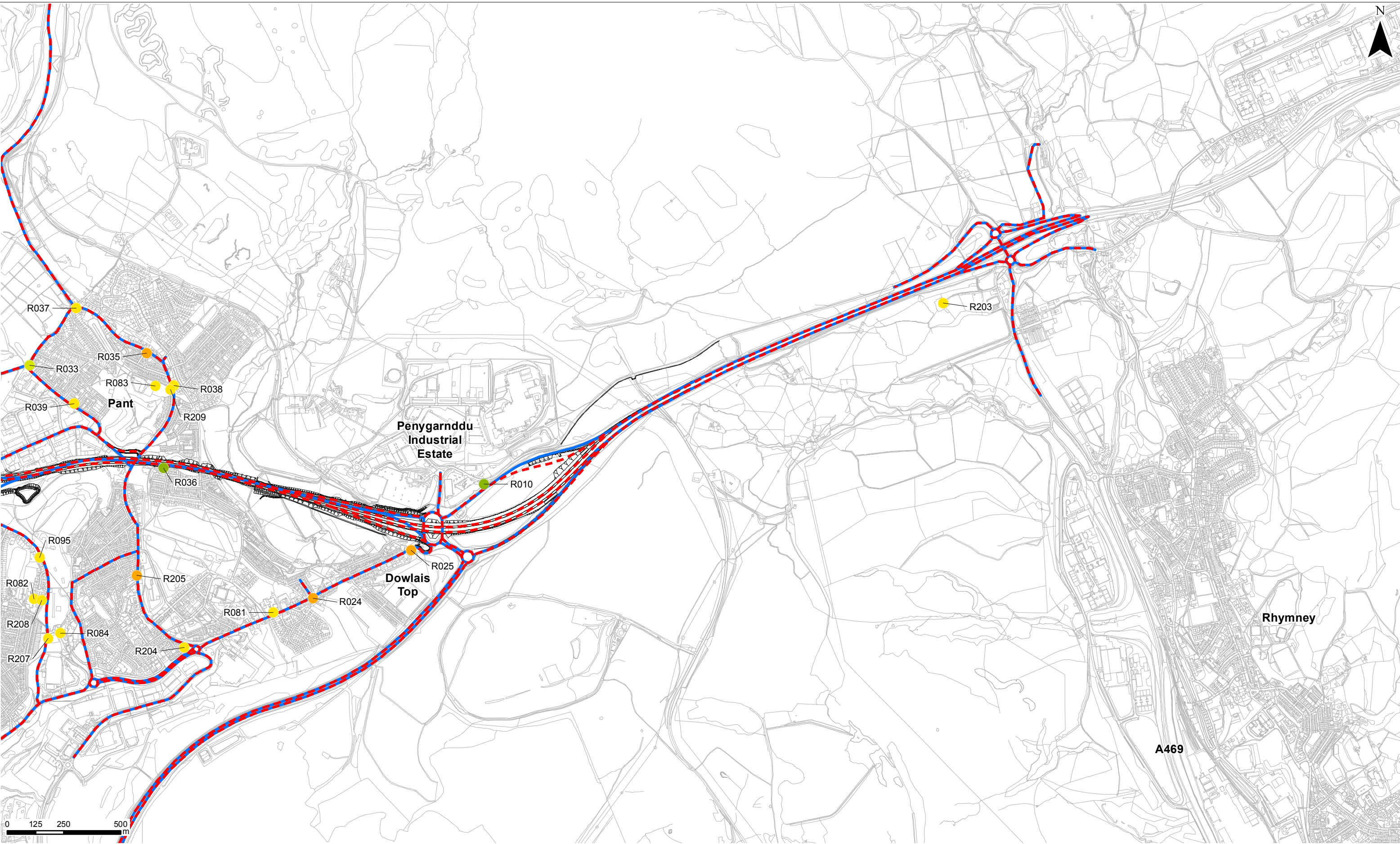


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Drawing No.	Figure 8.5 Sheet 4 of 6	Rev 0



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R0XX Receptor ID

PM₁₀ net change with scheme µg/m³

> 4.0

> 2.0 - 4.0

> 0.4 - 2.0

> 0.0 - 0.4


> -0.4 - 0.0

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< -4.0





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Drawing No.	Figure 8.5 Sheet 5 of 6	Rev 0



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Modelled roads: without scheme

Modelled roads: with scheme

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R0XX

Receptor ID

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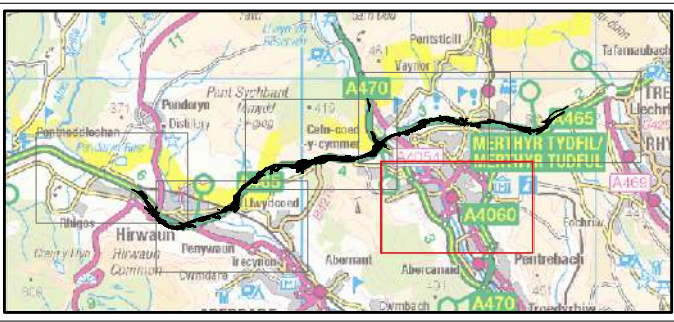
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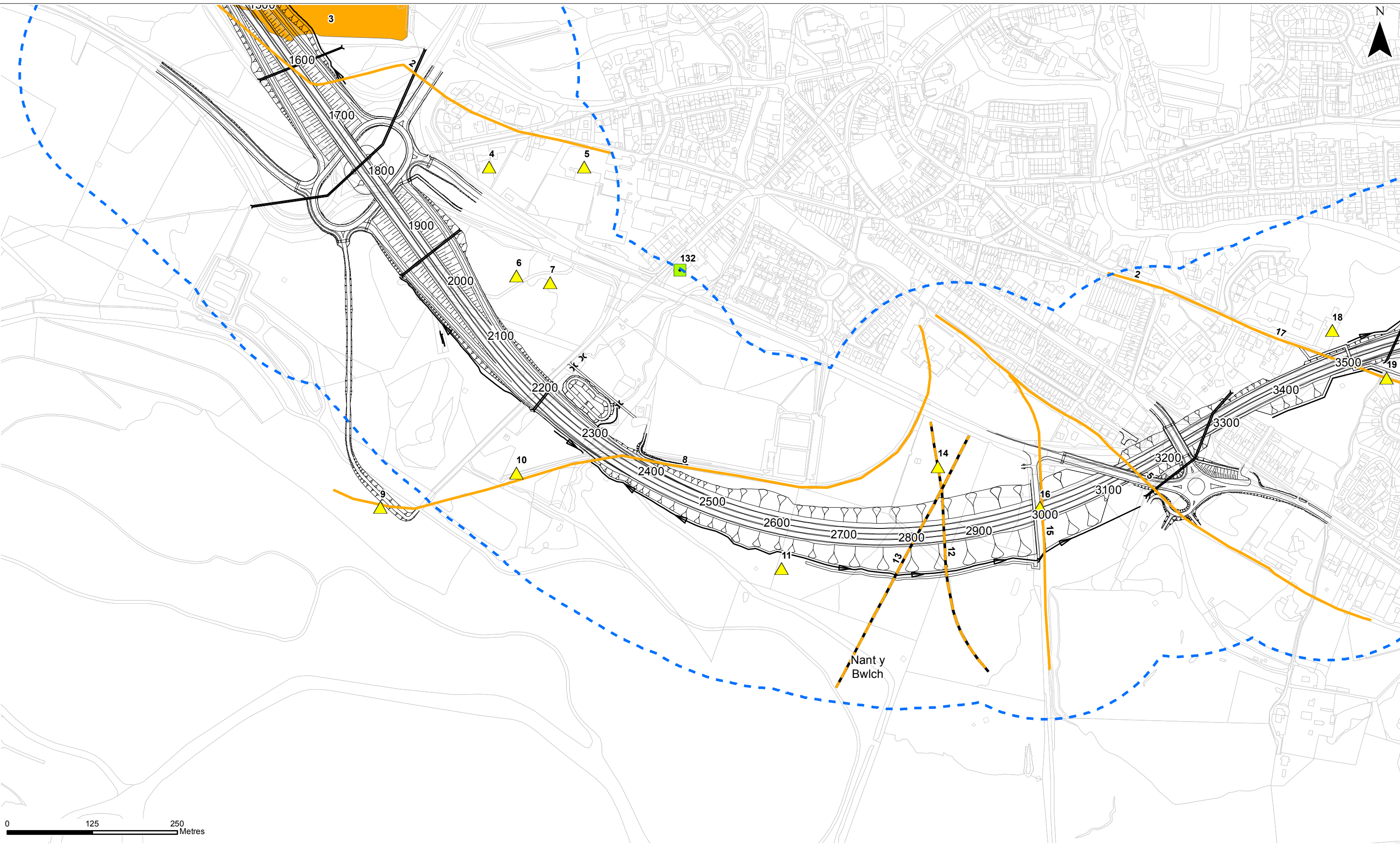
Environmental Statement Supplement Volume 3: Revised Figures

All Figures included in this Volume are a direct replacement of the corresponding Figures issued in the July 2017 published Environmental Statement Volume 3.

Revised Figures accompanying Chapter 9: Cultural Heritage are included as follows:

Figure 9.1	Archaeological Remains and Historic Buildings (including Conservation Areas)
Figure 9.2	Historic Landscape Character Areas
Figure 9.3	Registered Historic Landscapes

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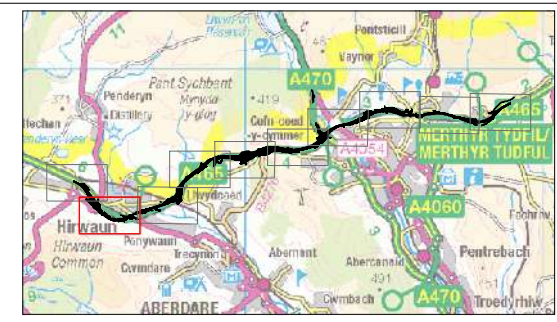
Legend

- Scheme design
- Study area
- Archaeological Remains
- Historic Buildings
- Listed Building
- Locally Listed Building

- Archaeological Remains (asset subject to trial trenching)
- Archaeological Remains
- Conservation Area
- Historic Buildings
- Scheduled Monument

Conservation Character Areas

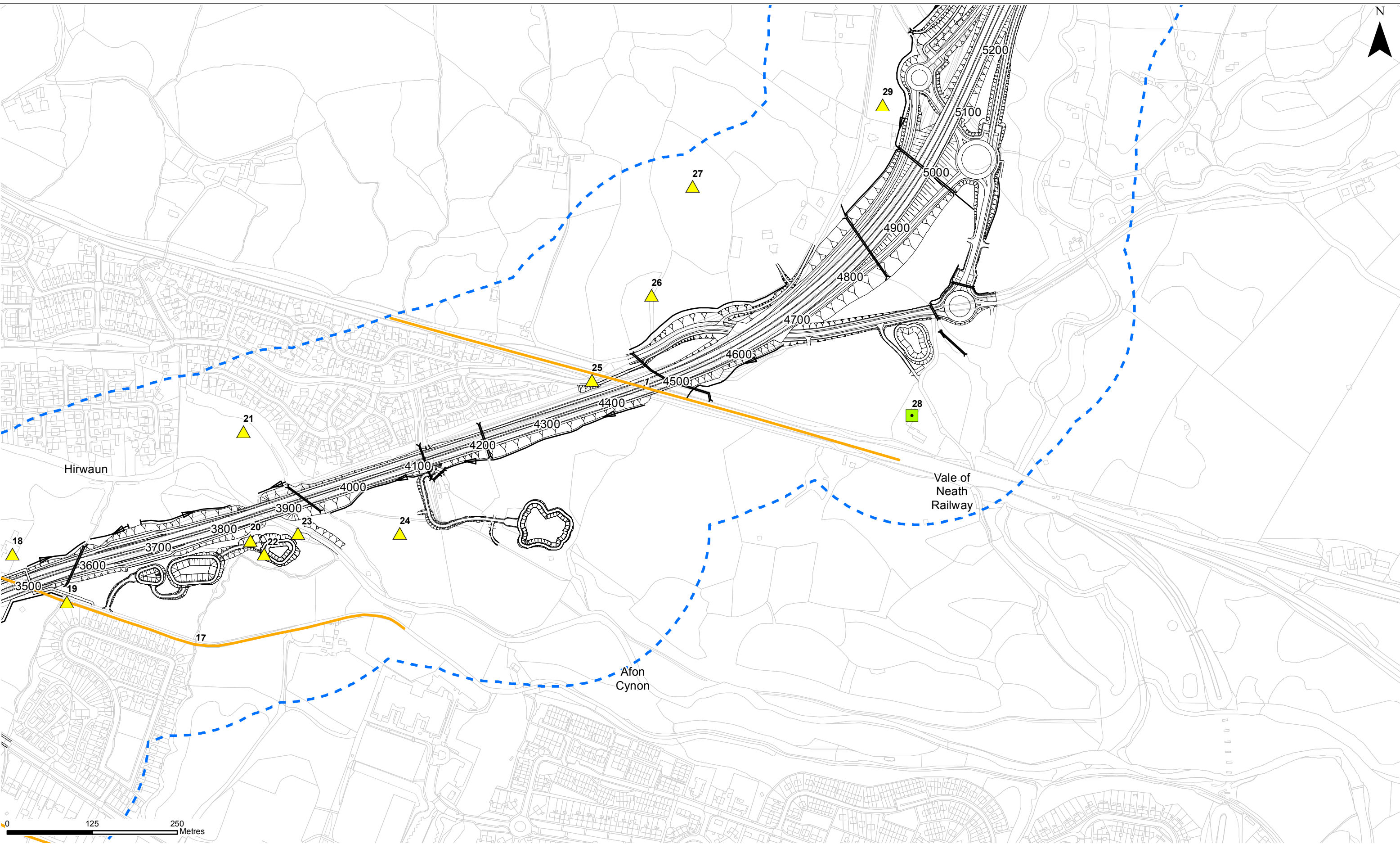
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- Area 2
- Area 3
- Area 4



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Title	Archaeological remains and historic buildings (including Conservation Areas)		
Scale	1:5,000 @A3	DO NOT SCALE	
Drawing No.	Figure 9.1 Sheet 2 of 10	Rev 0	



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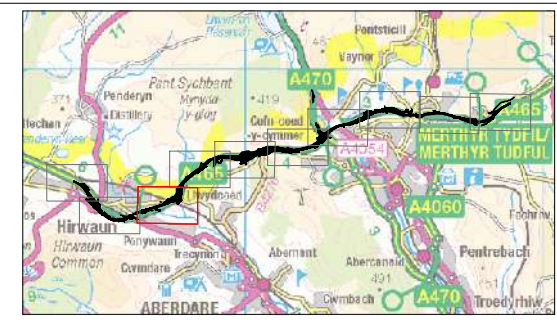
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- Scheme design
- Study area
- Archaeological Remains
- Historic Buildings
- Listed Building
- Locally Listed Building

- Archaeological Remains (asset subject to trial trenching)
- Archaeological Remains
- Conservation Area
- Historic Buildings
- Scheduled Monument

Conservation Character Areas

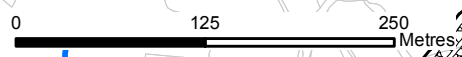
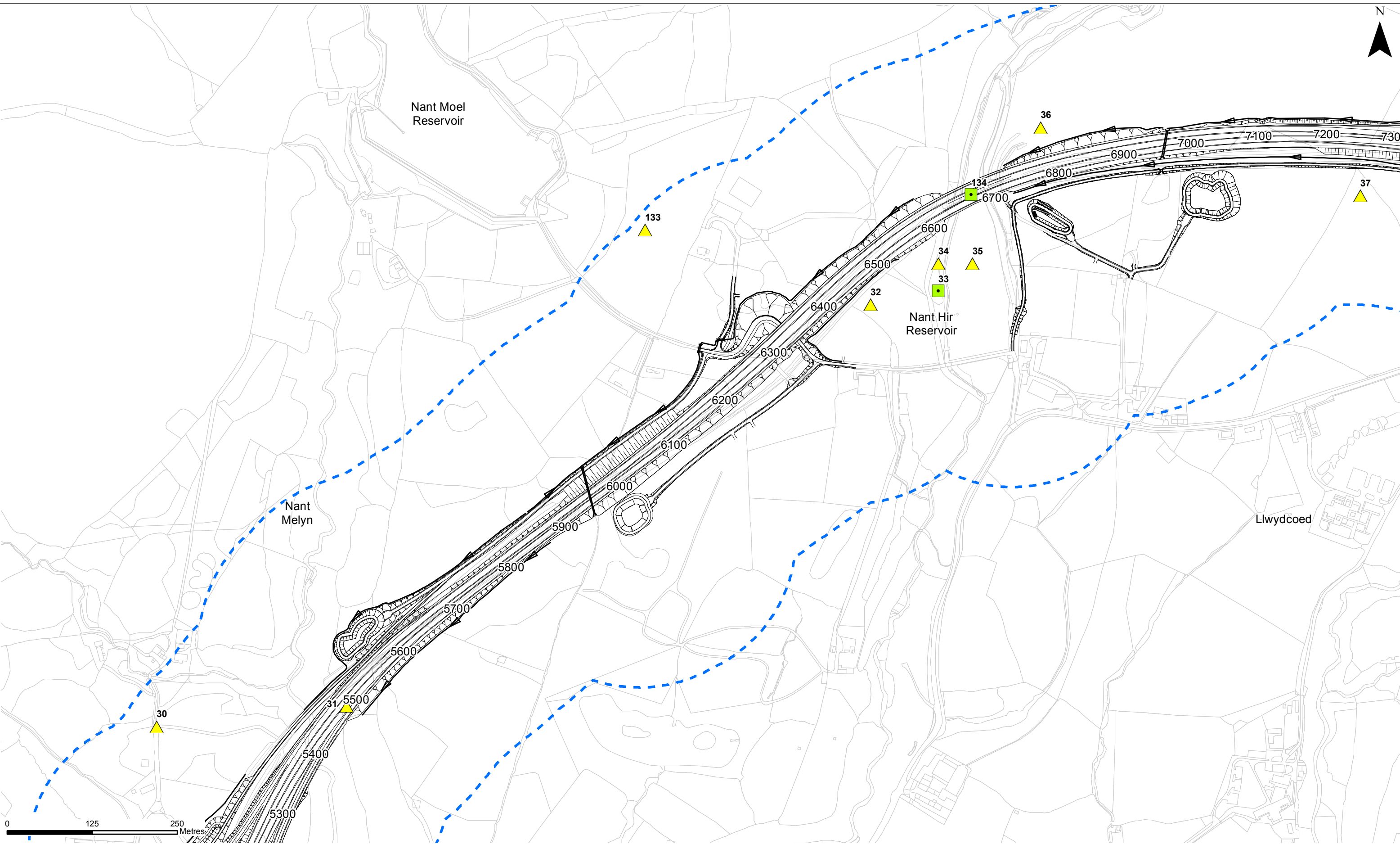
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Scale	1:5,000 @A3	DO NOT SCALE	
Drawing No.	Figure 9.1 Sheet 3 of 10	Rev 0	



0	MAR18	FINAL	FL	RTL	GT	WB	
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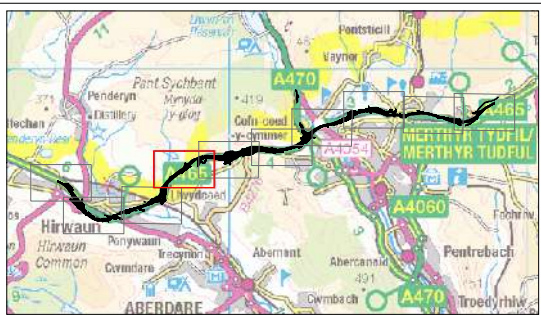
Legend

- Scheme design
- Study area
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- Historic Buildings
- Listed Building
- Locally Listed Building

- Archaeological Remains (asset subject to trial trenching)
- Archaeological Remains
- Conservation Area
- Historic Buildings
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Conservation Character Areas

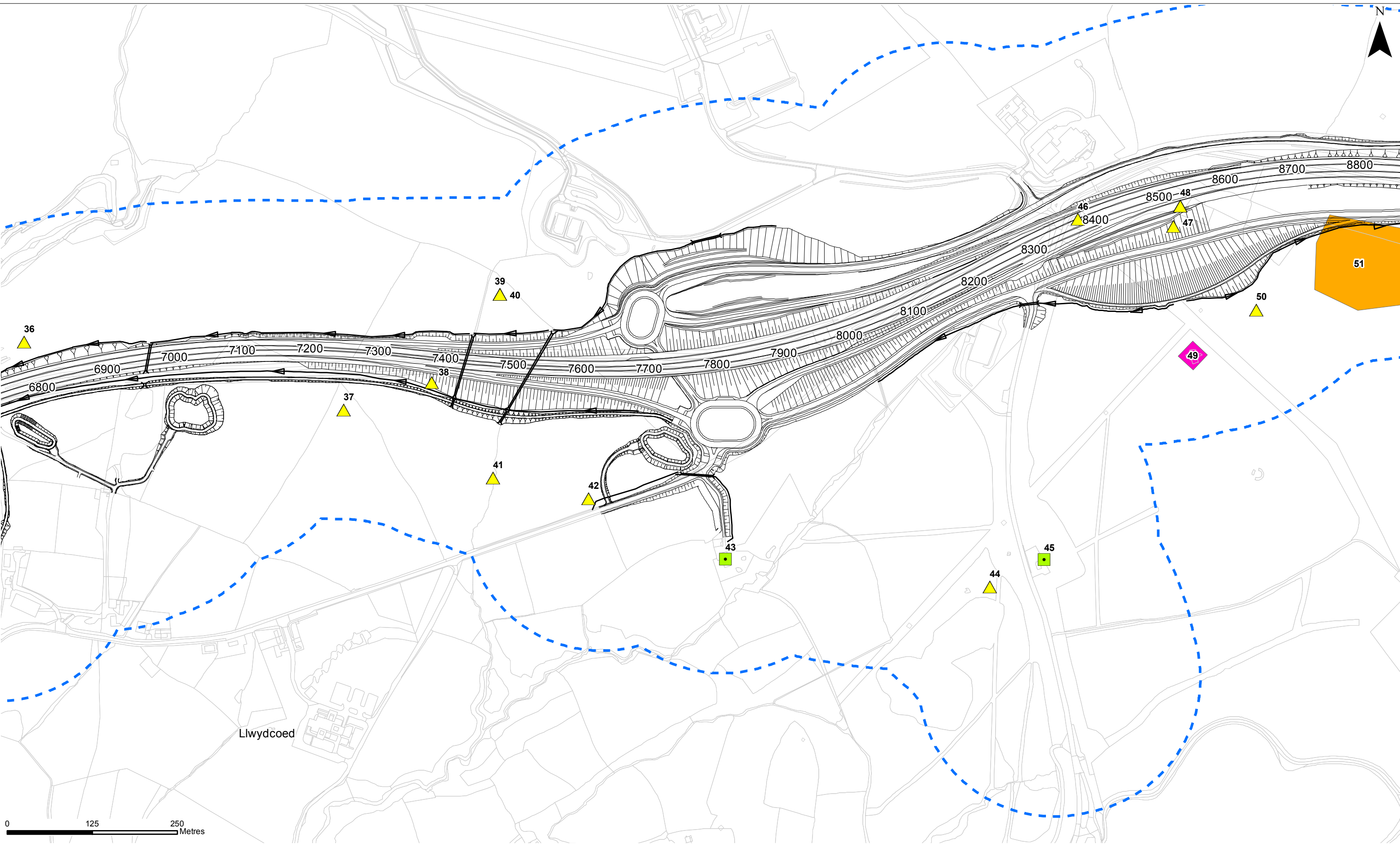
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- Area 3
- Area 4



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Scale	1:5,000 @A3	DO NOT SCALE	
Drawing No.	Figure 9.1 Sheet 4 of 10	Rev 0	



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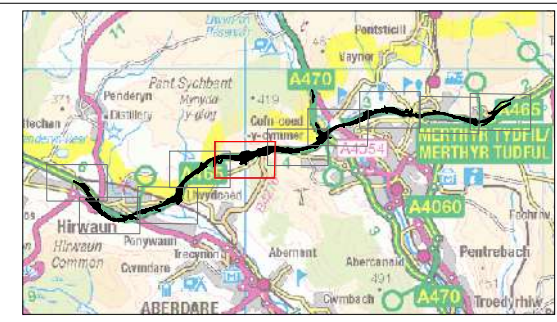
Legend


- Scheme design
- Study area
- Archaeological Remains
- Historic Buildings
- Listed Building
- Locally Listed Building

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- Archaeological Remains
- Conservation Area
- Historic Buildings
- Scheduled Monument


Conservation Character Areas

- Area 1
- Area 2
- Area 3
- Area 4



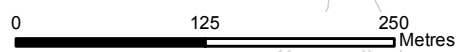
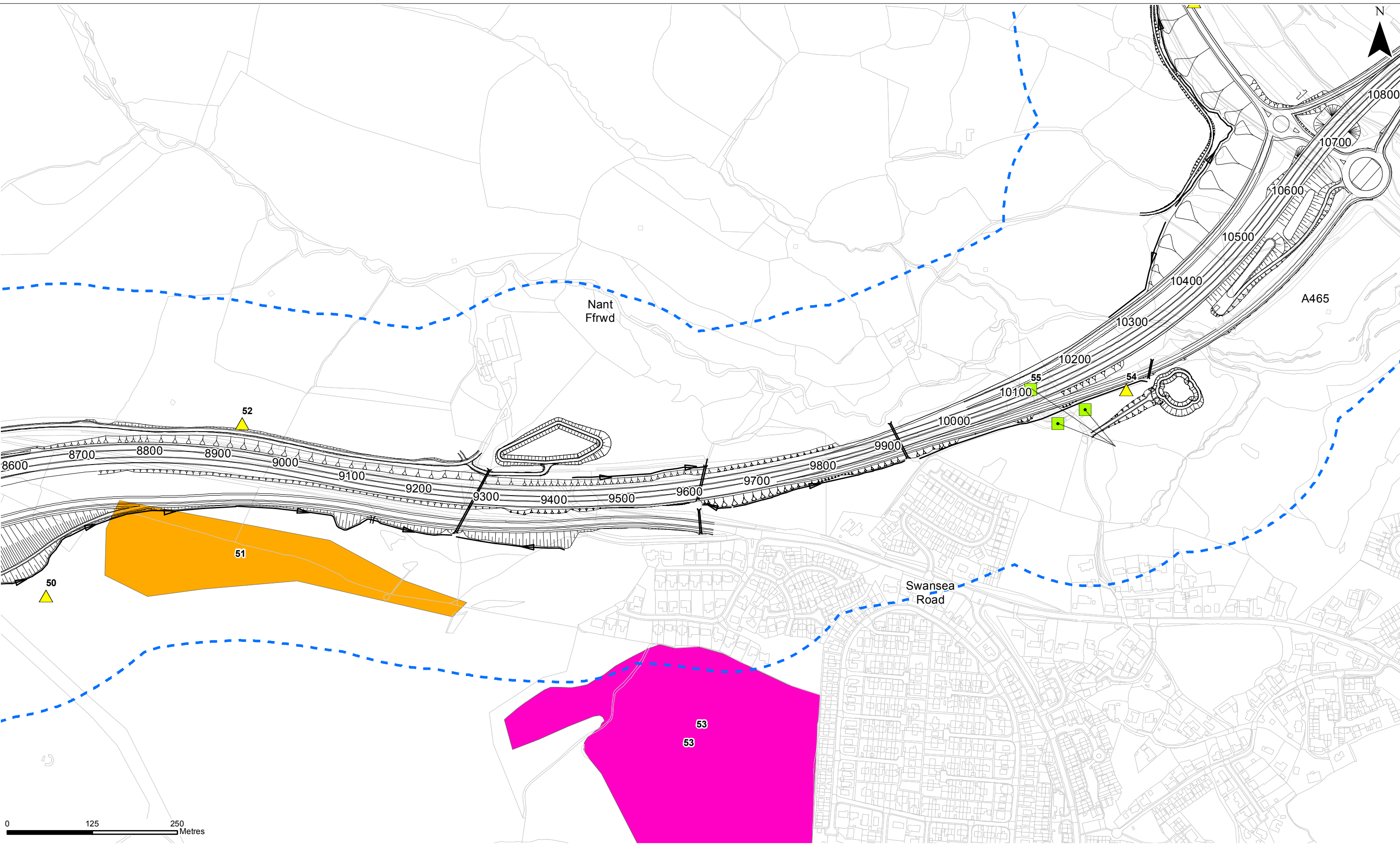


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Scale	1:5,000 @A3	DO NOT SCALE	
Drawing No.	Figure 9.1 Sheet 5 of 10	Rev 0	



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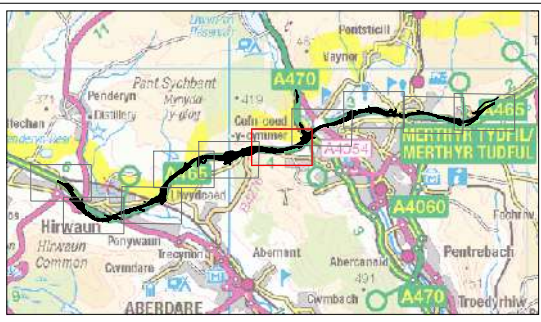
Legend

- Scheme design
- Study area
- Archaeological Remains
- Historic Buildings
- Listed Building
- Locally Listed Building

- Archaeological Remains (asset subject to trial trenching)
- Archaeological Remains
- Conservation Area
- Historic Buildings
- Scheduled Monument

Conservation Character Areas

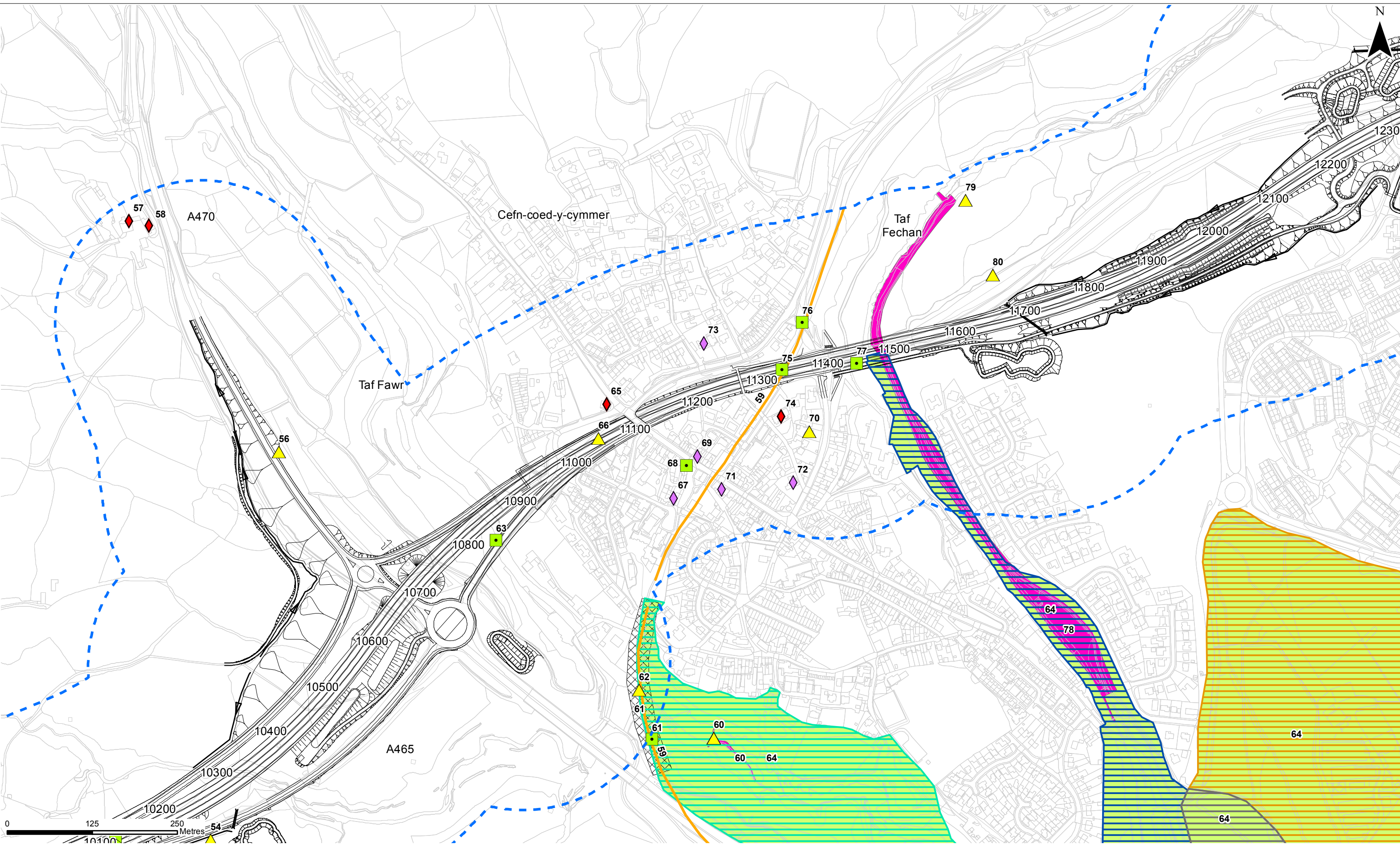
- Area 1
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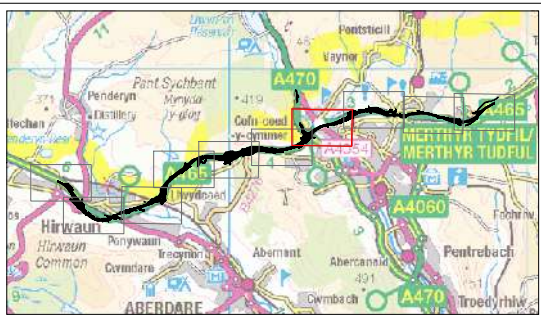
Legend

- Scheme design
- Study area
- Archaeological Remains
- Historic Buildings
- Listed Building
- Locally Listed Building

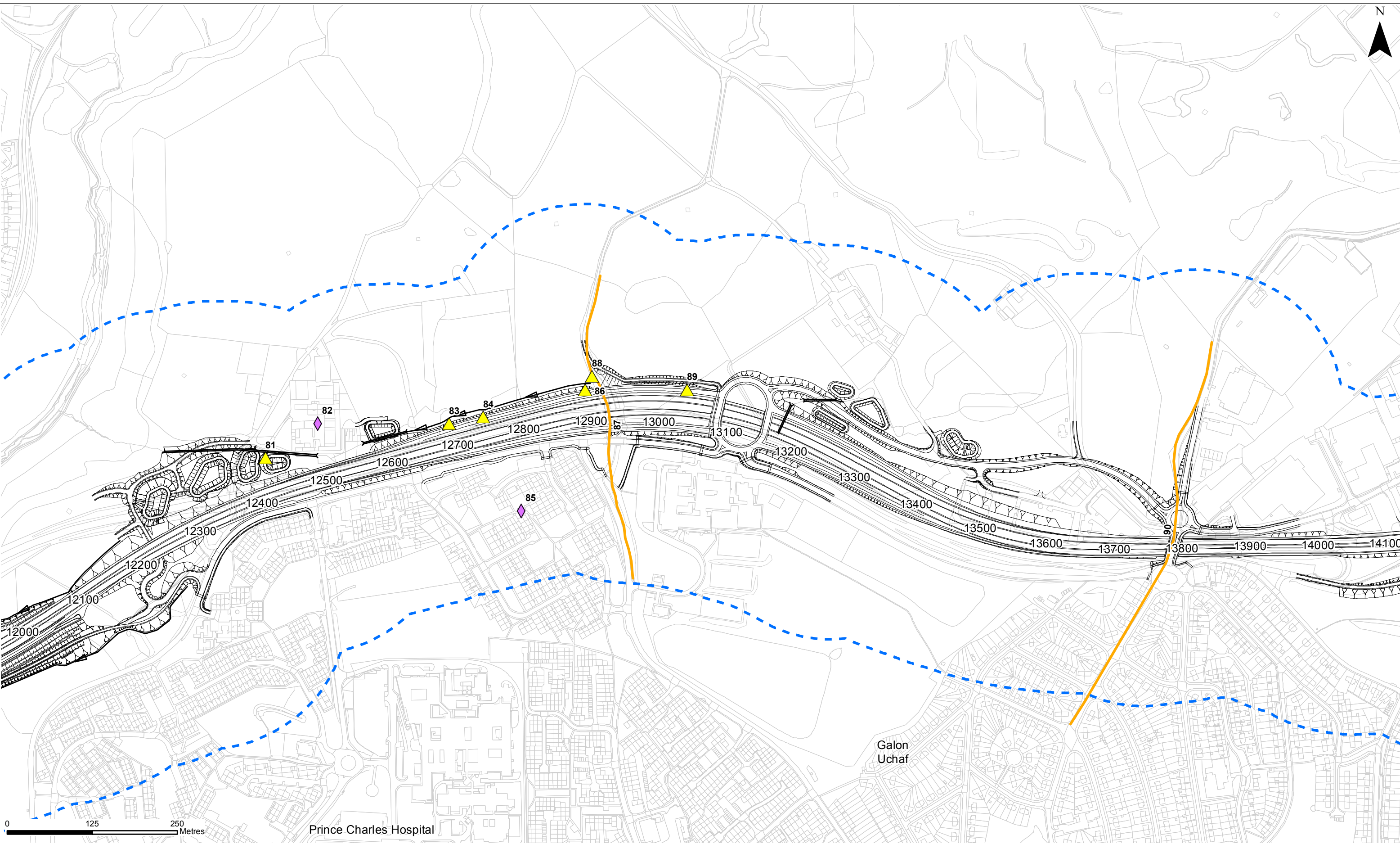
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- Archaeological Remains
- Conservation Area
- Historic Buildings
- Scheduled Monument

Conservation Character Areas

- Area 1
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- Area 3
- Area 4



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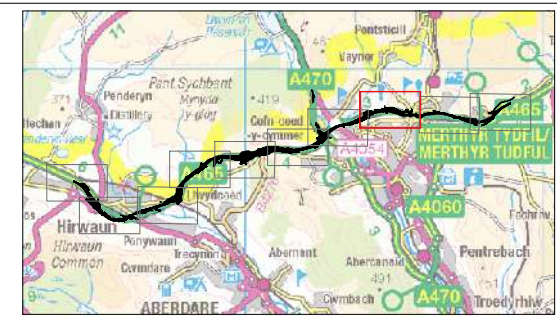
Legend

- Scheme design
- Study area
- Archaeological Remains
- Historic Buildings
- Listed Building
- Locally Listed Building

- Archaeological Remains (asset subject to trial trenching)
- Archaeological Remains
- Conservation Area
- Historic Buildings
- Scheduled Monument

Conservation Character Areas

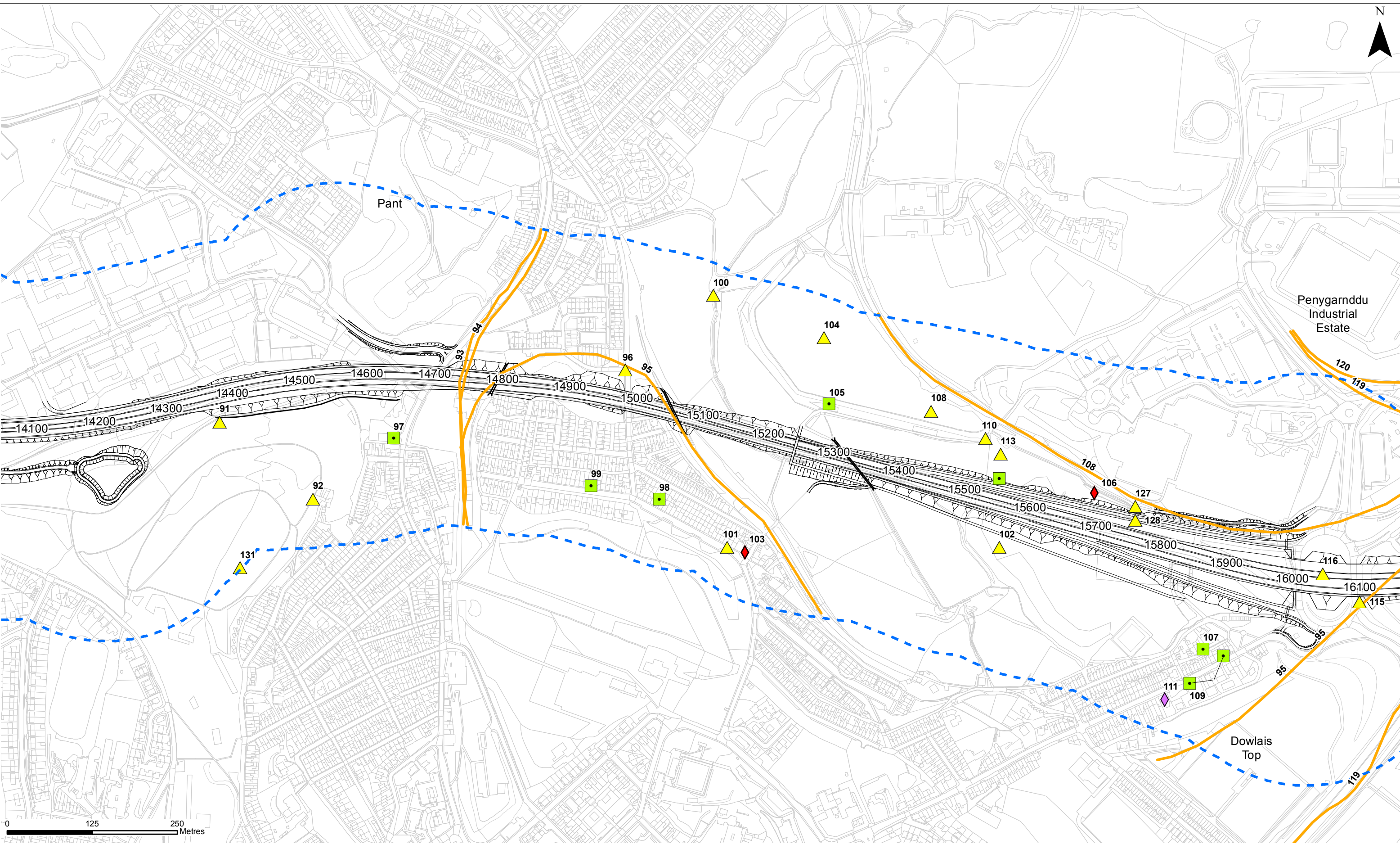
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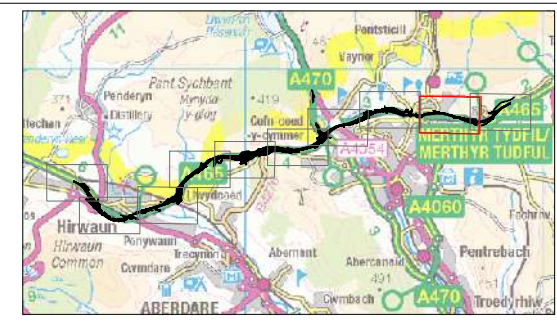
Legend


- Scheme design
- Study area
- Archaeological Remains
- Historic Buildings
- Listed Building
- Locally Listed Building

- Archaeological Remains (asset subject to trial trenching)
- Archaeological Remains
- Conservation Area
- Historic Buildings
- Scheduled Monument


Conservation Character Areas

- Area 1
- Area 2
- Area 3
- Area 4



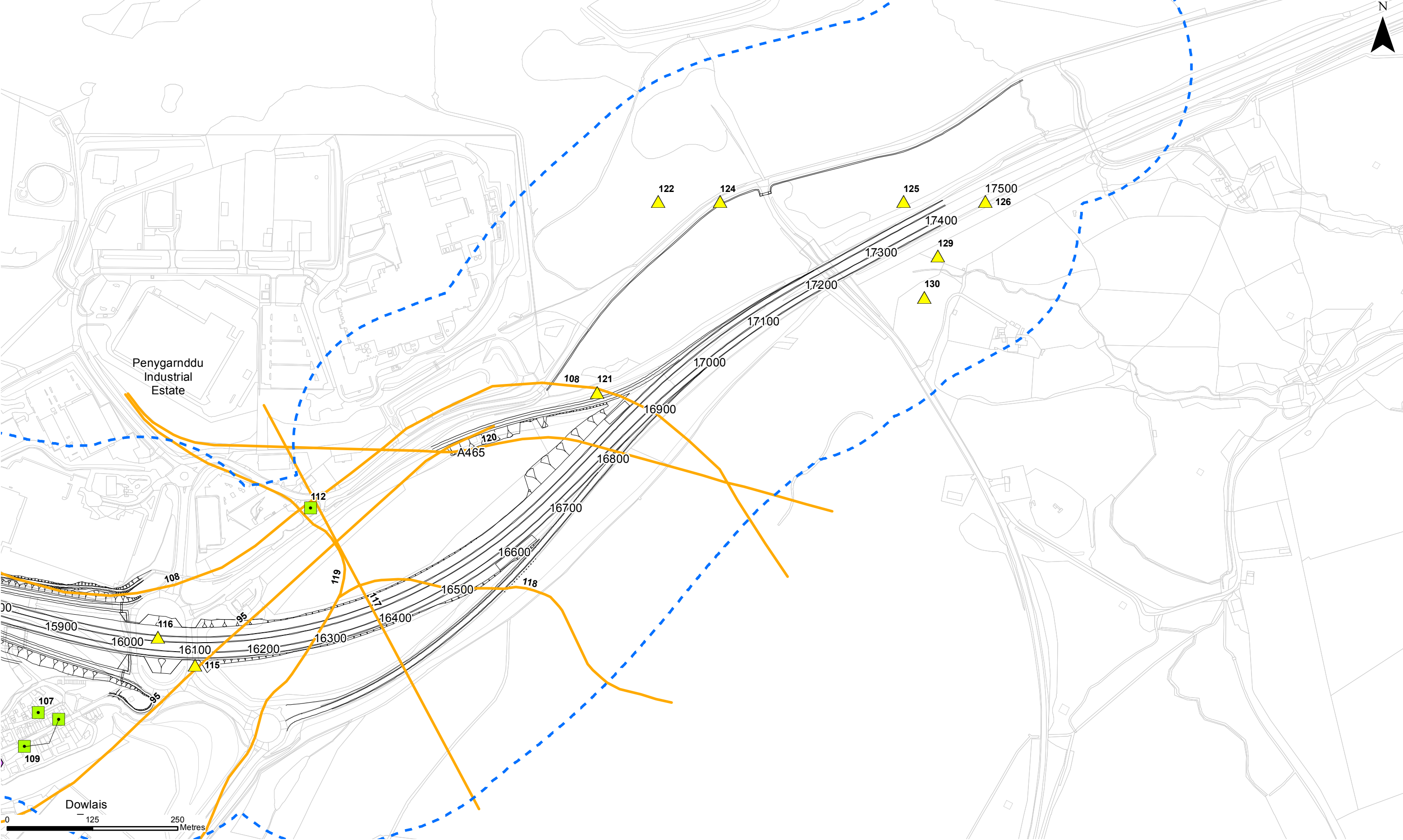


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- Historic Buildings
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- Archaeological Remains
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Conservation Character Areas

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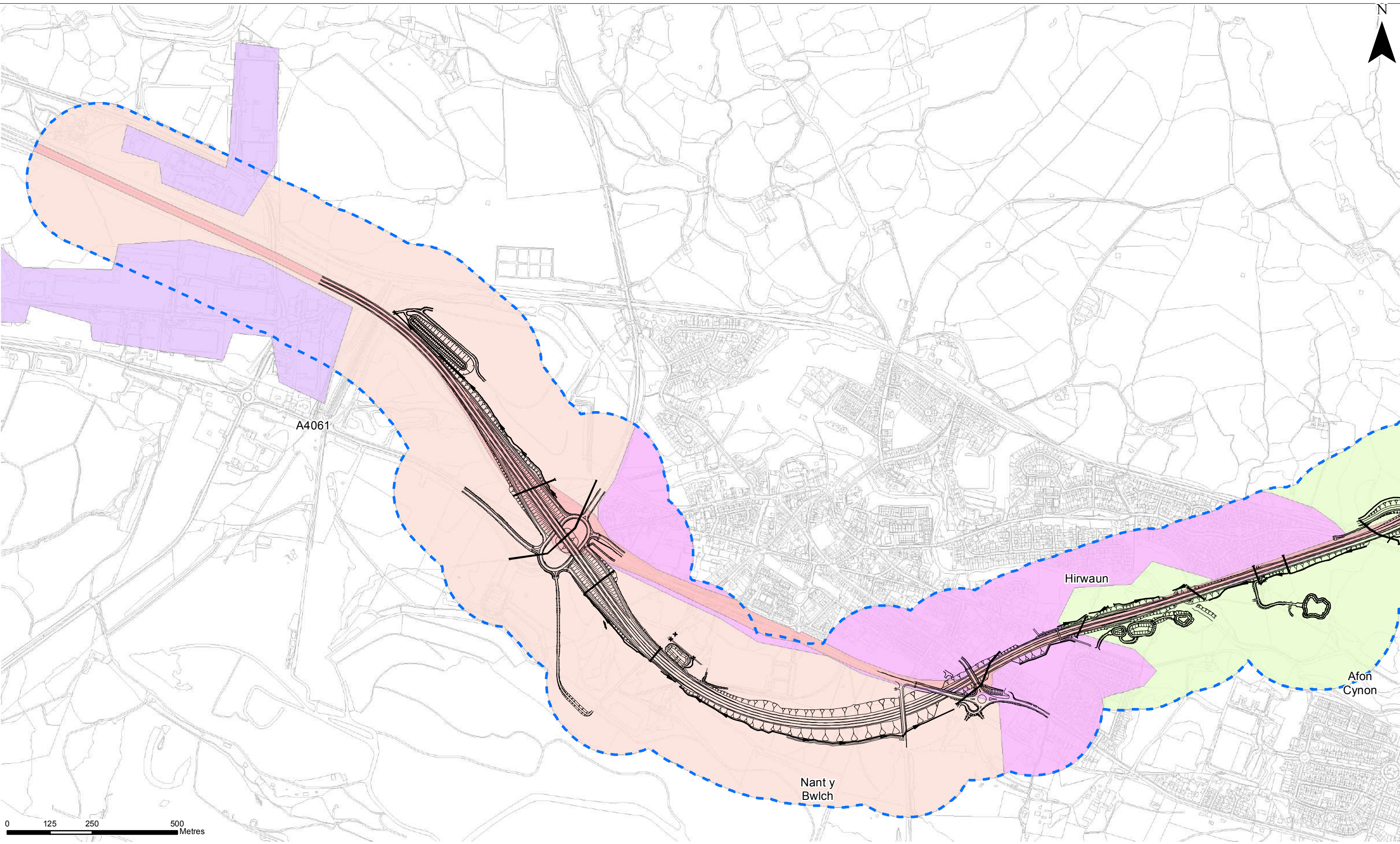


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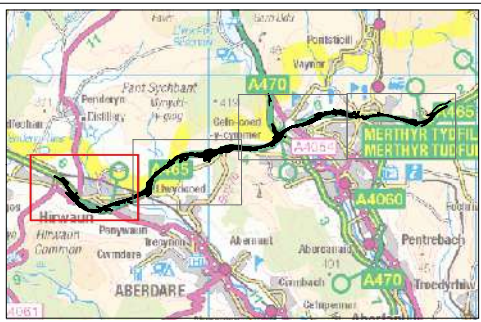
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Legend

- Scheme design
- Study area

Historic Landscape Character Areas

- HLCA1 - A465(T) Heads of the Valley Road
- HLCA2 Hirwaun Industrial Estate
- HLCA3 Post Industrial Urban Hinterland
- HLCA4 Settlement – Hirwaun
- HLCA5 Post Industrial Agricultural Landscape



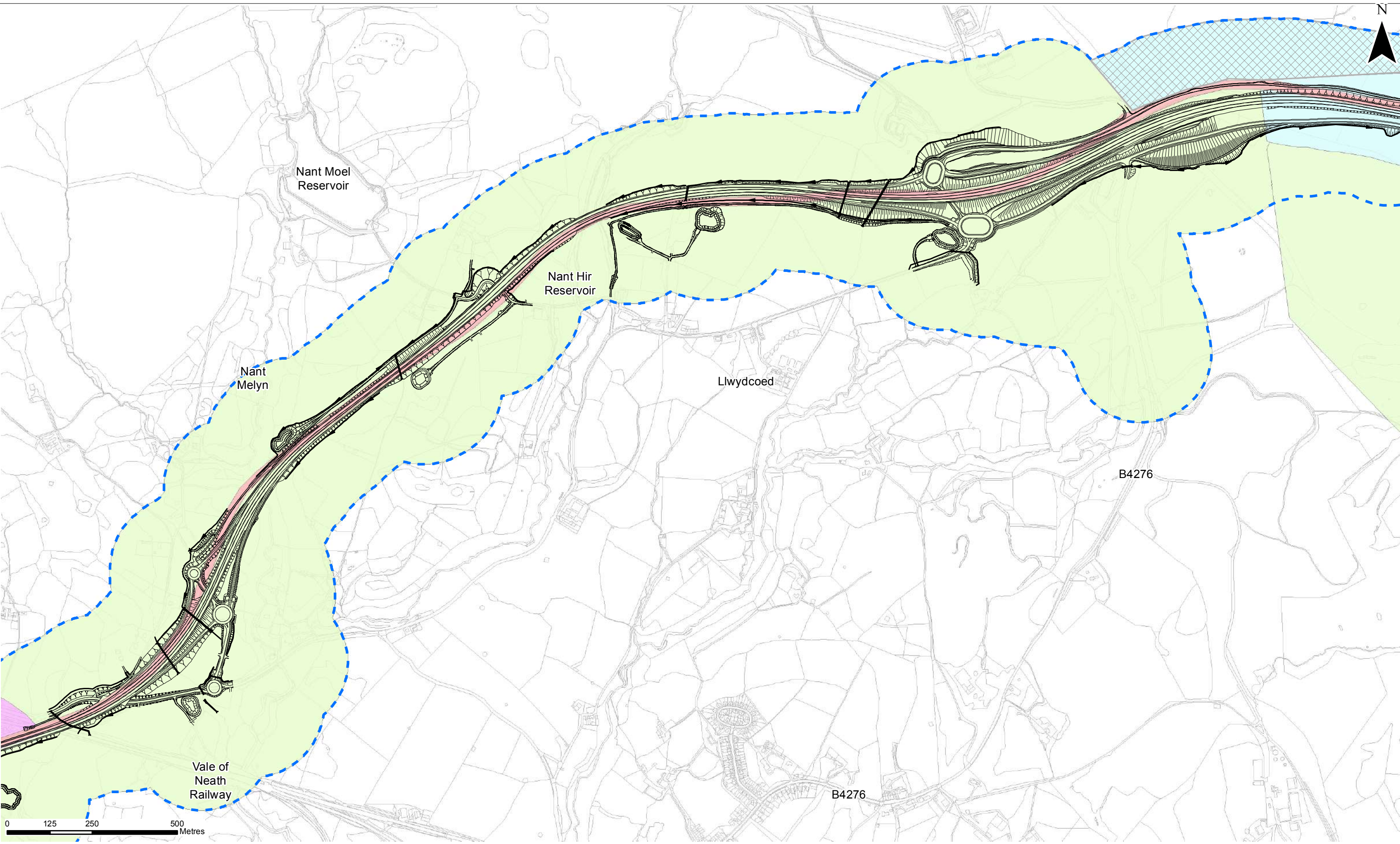


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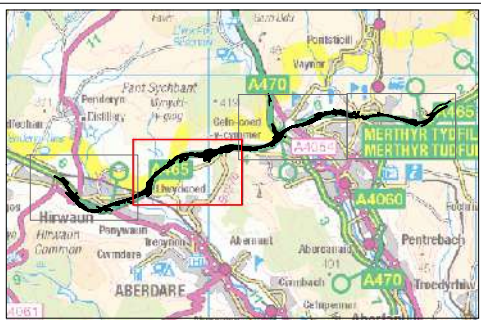
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Title	Historic Landscape Character areas	
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Drawing No.	Figure 9.2 Sheet 1 of 4	Rev 0



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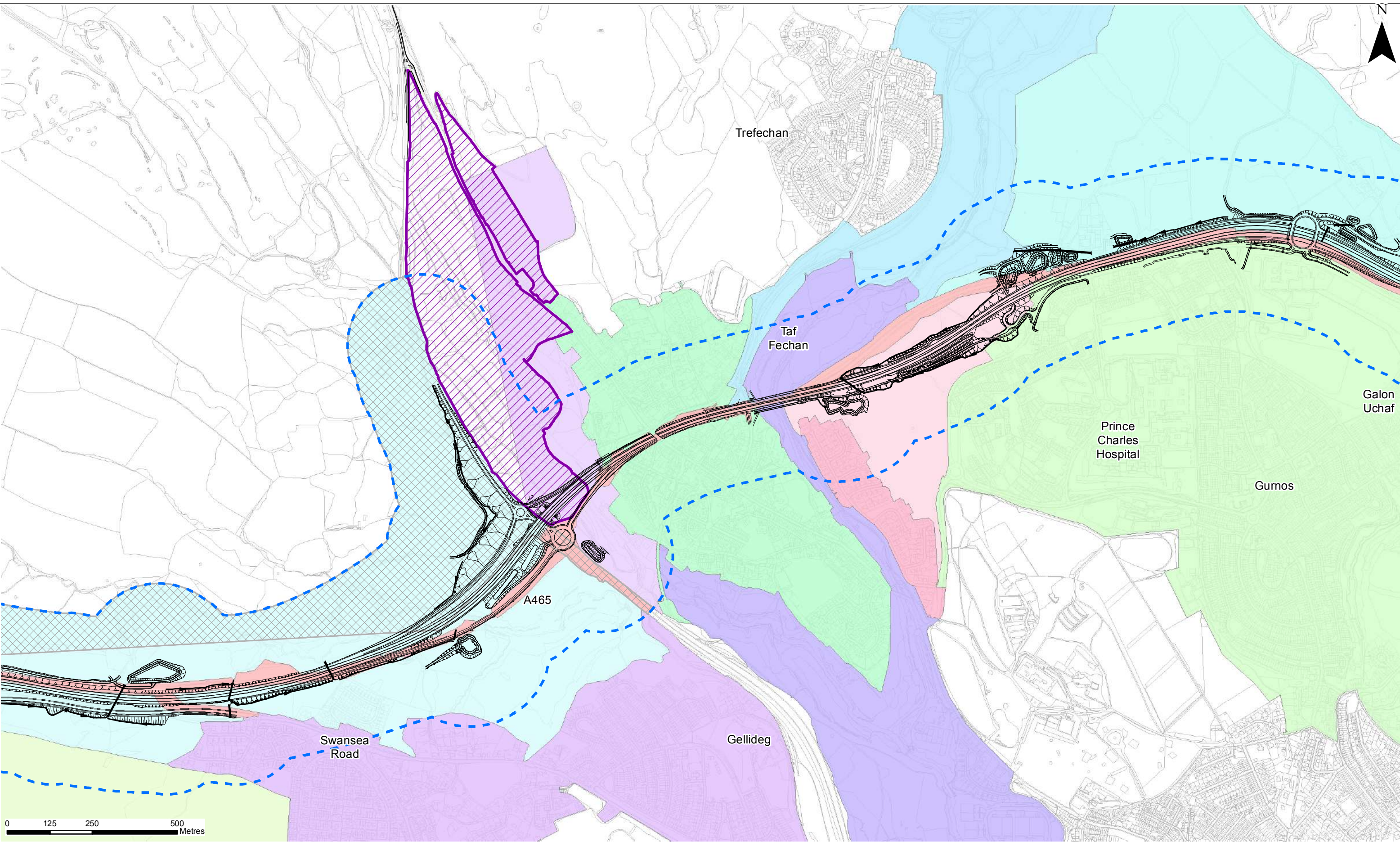
Legend
— Scheme design
--- Study area
Historic Landscape Character Areas
HLCA1 - A465(T) Heads of the Valley Road
HLCA4 Settlement – Hirwaun
HLCA5 Post Industrial Agricultural Landscape

HLCA6 - Winch Fawr, Pen-yr-Heolgerrig, Cwm Du and Upper Cwn Glo Workings
HLCA7 - Coed Meurig
Extension to the GGAT HLCA area




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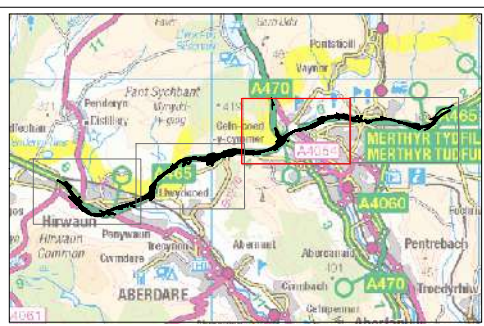
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Legend

- Scheme design
- Study area
- Historic Landscape Character Areas
 - HLCA1 - A465(T) Heads of the Valley Road
 - HLCA6 - Winch Fawr, Pen-yr-Heolgergig, Cwm Du and Upper Cwn Glo Workings
 - HLCA7 - Coed Meurig
 - HLCA8 - Clwyd-y-Fagwyr, Gellideg and Pen-Llwyn-Deri
 - HLCA9 - Cyfarthfa Iron Works
 - HLCA10 - Taff Fawr River Valley
 - HLCA11 - Cefn Coed-y-Cymmer
 - HLCA12 Grade II Registered Historic Park and Garden, Cefn Coed Cemetery and Jewish Burial Ground Essential Setting
 - HLCA13 - Taff Fechan
 - HLCA15 - Y Graig, Gurnos
 - HLCA16 - Lakeside Gardens
 - HLCA17 - Gurnos Farm and Bunker's Hill
 - HLCA18 - Gurnos and Galon Uchaf
 - Extension to the GGAT HLCA area



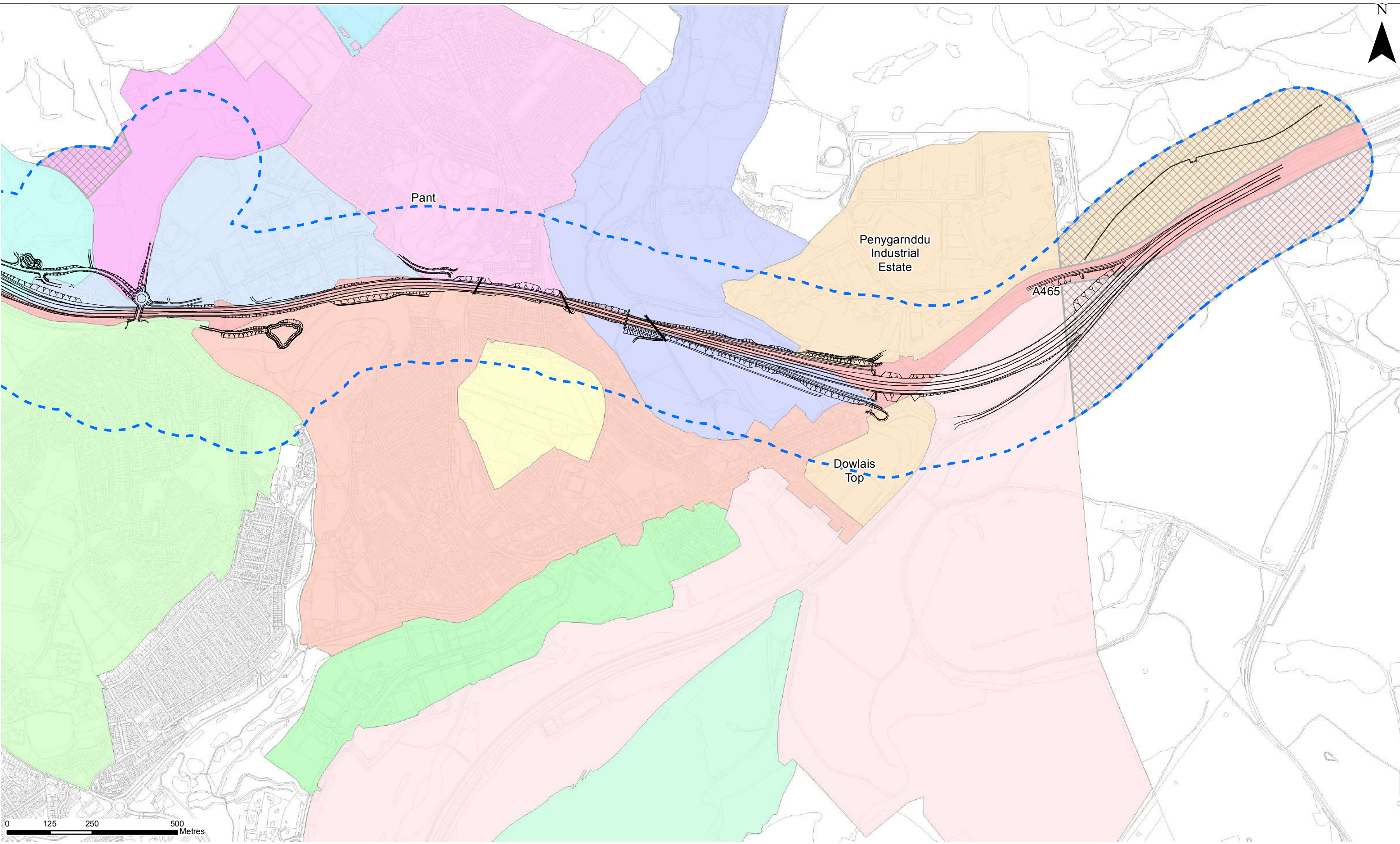


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Legend
— Scheme design
- - - Study area
Historic Landscape Character Areas
■ HLCA1 - A465(T) Heads of the Valley Road
■ HLCA13 - Taff Fechan
■ HLCA17 - Gurnos Farm and Bunker's Hill
■ HLCA18 - Gurnos and Galon Uchaf

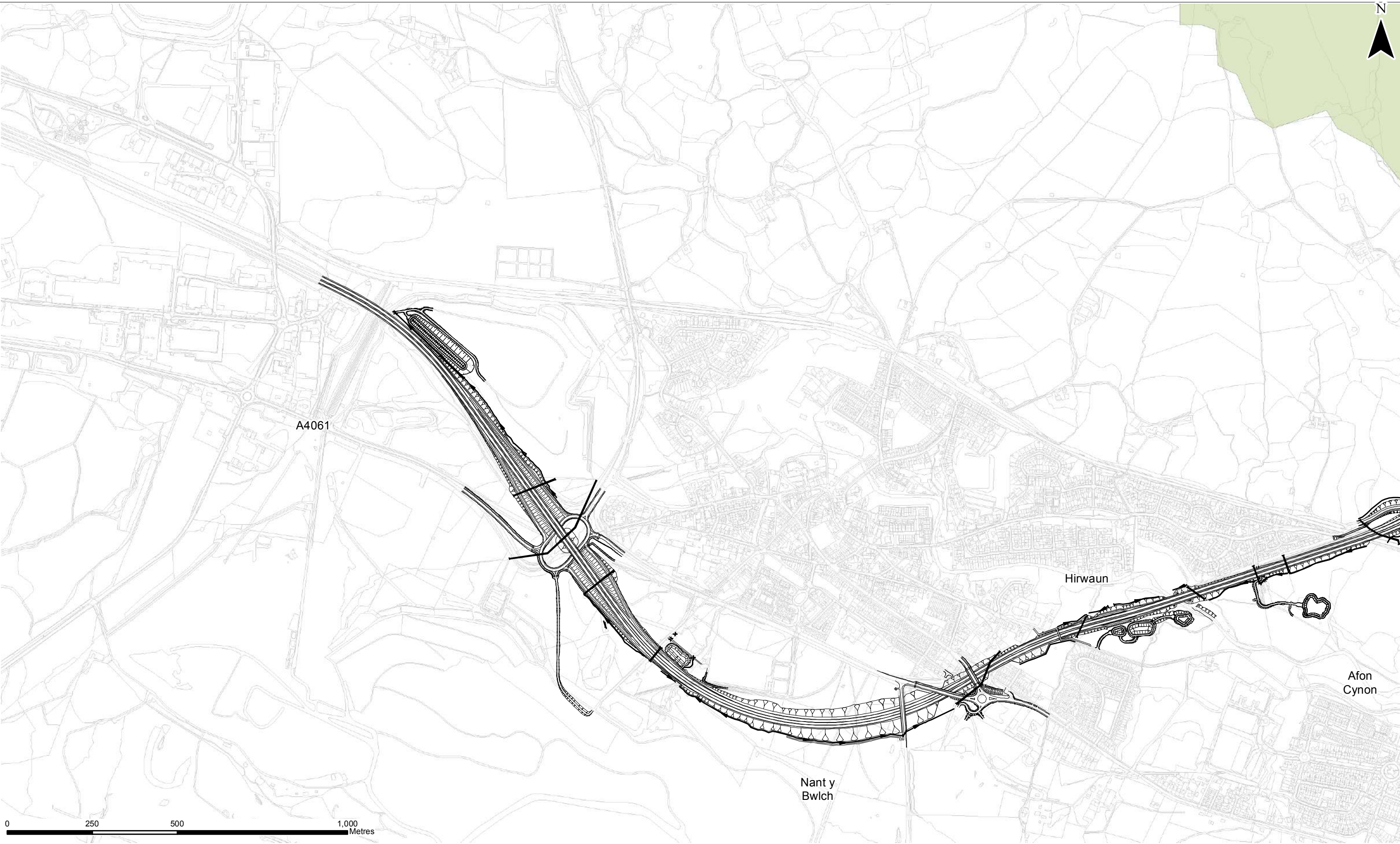
■ HLCA19 - Bon-y-maen
■ HLCA20 - Bryniau Quarries
■ HLCA21 - Dowlais
■ HLCA22 - Pantcadifor, Rhyd-y-bedd and Caeracca
■ HLCA23 - Ivor Iron Works Area
■ HLCA24 - Pengamddu
■ HLCA25 - Dowlais Top

■ HLCA26 - Dowlais Great Tip, Trecatti, Trehir and Twyn-y-Waun
■ HLCA27 - Dowlais Iron Works Area
■ HLCA28 - Ffos-y-fran
■ Extension to the GGAT HLCA area




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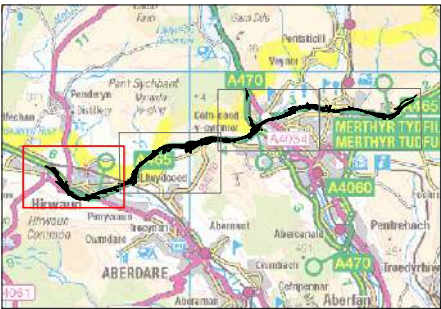
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Legend

- Scheme design
- HLCA30 - East Fforest Fawr and Mynydd-y-Glog

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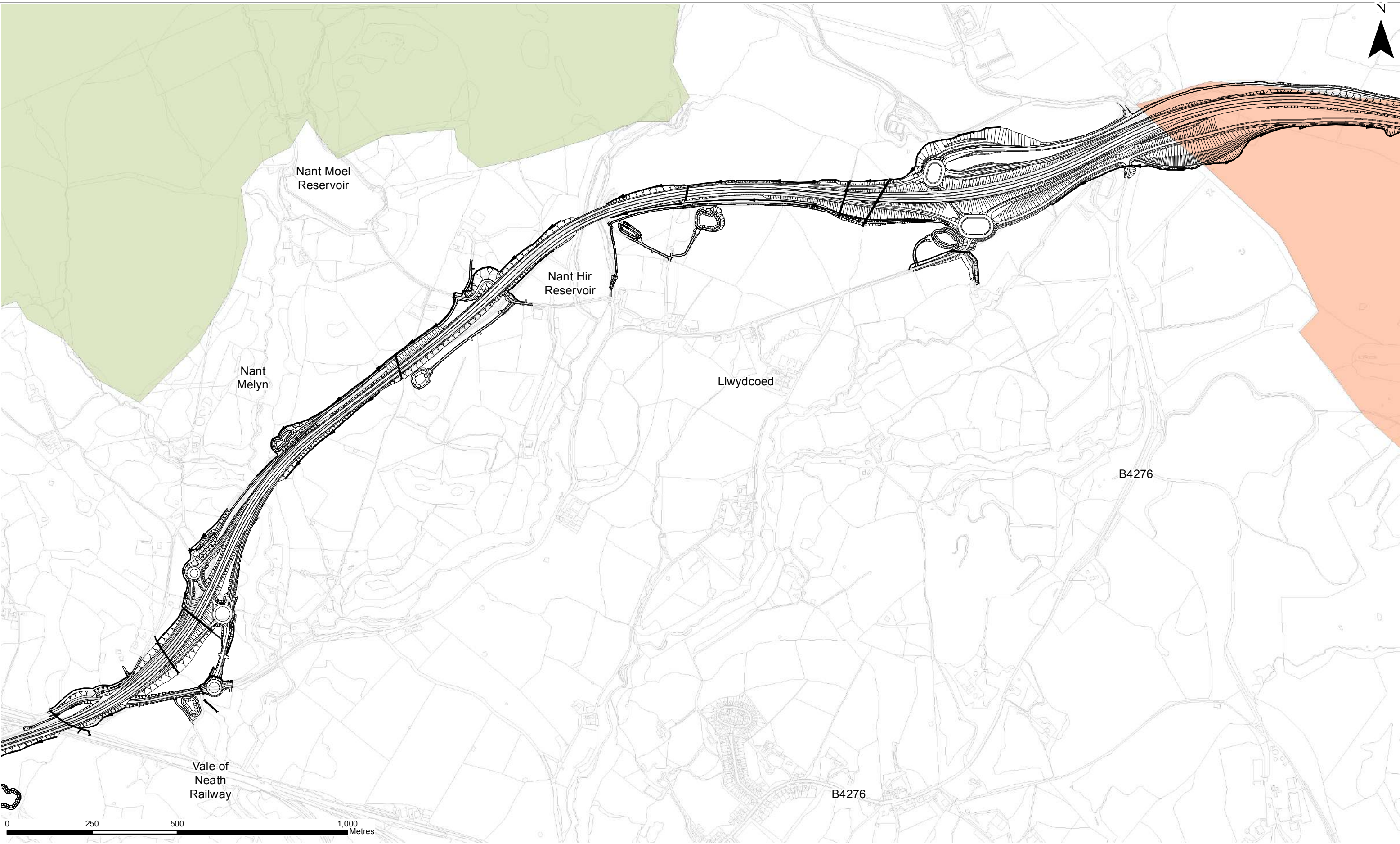


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- Legend**
- Scheme design
 - HLCA29 - Merthyr Tydfil
 - HLCA30 - East Fforest Fawr and Mynydd-y-Glog

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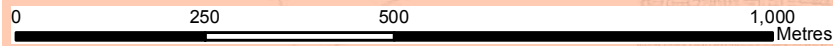
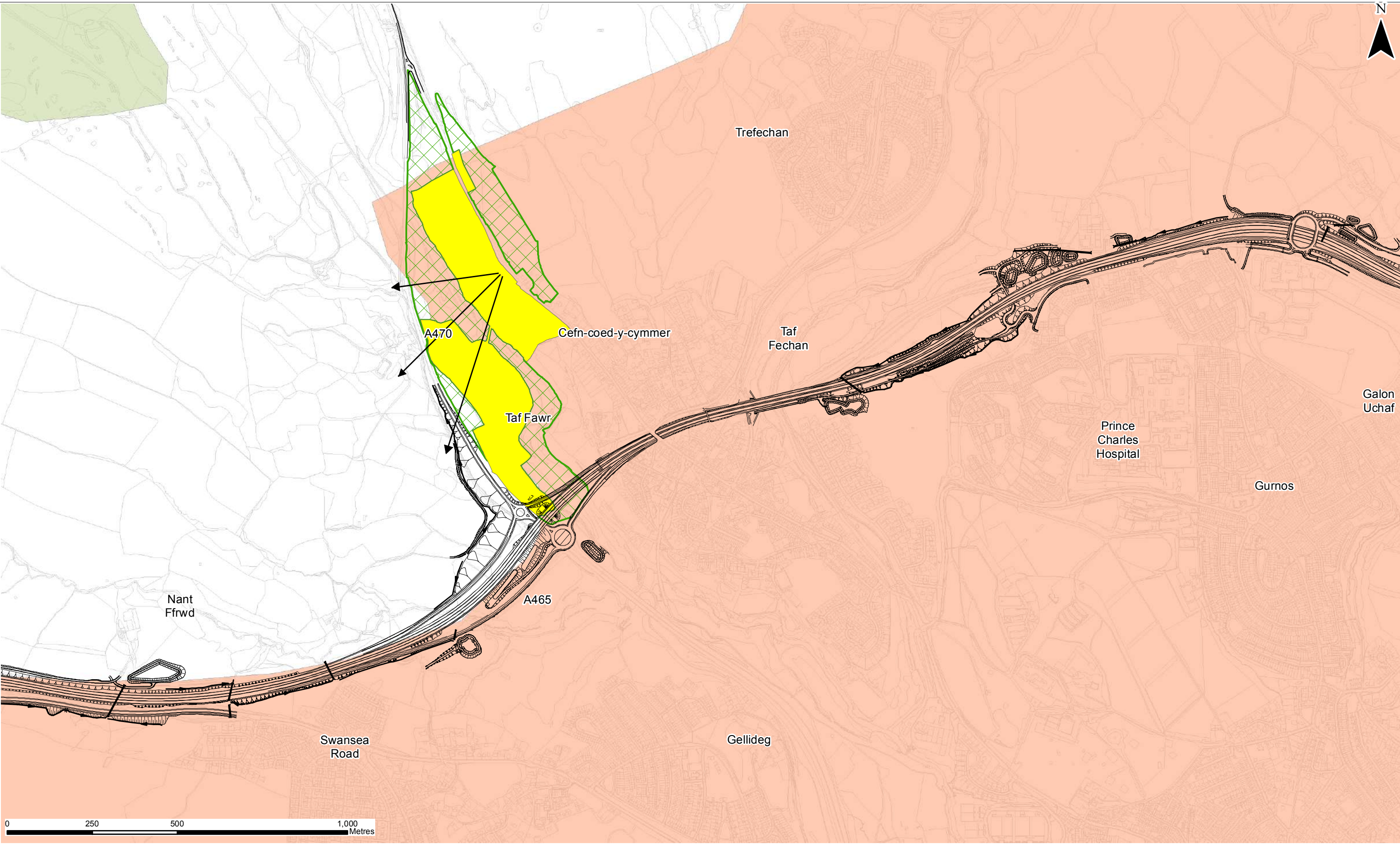


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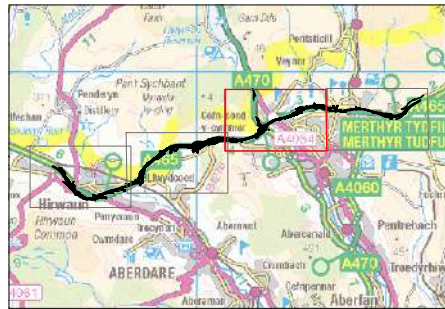


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- Legend**
- Scheme design
 - ➔ Significant View
 - Grade II Registered Historic Park and Garden, Cefn Coed Cemetery and Jewish Burial Ground
 - Essential Setting
 - HLCA29 - Merthyr Tydfil
 - HLCA30 - East Fforest Fawr and Mynydd-y-Glog

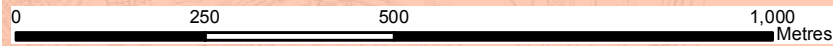
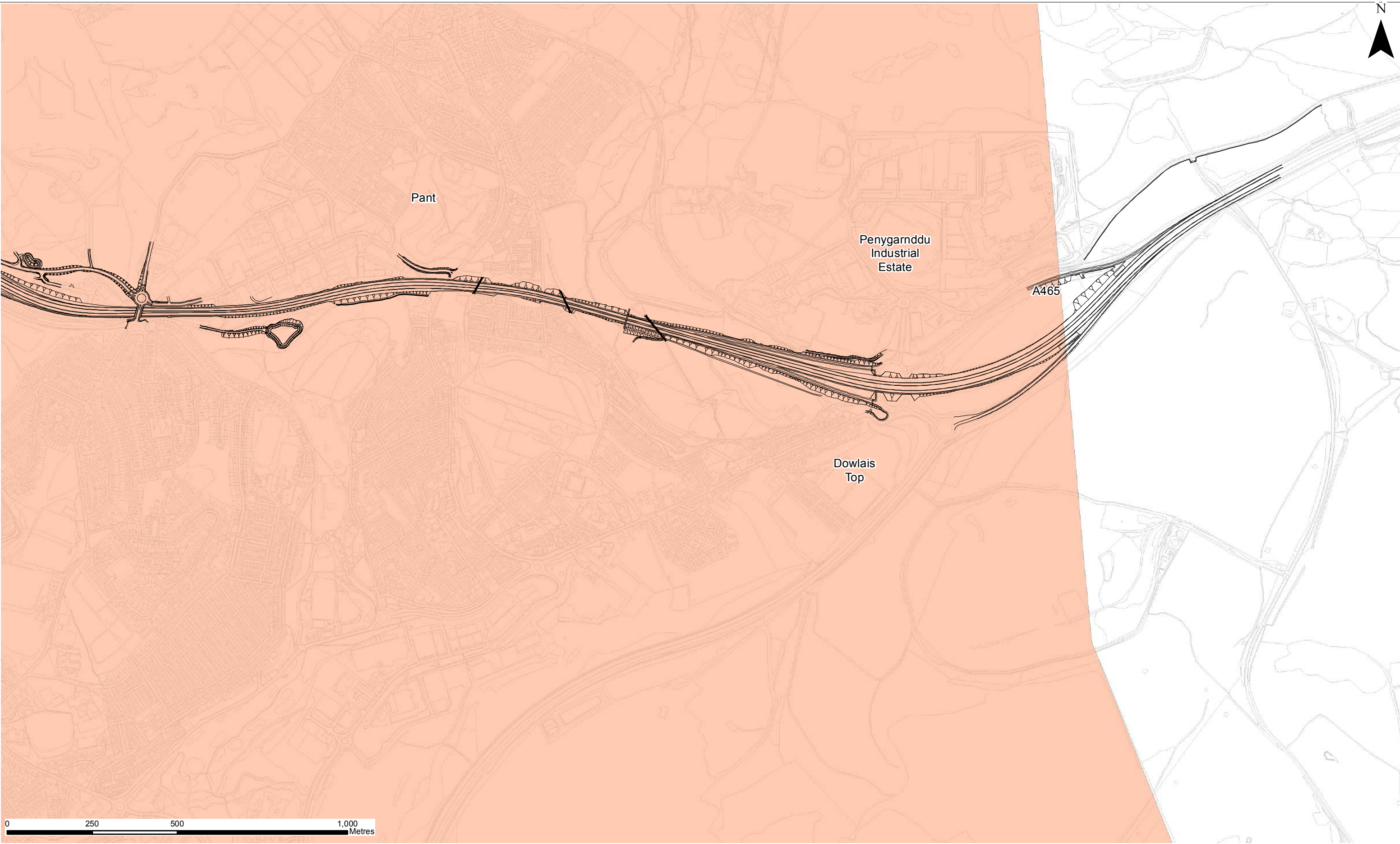
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Legend

Scheme design

HLCA29 - Merthyr Tydfil




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Drawing No.	Figure 9.3 Sheet 4 of 4	Rev 0

Environmental Statement Supplement Volume 3: Revised Figures

All Figures included in this Volume are a direct replacement of the corresponding Figures issued in the July 2017 published Environmental Statement Volume 3.

Revised Figures and Visualisations accompanying Chapter 10: Landscape and Visual Impact are included as follows:

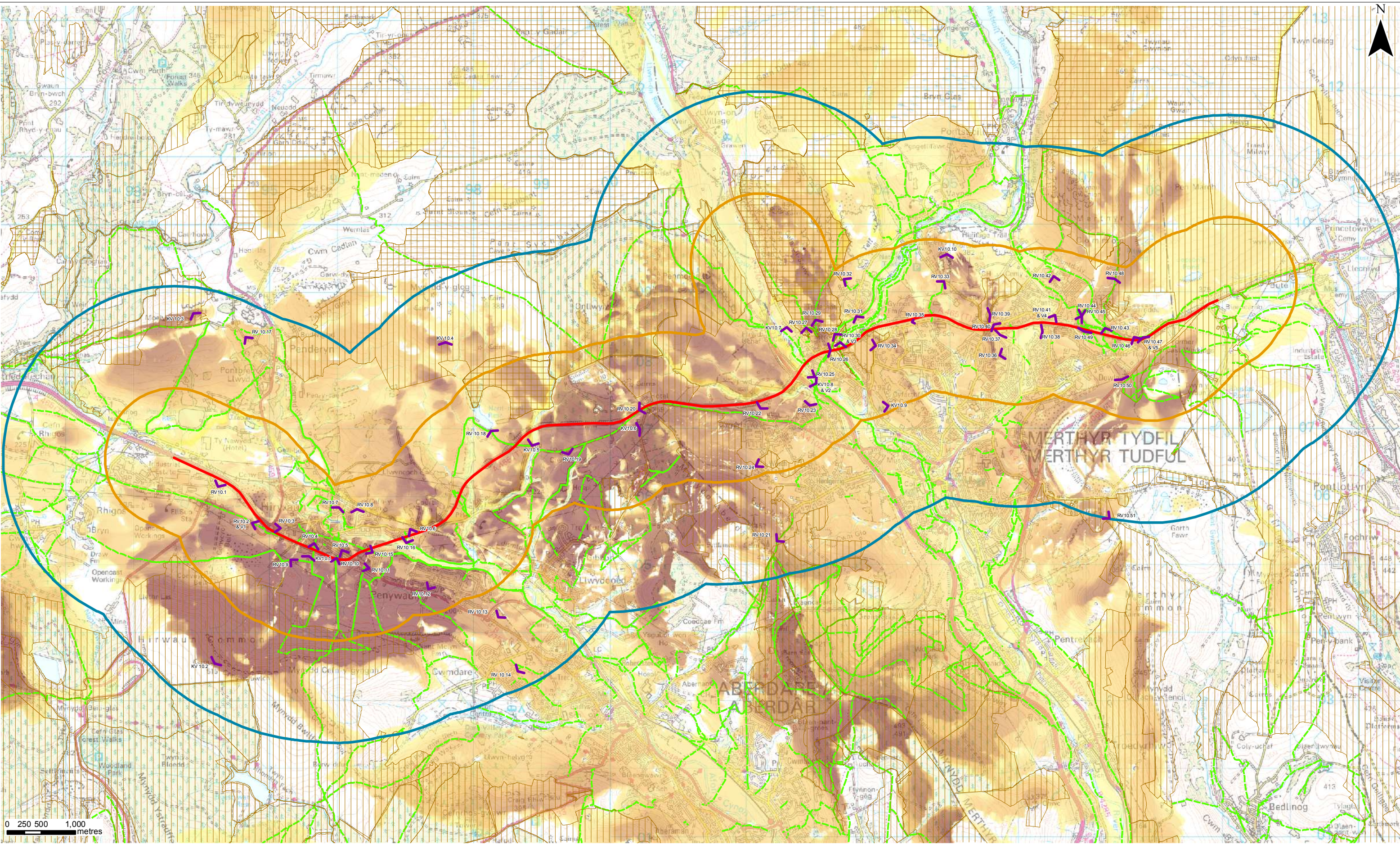
Figure 10.5	Landscape character Areas: National, National Park and County Borough
Figure 10.6.2	Zone of Theoretical Visibility - Existing Road
Figure 10.7	Night Time Light Sources and Exterior Lighting Environmental Zones
Figure 10.8	Visual Effects

Visualisations

Visualisation 1	RV10.2 - View south-east from National Cycle Route 46 (receptor S6-A6), looking towards Hirwaun junction (Year 1 and Year 15)
Visualisation 2	KV10.8 - View north-west from the Taff Trail on the Cefn Coed viaduct (receptor S5-A1), to the A470 viaduct, A470 junction and the Taf Fawr viaduct (Year 1 and Year 15)
Visualisation 3	RV10.30 - View from Vaynor Public Footpath 34 (receptor S5-A6), looking south along the leat and disused Gurnos Quarry Tramroad to the Taf Fechan viaduct (Year 1)
Visualisation 4	RV10.41 - View south from Pant Hollow open space allocation (receptor S5-A12) (Year 1 and Year 15)
Visualisation 5	RV10.47 - View south from National Cycle Route 46 (receptor S5-A15), to Dowlais junction (Year 1 and Year 15)

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Legend

- Existing road
- 2.5km overarching study
- 1km detailed study area
- Public rights of way including footpaths, bridleways and byways and national cycle routes
- Registered common land
- Open access land

Photograph viewpoints (KV – key view, RV – representative view and V - visualisation, as illustrated on photograph sheets – viewpoints within detailed study area covered in greater detail on Figure 10.8)

Bare earth scenario zone of theoretical visibility

- Visibility to a high number of target points within the existing scheme
- Visibility to a low number of target points within the existing scheme

Zone of theoretical visibility (ZTV) is generated using computer program ArcGIS 10.3.1 and is based on a combined 'bare earth' ground model comprising OS DTM data, Lidar topo survey data and 3D models for the scheme. Elevations used for target points to represent heavy goods vehicles (HGVs) and lighting columns on the existing road and within the proposed scheme are indicative only. Target points 4.5 m above the level of the existing carriageway have been used to represent the height of HGVS using the roads. In addition, target points 10 – 12 m above level of the existing carriageway have been used to represent the height of lighting columns where applicable. The limit of the ZTV shown is not always precise and is an indication only of the area within which the most significant visual effects may be expected. Refer to Appendix 10.B for full ZTV methodology.

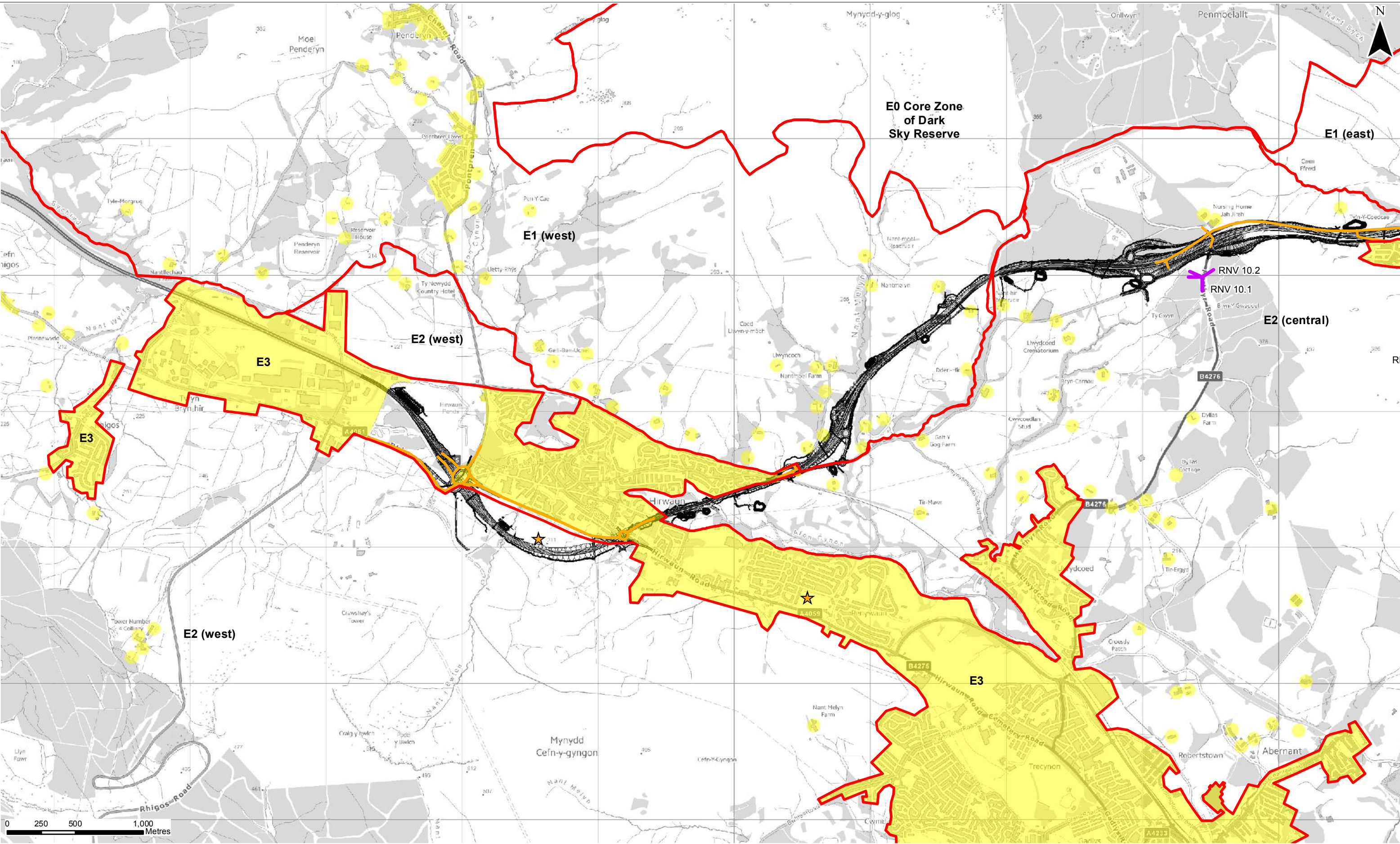
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Legend

- Lighting environmental zones
- Built up areas of settlements and industrial estates
- Single dwelling/small collection of buildings
- Prominent light source (e.g. floodlighting)

- Major busy roads with overhead lighting and other roads with overhead lighting that are not within built up areas
- Photograph viewpoints (RNV – representative night-time view, as illustrated on photograph sheets)

Exterior Lighting Environmental Zones		
Zone	Surrounding	Lighting environment
E0	Protected	Dark
E1	Natural	Intrinsically dark
E2	Rural	Low district brightness
E3	Suburban	Medium district brightness
E4	Urban	High district brightness

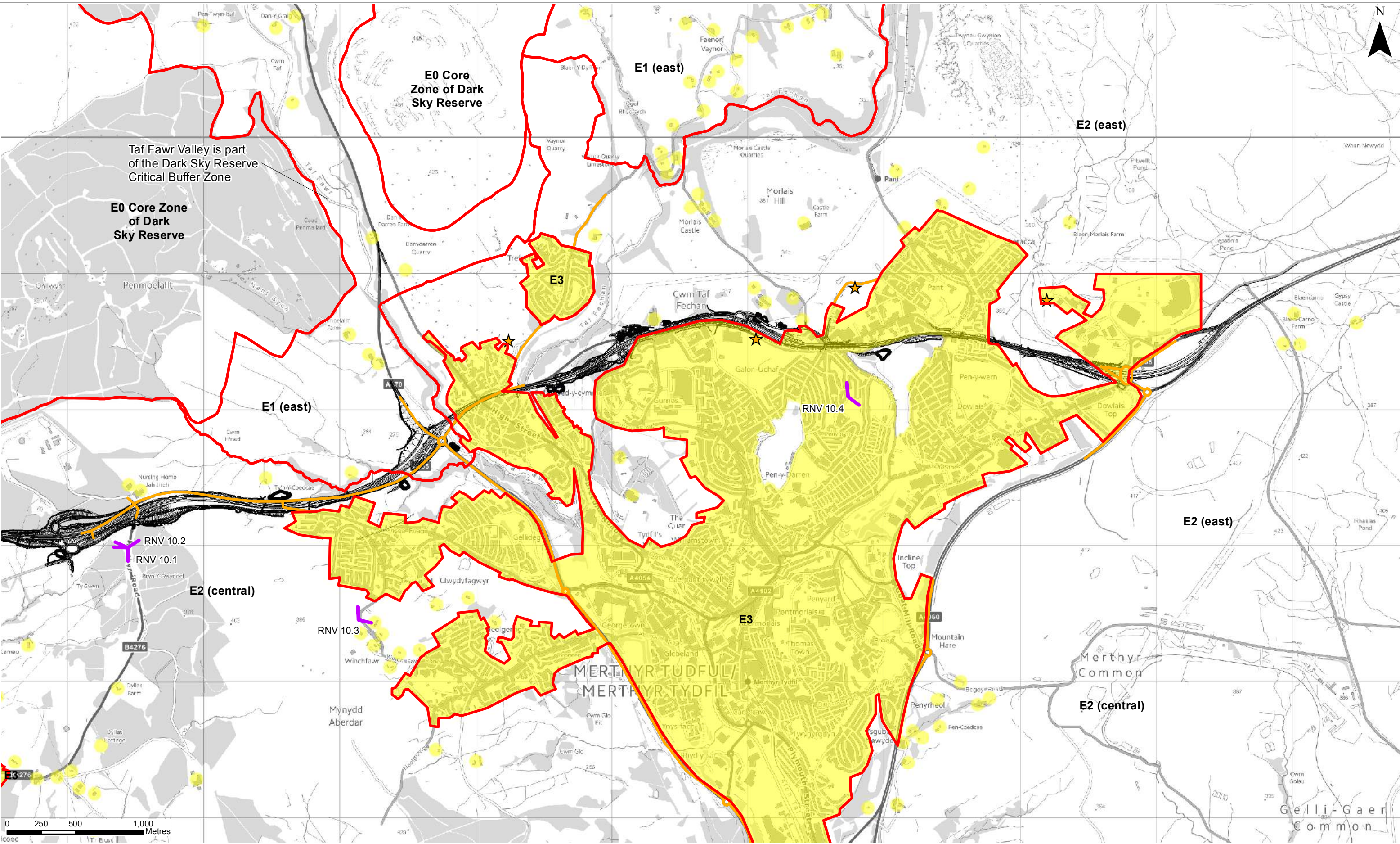


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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Night time light sources and exterior lighting environmental zones	
Scale	1:25,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.7 Page 1 of 2	Rev 0



0	MAR18	FINAL	FL	RL	RL	WB	
Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd	
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Legend

- Lighting environmental zones
- Built up areas of settlements and industrial estates
- Single dwelling/small collection of buildings
- Prominent light source (e.g. floodlighting)

- Major busy roads with overhead lighting and other roads with overhead lighting that are not within built up areas
- Photograph viewpoints (RNV – representative night-time view, as illustrated on photograph sheets)

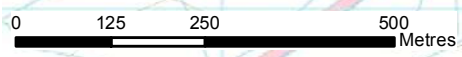
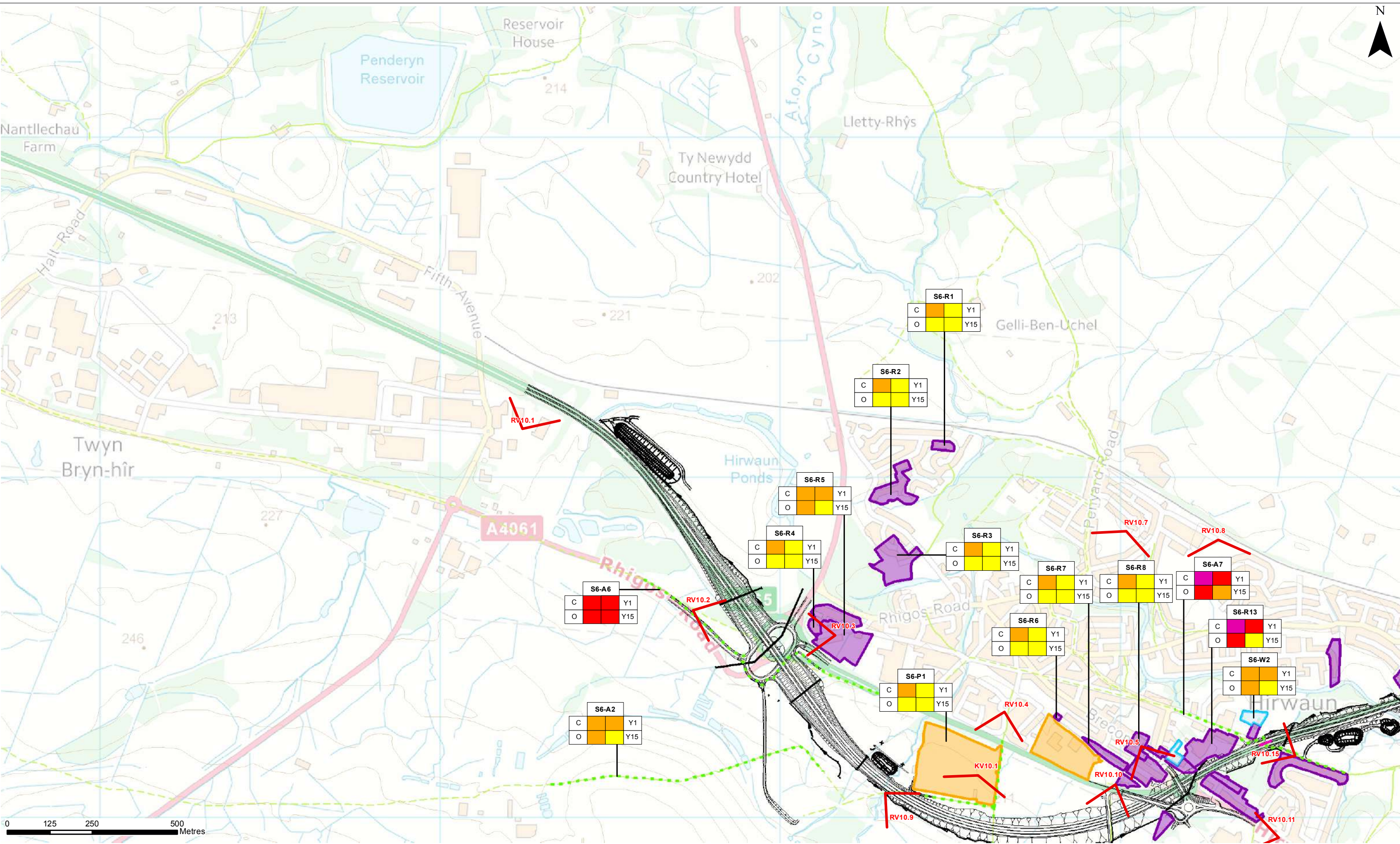
Exterior Lighting Environmental Zones

Zone	Surrounding	Lighting environment
E0	Protected	Dark
E1	Natural	Intrinsically dark
E2	Rural	Low district brightness
E3	Suburban	Medium district brightness
E4	Urban	High district brightness

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Status	FINAL	
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Title	Night time light sources and exterior lighting environmental zones	
Scale	1:25,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.7 Page 2 of 2	Rev 0



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Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd	
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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Users of public rights of way
- Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

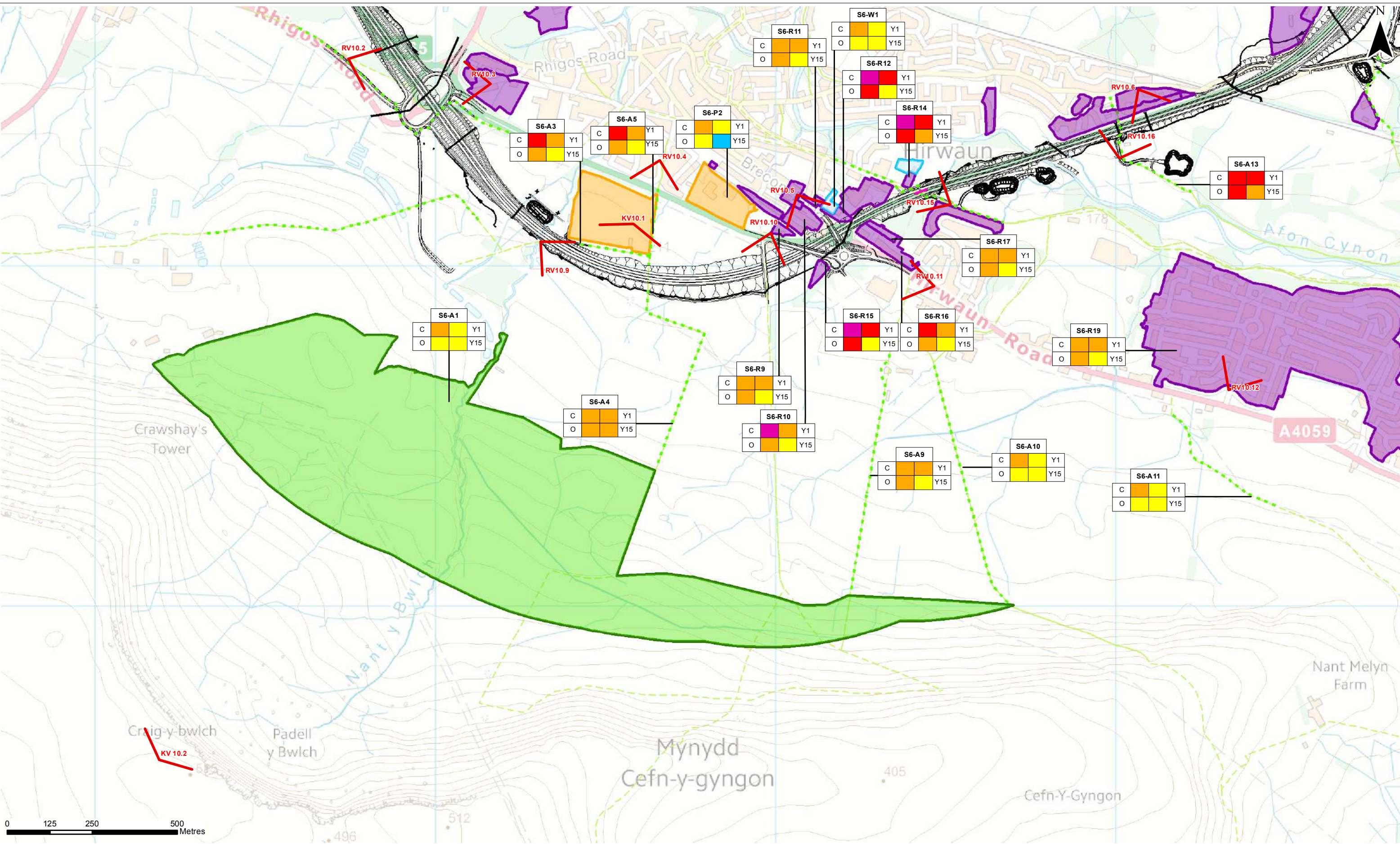
Receptor number

Visual effect during construction	C	Y1	Y15	Visual effect during winter year 1 with planting mitigation
Visual effect during operation without planting mitigation	O	Y1	Y15	Visual effect during summer year 15 with planting mitigation

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Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Visual effects	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.8 Sheet 1 of 10	Rev 0



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Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd	
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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Users of public rights of way
- Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

Receptor number

Visual effect during construction

Visual effect during operation without planting mitigation

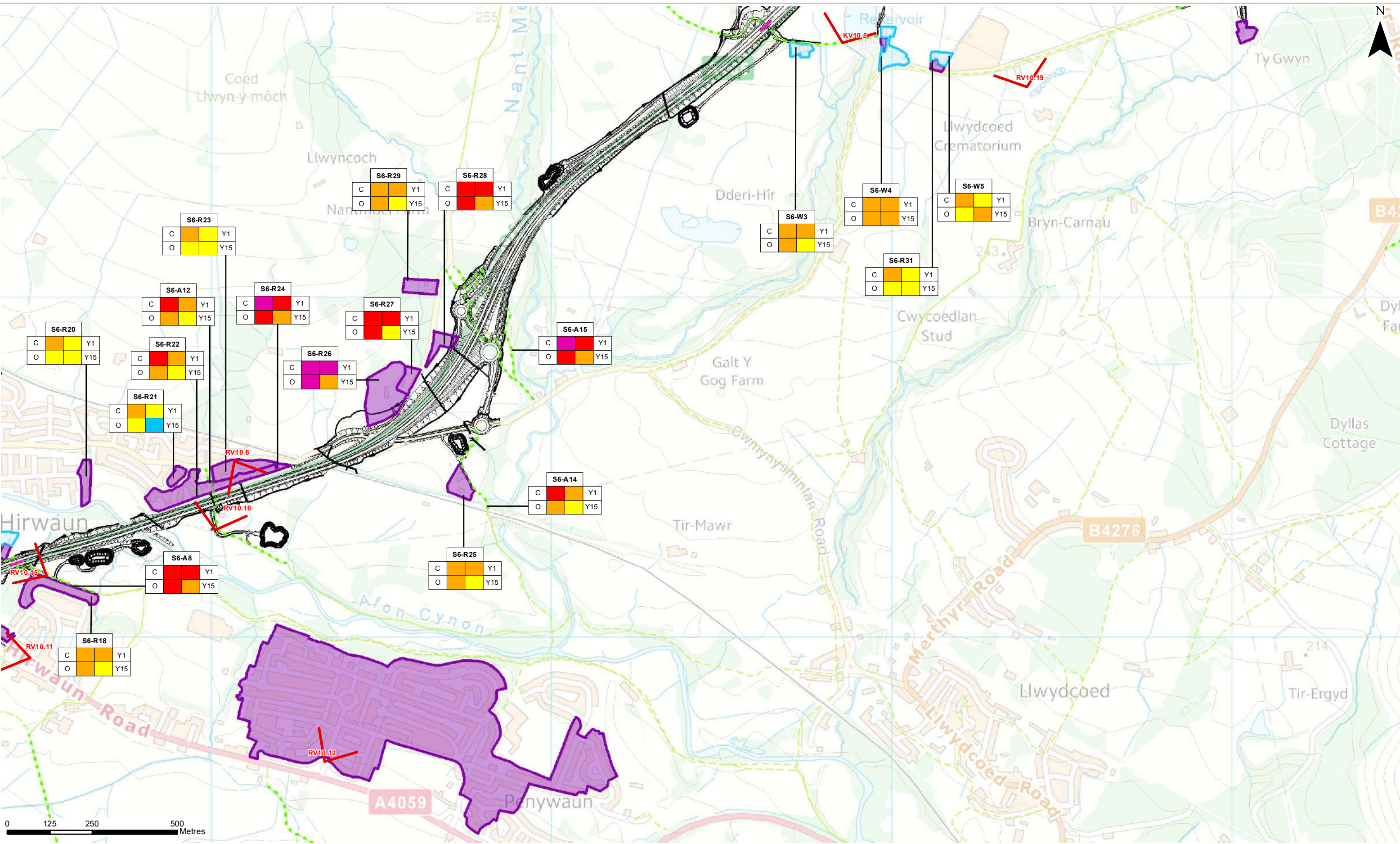
Visual effect during winter year 1 with planting mitigation

Visual effect during summer year 15 with planting mitigation

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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Visual effects	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.8 Sheet 2 of 10	Rev 0



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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Visual receptor
 - Users of public rights of way
 - Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

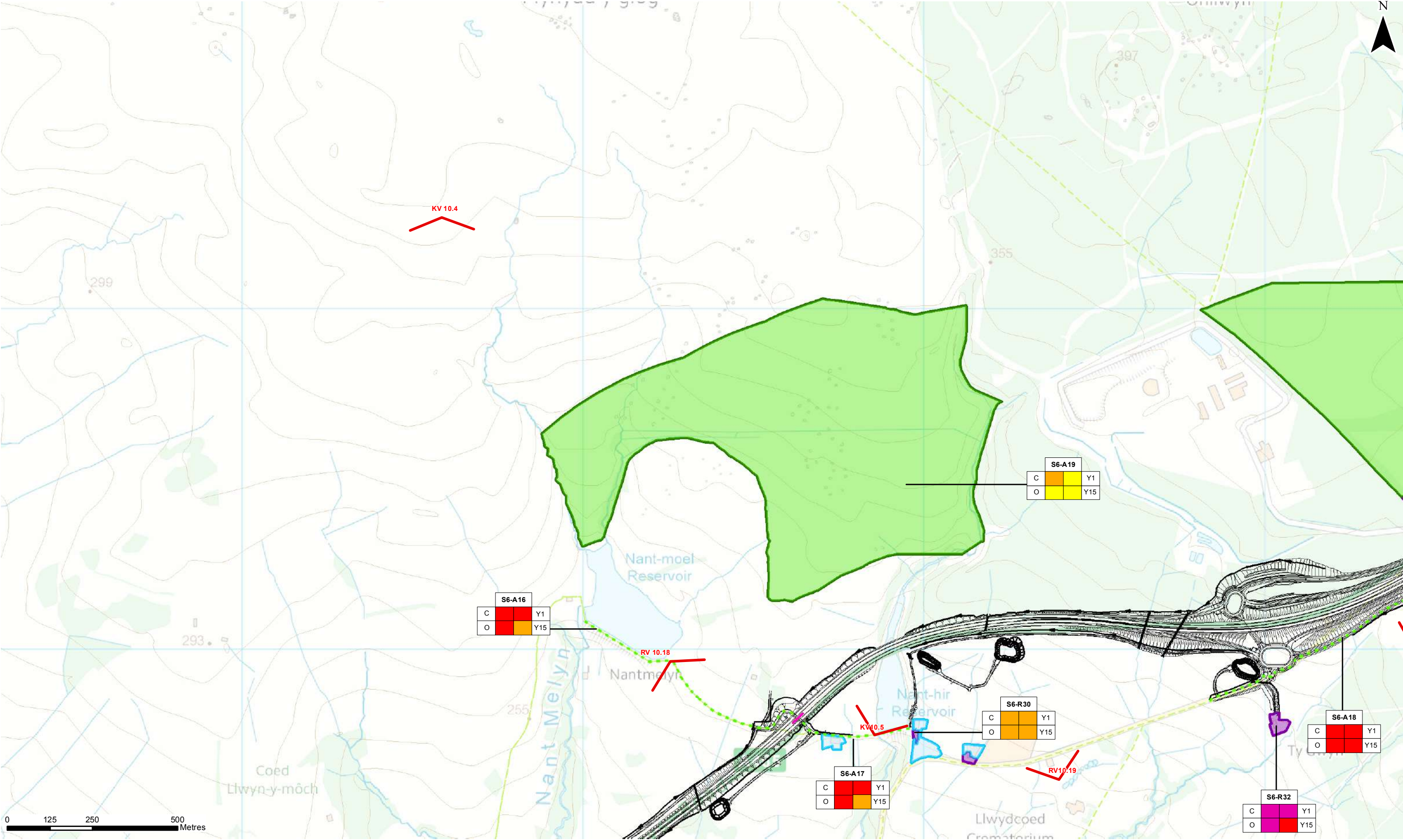
Receptor number

Visual effect during construction	C	S6-R6	Y1	Visual effect during winter year 1 with planting mitigation
Visual effect during operation without planting mitigation	O		Y15	Visual effect during summer year 15 with planting mitigation

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Title	Visual effects	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.8 Sheet 3 of 10	Rev 0



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Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd	
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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Users of public rights of way
- Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

Receptor number

Visual effect during construction	C	Y1
Visual effect during operation without planting mitigation	O	Y15

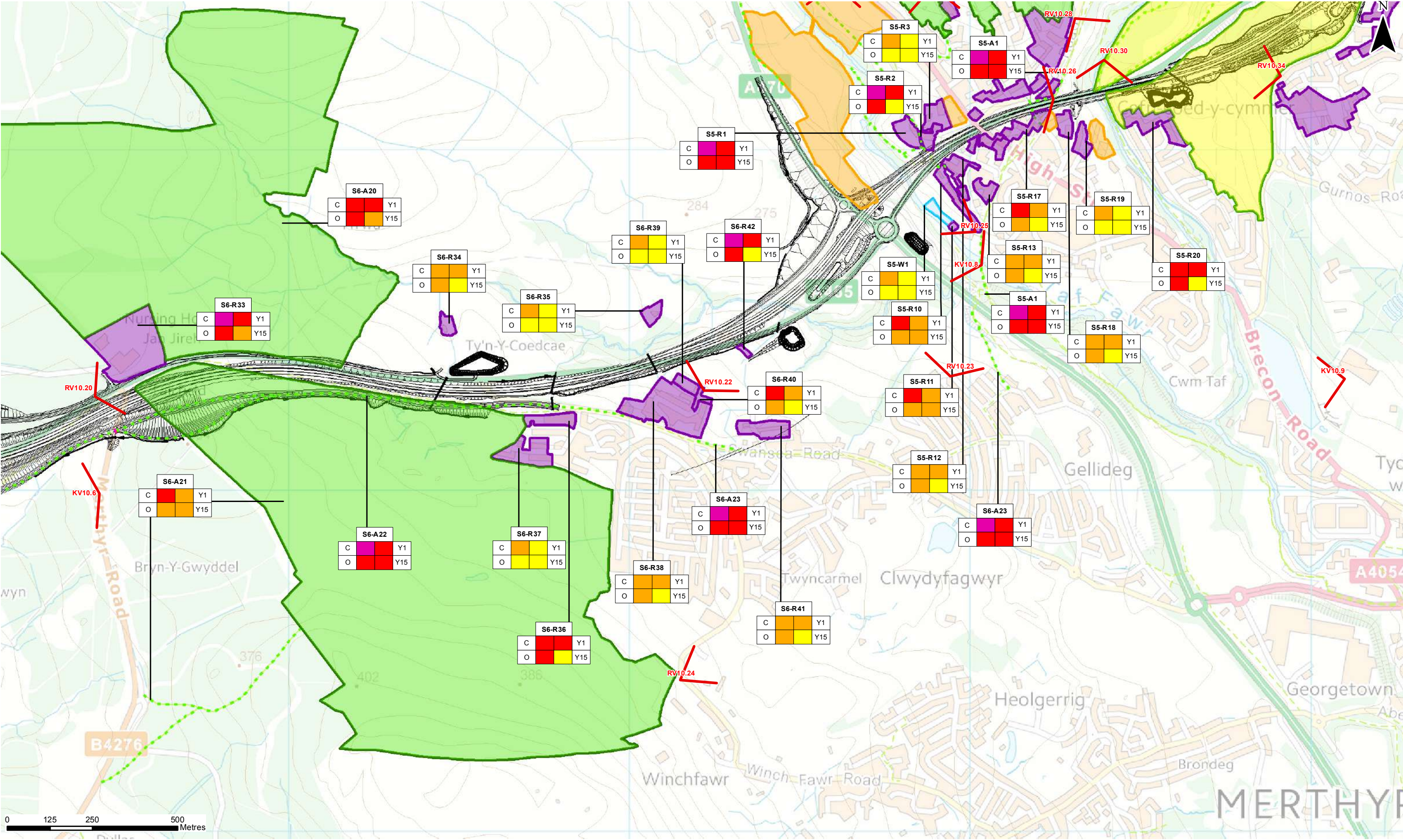
Visual effect during winter year 1 with planting mitigation

Visual effect during summer year 15 with planting mitigation

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Welsh Government

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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Visual effects	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.8 Sheet 4 of 10	Rev 0



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Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd	
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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Users of public rights of way
- Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

Receptor number

Visual effect during construction	C	Y1
Visual effect during operation without planting mitigation	O	Y15

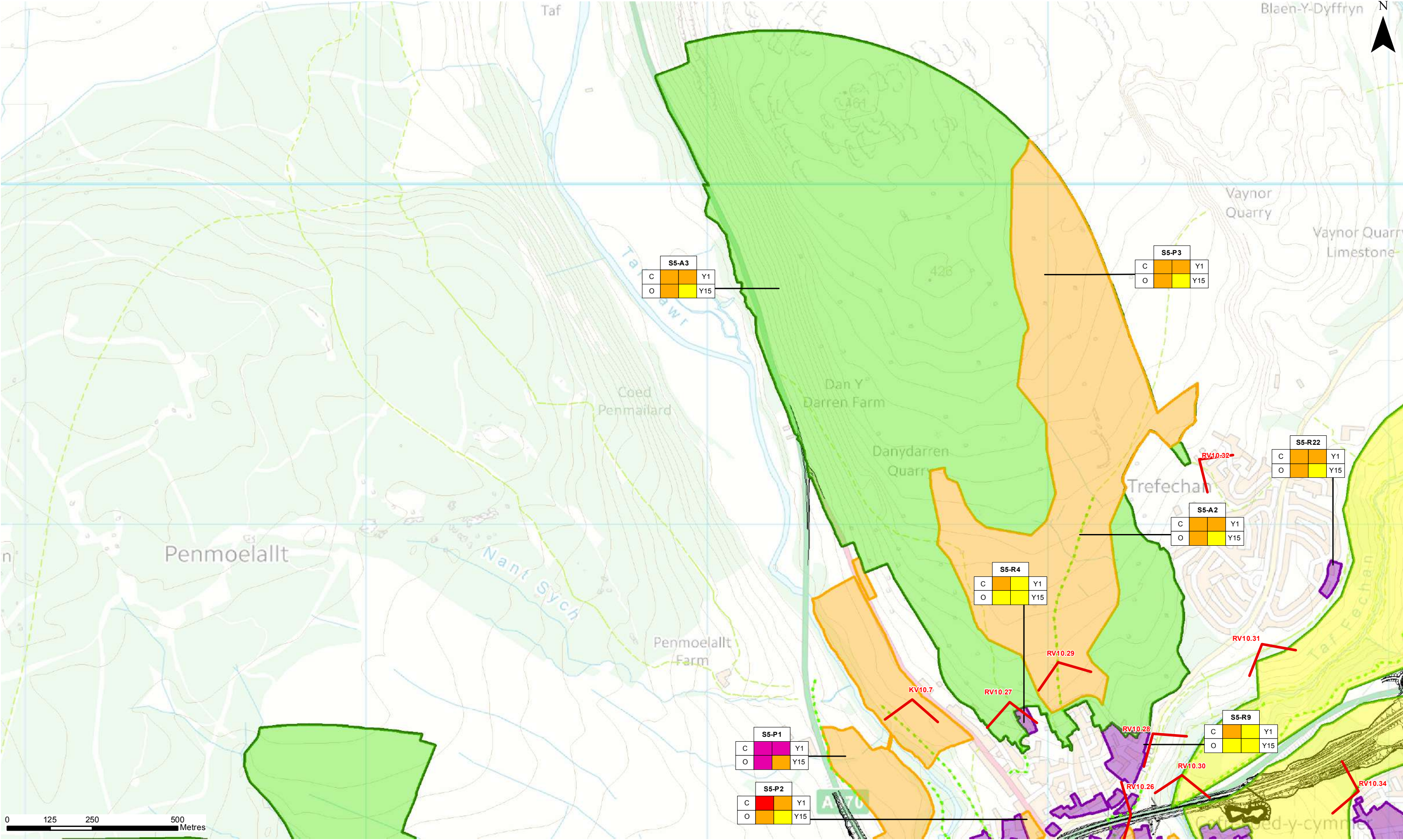
Visual effect during winter year 1 with planting mitigation

Visual effect during summer year 15 with planting mitigation

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Status	FINAL	
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Title	Visual effects	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.8 Sheet 5 of 10	Rev 0



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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Visual receptor
 - Users of public rights of way
 - Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

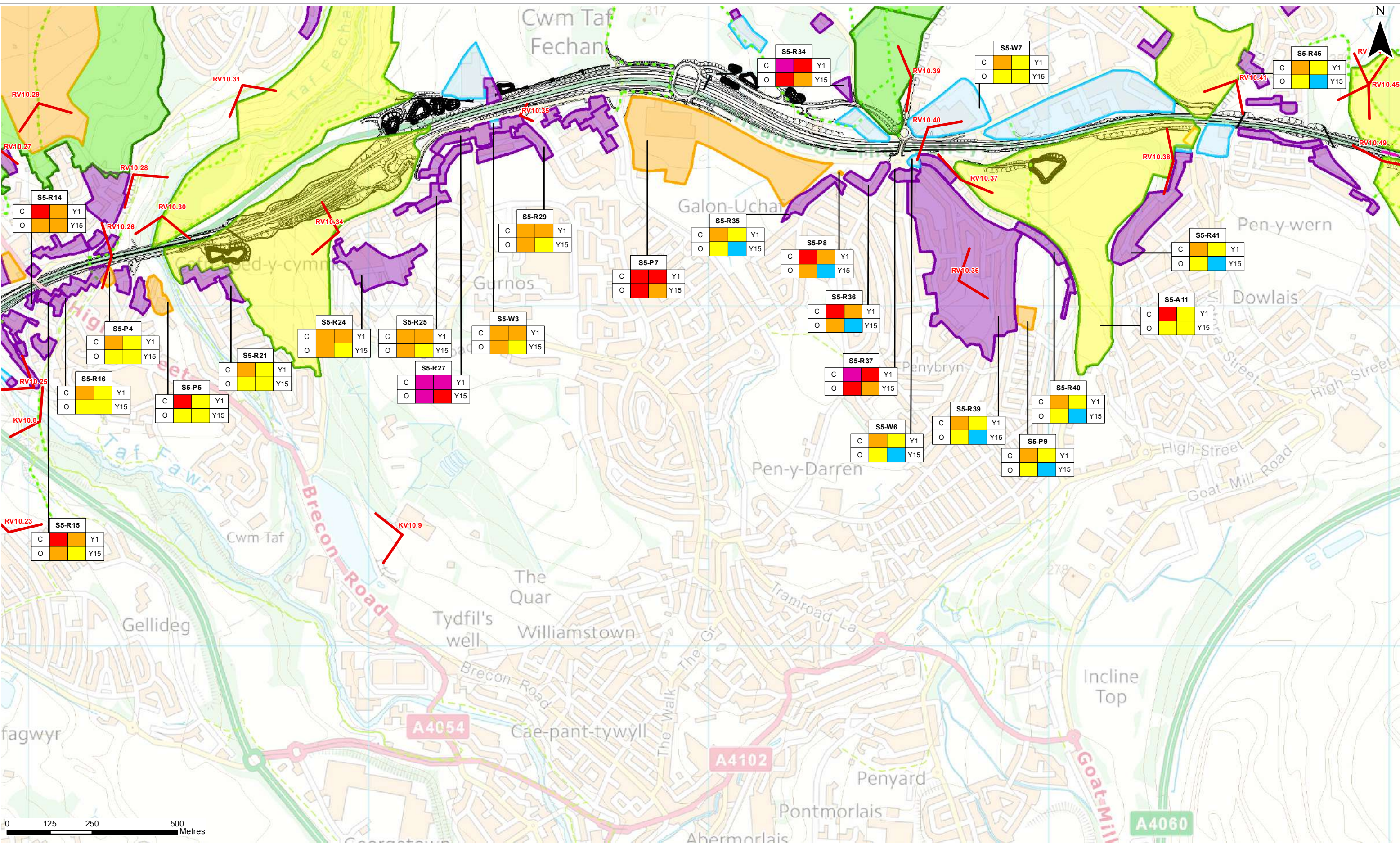
Receptor number

Visual effect during construction	C	Y1	Y15	Visual effect during winter year 1 with planting mitigation
Visual effect during operation without planting mitigation	O	Y1	Y15	Visual effect during summer year 15 with planting mitigation

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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Visual effects	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.8 Sheet 6 of 10	Rev 0



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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Users of public rights of way
- Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

Receptor number

	S6-R6	
C	Y1	
O	Y15	

Visual effect during construction

Visual effect during operation without planting mitigation

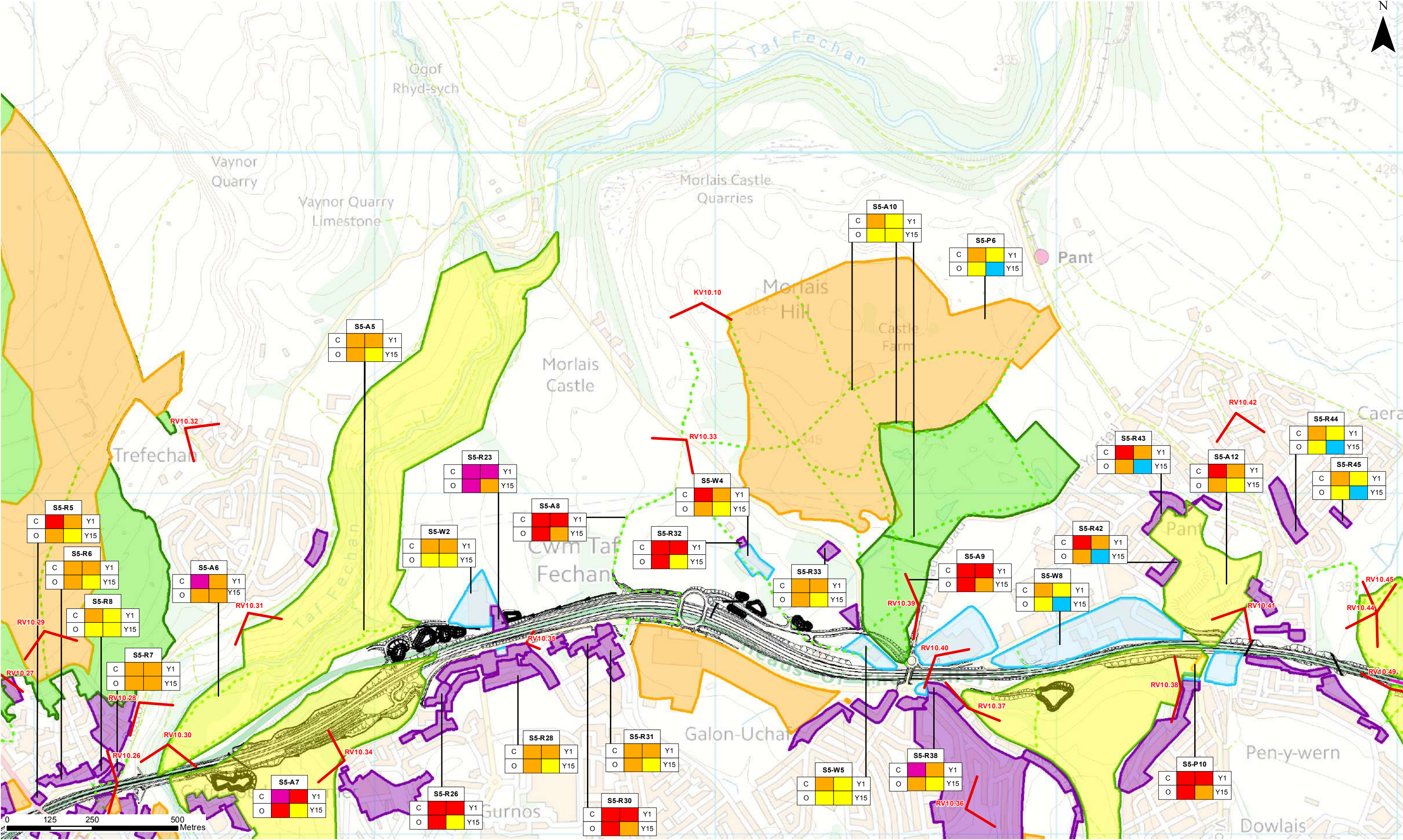
Visual effect during winter year 1 with planting mitigation

Visual effect during summer year 15 with planting mitigation

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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Visual effects	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.8 Sheet 7 of 10	Rev 0



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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Users of public rights of way
- Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

Receptor number

Visual effect during construction	C	Y1
Visual effect during operation without planting mitigation	O	Y15

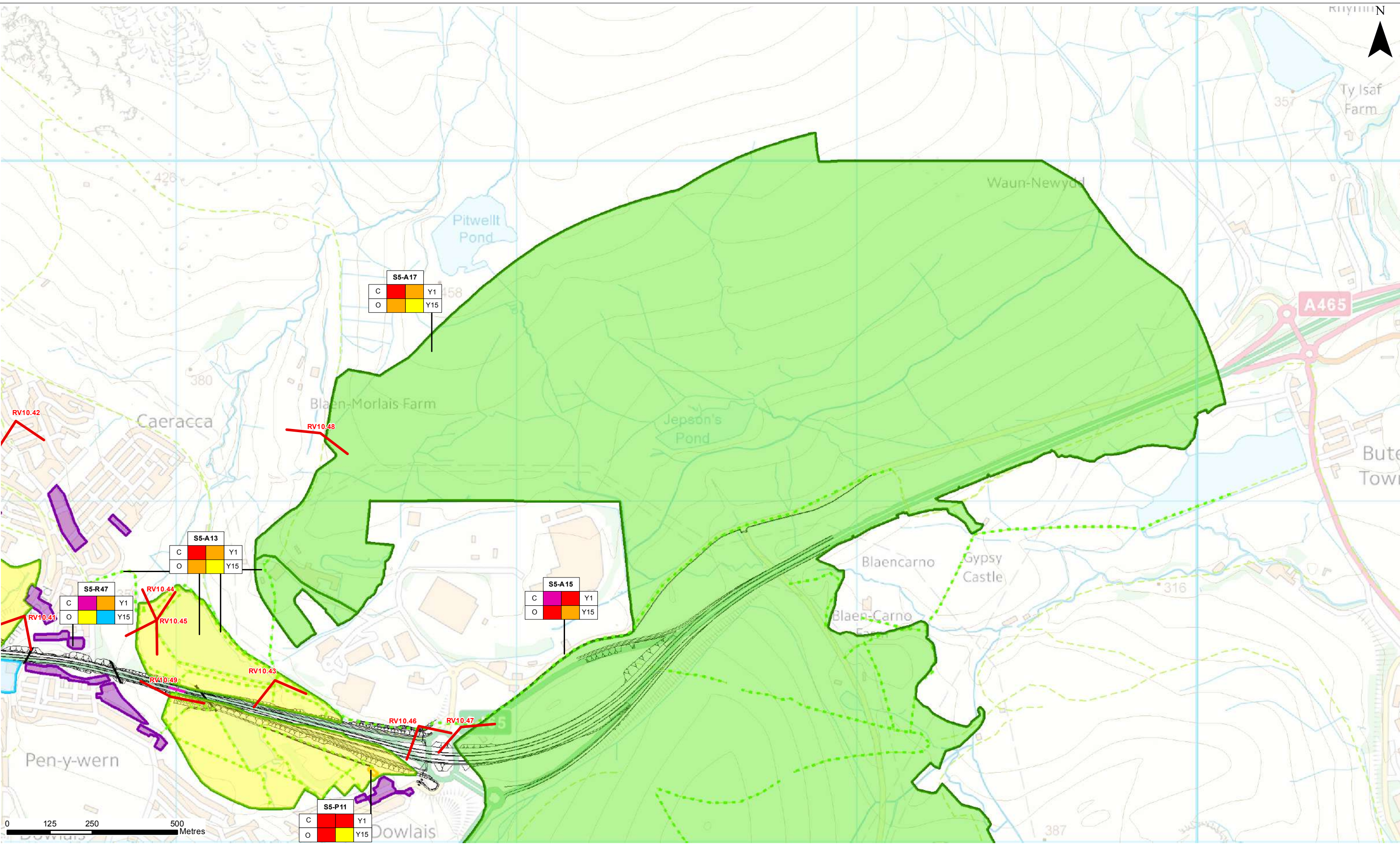
Visual effect during winter year 1 with planting mitigation

Visual effect during summer year 15 with planting mitigation

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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Visual effects	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.8 Sheet 8 of 10	Rev 0



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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Users of public rights of way
- Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

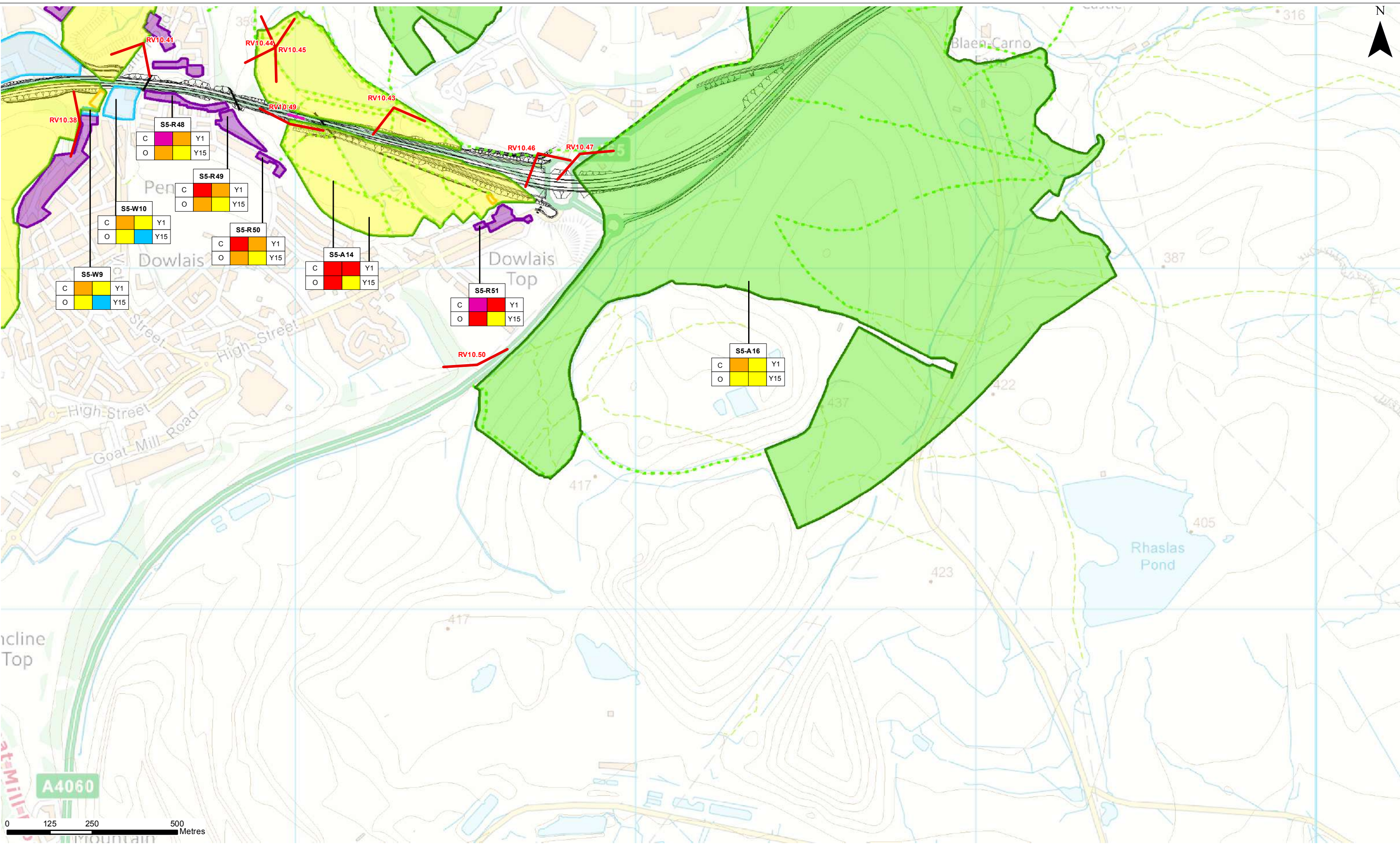
Receptor number

	S6-R6		
Visual effect during construction	C	Y1	Visual effect during winter year 1 with planting mitigation
Visual effect during operation without planting mitigation	O	Y15	Visual effect during summer year 15 with planting mitigation

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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Visual effects	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 10.8 Sheet 9 of 10	Rev 0



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Legend

- Scheme design
- Photograph viewpoints (KV - key view and RV - representative view, as illustrated on photograph sheets)
- Public rights of way (not a visual receptor)
- Users of public rights of way
- Public right of way section break

- People at public facilities
- People at work
- People in residential properties
- Users of open access land
- Users of open spaces

Matrix Legend

- Very large adverse
- Large adverse
- Moderate adverse
- Slight adverse
- Neutral

Receptor number

	S6-R6		
Visual effect during construction	C	Y1	Visual effect during winter year 1 with planting mitigation
Visual effect during operation without planting mitigation	O	Y15	Visual effect during summer year 15 with planting mitigation

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Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN		
Title	Visual effects		
Scale	1:10,000 @A3	DO NOT SCALE	
Drawing No.	Figure 10.8 Sheet 10 of 10	Rev 0	

View south-east from National Cycle Route 46 (receptor S6-A6), looking towards Hirwaun junction. Year 1



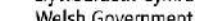
Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating RV10.2. Visualisation is illustrative only.

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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Visualisation 1 (RV10.2) year 1	
Scale	NOT TO SCALE	
Drawing No.	Visualisation 1	Rev 0



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View south-east from National Cycle Route 46 (receptor S6-A6), looking towards Hirwaun junction. Year 15



Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating RV10.2. Visualisation is illustrative only.

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									Project A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN				
									Title Visualisation 1 (RV10.2) year 15				
									Scale	NOT TO SCALE			
									Drawing No.	Visualisation 1	Rev 0		
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View north-west from the Taff Trail on the Cefn Coed viaduct (receptor S5-A1), to the A470 viaduct, A470 junction and the Taf Fawr viaduct. Year 1





Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating KV10.8. Visualisation is illustrative only.

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									Project A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN		
									Title Visualisation 2 (KV10.8) year 1		
									Scale	NOT TO SCALE	
									Drawing No.	Visualisation 2	
0	MAR18	FINAL	FL	RL	RL	WB			Rev 0		
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View north-west from the Taff Trail on the Cefn Coed viaduct (receptor S5-A1), to the A470 viaduct, A470 junction and the Taf Fawr viaduct. Year 15





Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating KV10.8. Visualisation is illustrative only.

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									Project A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
									Title Visualisation 2 (KV10.8) year 15	
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									Drawing No.	Visualisation 2
0	MAR18	FINAL	FL	RL	RL	WB			Rev 0	
Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd				
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View from Vaynor Public Footpath 34 (receptor S5-A6), looking south along the leat and disused Gurnos Quarry Tramroad to the Taf Fechan viaduct. Year 1 and year 15



Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating RV10.30. Visualisation is illustrative only.



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							Title Visualisation 3 (RV10.30) year 1 and year 15					
							Scale		NOT TO SCALE			
							Drawing No.		Visualisation 3	Rev 0		
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View south from Pant Hollow open space allocation (receptor S5-A12). Year 1



Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating RV10.41. Visualisation is illustrative only.

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									Project A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN		
									Title Visualisation 4 (RV10.41) year 1		
									Scale	NOT TO SCALE	
									Drawing No.	Visualisation 4	Rev 0
0	MAR18	FINAL	FL	RL	RL	WB					
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View south from Pant Hollow open space allocation (receptor S5-A12). Year 15





Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating RV10.41. Visualisation is illustrative only.

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									Project A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN		
									Title Visualisation 4 (RV10.41) year 15		
									Scale	NOT TO SCALE	
									Drawing No.	Visualisation 4	
0	MAR18	FINAL	FL	RL	RL	WB			Rev 0		
Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd					
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View south from National Cycle Route 46 (receptor S5-A15), to Dowlais junction. Year 1 left




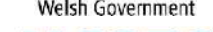
Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating RV10.47. Visualisation is illustrative only.

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									Title	Visualisation 5 (RV10.47) year 1 left	
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Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd			Drawing No.	Visualisation 5	Rev 0
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View south from National Cycle Route 46 (receptor S5-A15), to Dowlais junction. Year 1 right




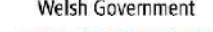
Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating RV10.47. Visualisation is illustrative only.

								<div><p>Llywodraeth Cymru Welsh Government</p><p>Churchill House, Churchill Way, Cardiff, CF10 2HH Tel: +44(0)29 2035 3200 Fax: +44(0)29 2035 3222</p></div>	Status FINAL	
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Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd				
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View south from National Cycle Route 46 (receptor S5-A15), to Dowlais junction. Year 15 left



Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating RV10.47. Visualisation is illustrative only.

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Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd				
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View south from National Cycle Route 46 (receptor S5-A15), to Dowlais junction. Year 15 right



Refer to Figure 10.6.2 for visualisation viewpoints. For existing conditions refer to photograph illustrating RV10.47. Visualisation is illustrative only.

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Environmental Statement Supplement Volume 3: Revised Figures

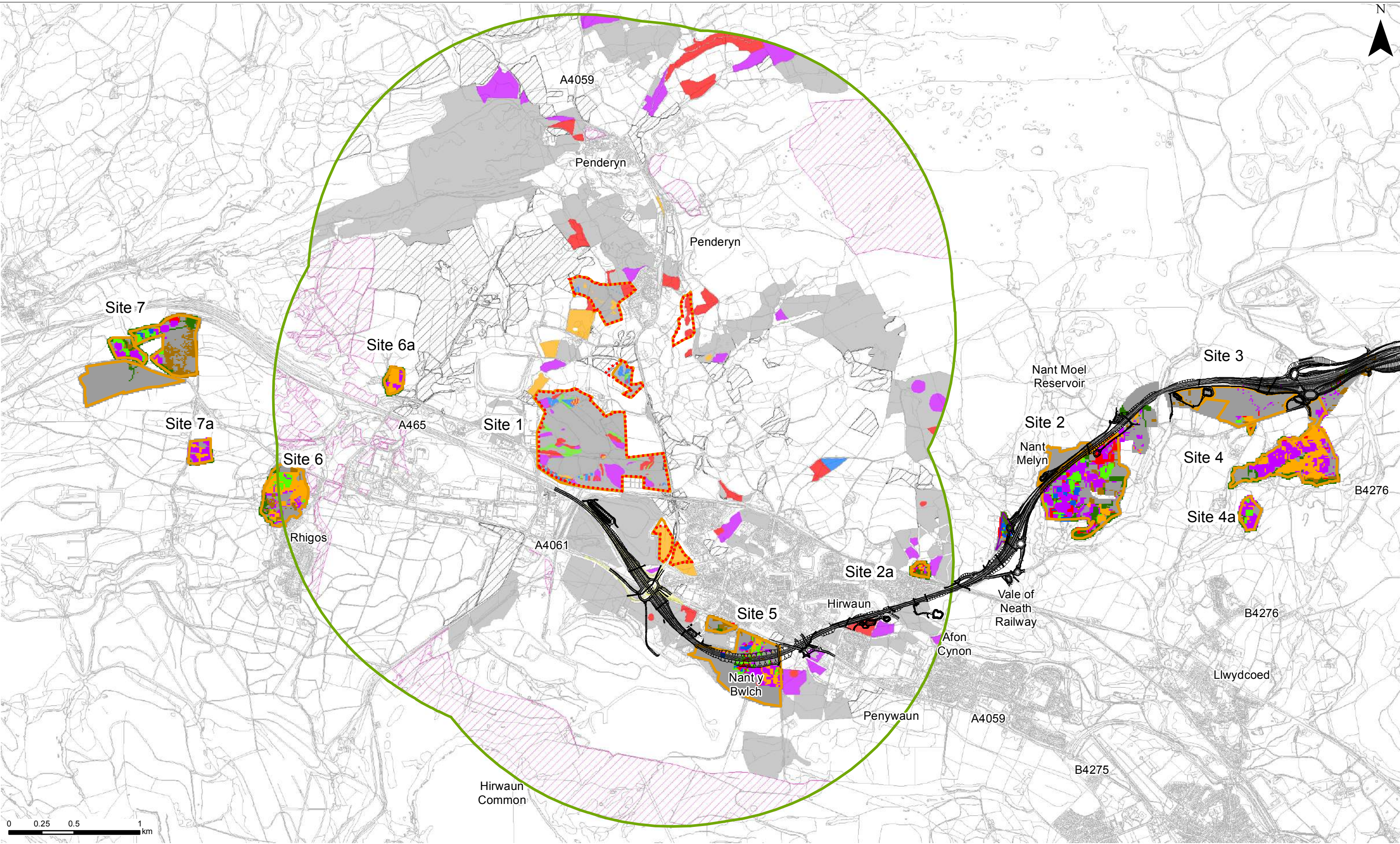
All Figures included in this Volume are a direct replacement of the corresponding Figures issued in the July 2017 published Environmental Statement Volume 3.

Revised Figures accompanying Chapter 11: Nature Conservation are included as follows:

Figure 11.6	Marsh Fritillary Site Overview
Figure 11.7	Marsh Fritillary Habitat Loss
Figure 11.15	Nature Conservation Mitigation ¹

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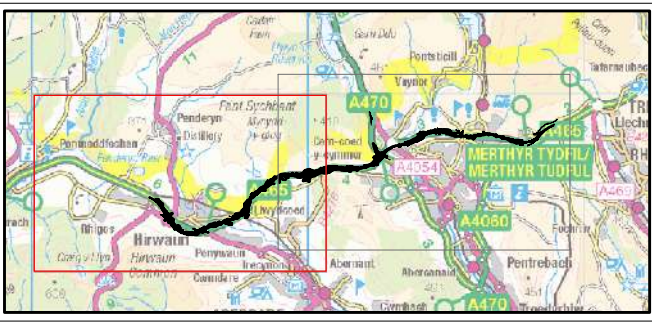
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Legend

- Scheme design
- 2km SAC core metapopulation area
- Blaen Cynon SAC
- Monitoring sites


- Good quality habitat
- Suitable (under-grazed) habitat
- Suitable (over-grazed) habitat
- Suitable (sparse) habitat
- Potential (rank) habitat
- Surveyed - not suitable
- Desk study - not suitable

- No access - health and safety reasons
- No access - access denied
- No access - no landowner information available



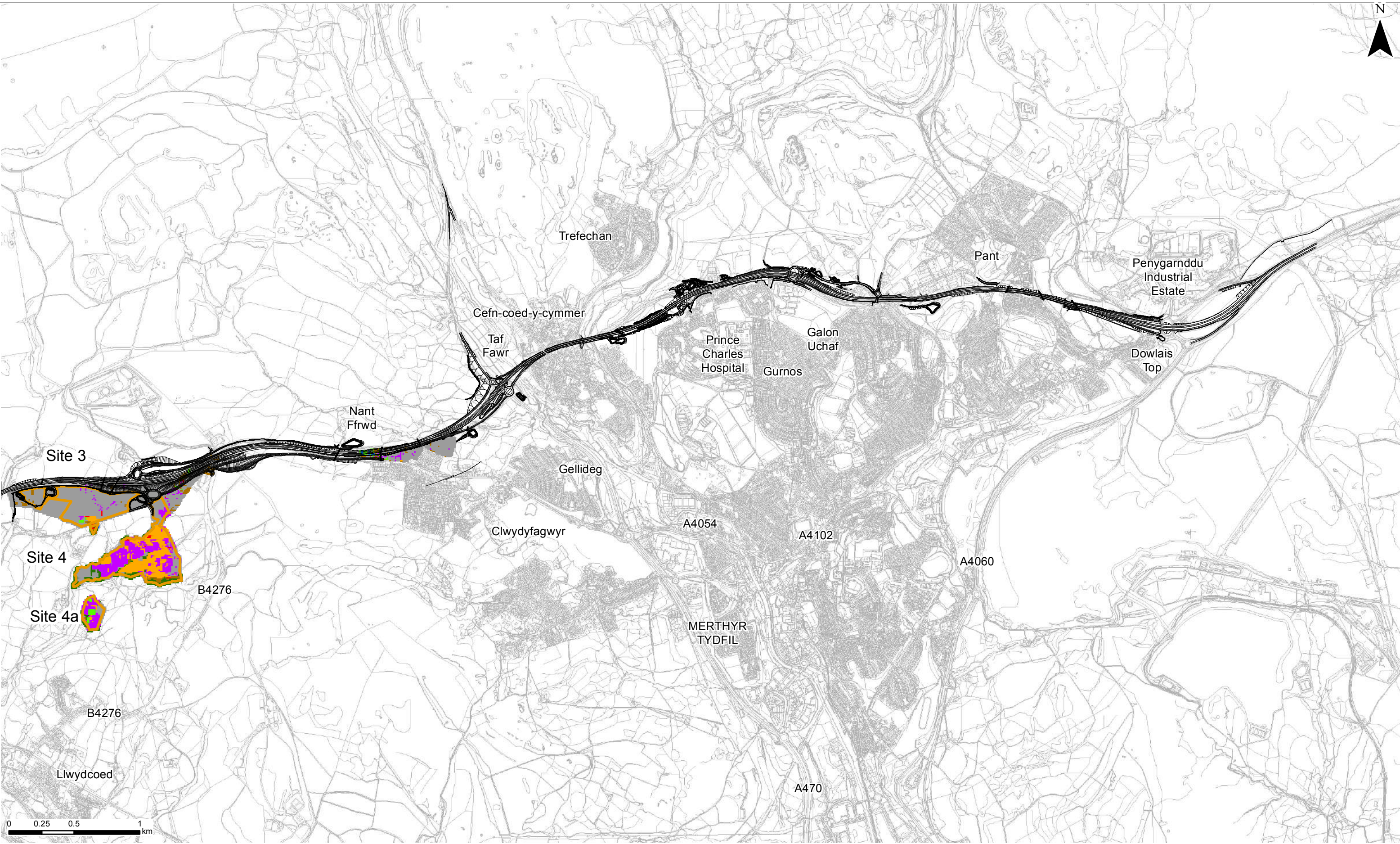


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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Marsh frittillary site overview	
Scale	1:26,000 @A3	DO NOT SCALE
Drawing No.	Figure 11.6 Sheet 1 of 2	Rev 0



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Legend
— Scheme design
2km SAC core metapopulation area
Blaen Cynon SAC
Monitoring sites

Good quality habitat

Suitable (under-grazed) habitat

Suitable (over-grazed) habitat

Suitable (sparse) habitat

Potential (rank) habitat

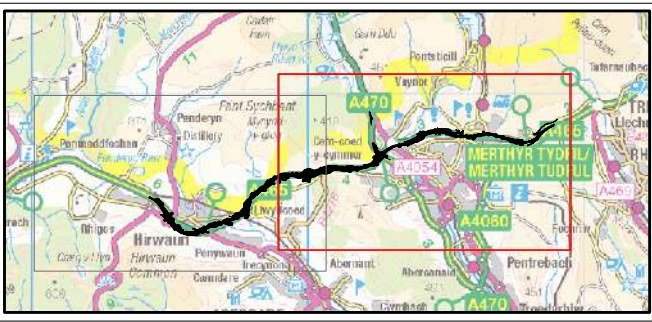
Surveyed - not suitable


Desk study - not suitable

No access - health and safety reasons

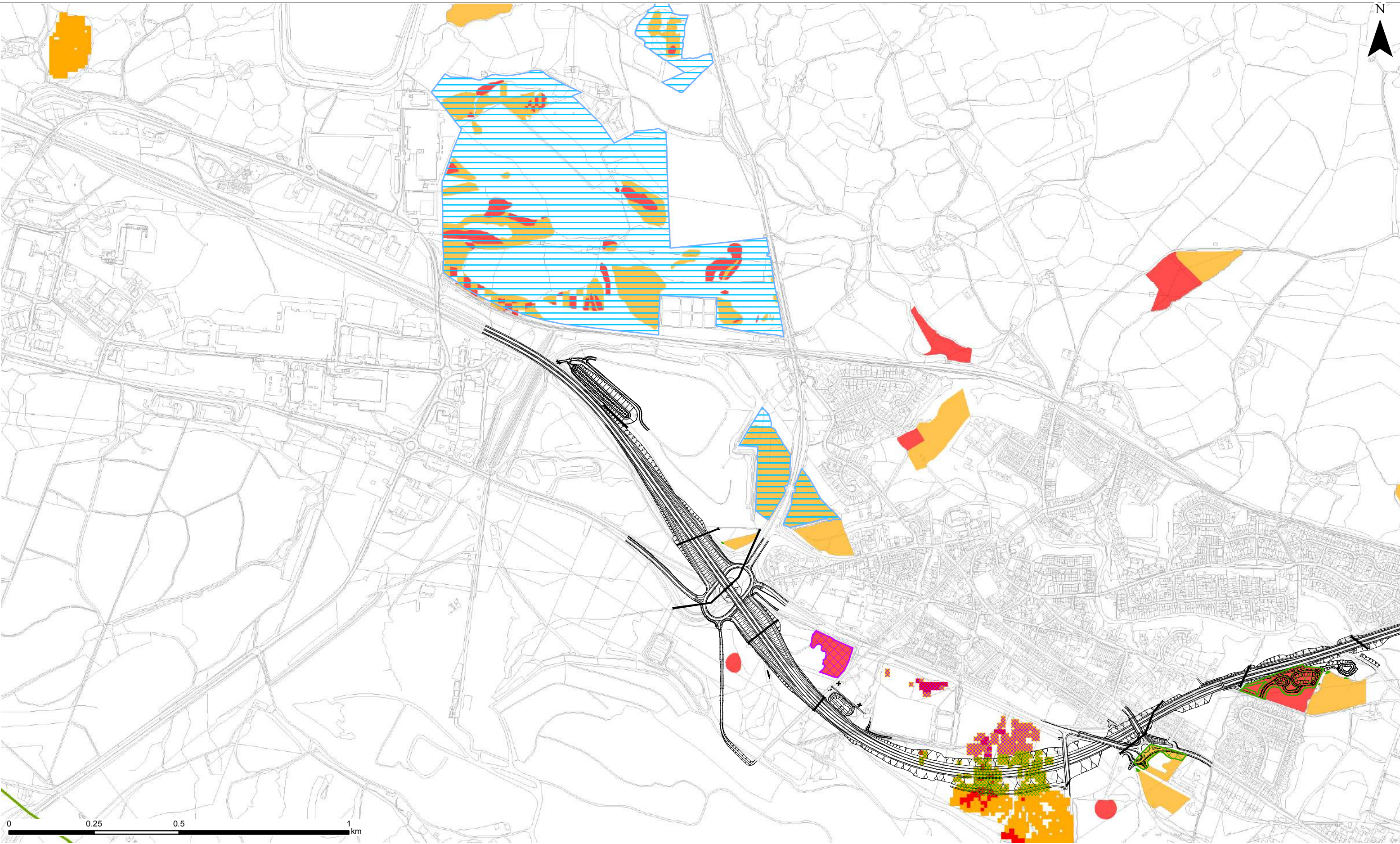
No access - access denied

No access - no landowner information available




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Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DWLAIS TOP TO HIRWAUN	
Title	Marsh fritillary site overview	
Scale	1:26,000 @A3	DO NOT SCALE
Drawing No.	Figure 11.6 Sheet 2 of 2	Rev 0



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Legend

— Scheme design

▨ Blaen Cynon Special Area of Conservation (SAC)

▨ 2km Upper Cynon Valley Functional Landscape Area

▨ 2km SAC core metapopulation area

Marsh fritillary habitat

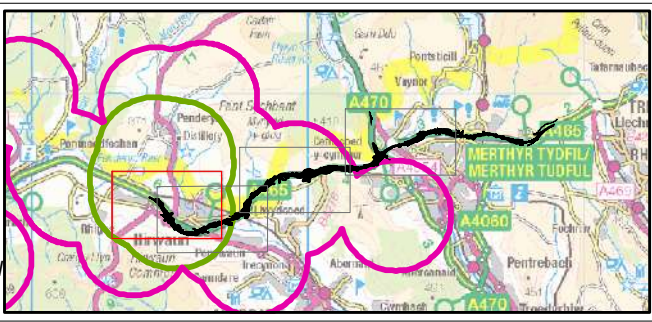
■ Good condition


■ Suitable

▨ Marsh fritillary habitat loss


▨ Assumed habitat loss due to fragmentation

Suitable habitat in this figure is classified as the combined coverage of 'suitable undergrazed', 'suitable overgrazed', 'suitable sparse', and 'potential rank' sub-categories





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Title	Marsh fritillary habitat loss	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 11.7 Sheet 1 of 4	Rev 0



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Legend

— Scheme design

▨ Blaen Cynon Special Area of Conservation (SAC)

▨ 2km Upper Cynon Valley Functional Landscape Area

▨ 2km SAC core metapopulation area

Marsh fritillary habitat

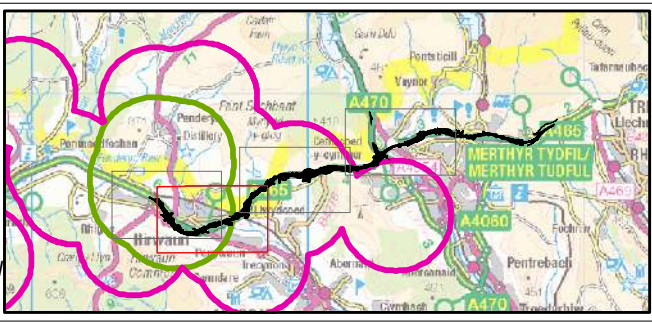
■ Good condition


■ Suitable

▨ Marsh fritillary habitat loss


▨ Assumed habitat loss due to fragmentation

Suitable habitat in this figure is classified as the combined coverage of 'suitable undergrazed', 'suitable overgrazed', 'suitable sparse', and 'potential rank' sub-categories





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Title	Marsh fritillary habitat loss	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 11.7 Sheet 2 of 4	Rev 0



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Legend

— Scheme design

— Blaen Cynon Special Area of Conservation (SAC)

— 2km Upper Cynon Valley Functional Landscape Area

— 2km SAC core metapopulation area

Marsh fritillary habitat

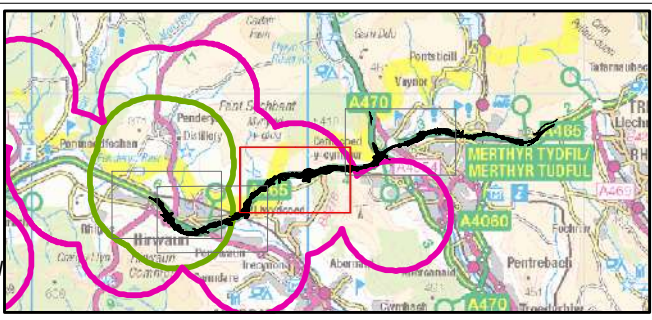
Good condition

Suitable

Marsh fritillary habitat loss

Assumed habitat loss due to fragmentation

Suitable habitat in this figure is classified as the combined coverage of 'suitable undergrazed', 'suitable overgrazed', 'suitable sparse', and 'potential rank' sub-categories





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Title	Marsh fritillary habitat loss	
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Drawing No.	Figure 11.7 Sheet 3 of 4	Rev 0

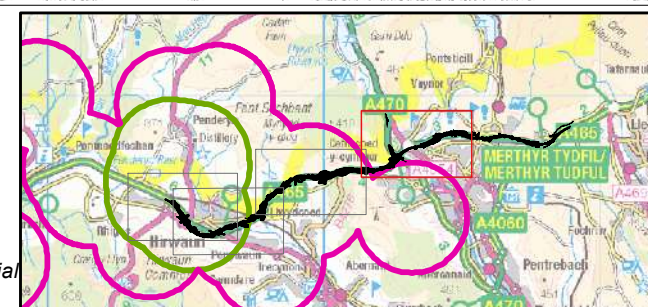


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 Good condition
 Suitable

Suitable habitat in this figure is classified as the combined coverage of 'suitable undergrazed', 'suitable overgrazed', 'suitable sparse', and 'potential rank' sub-categories



Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Marsh fritillary habitat loss	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 11.7 Sheet 4 of 4	Rev 0

Revised Figure 11.15 Nature Conservation Mitigation

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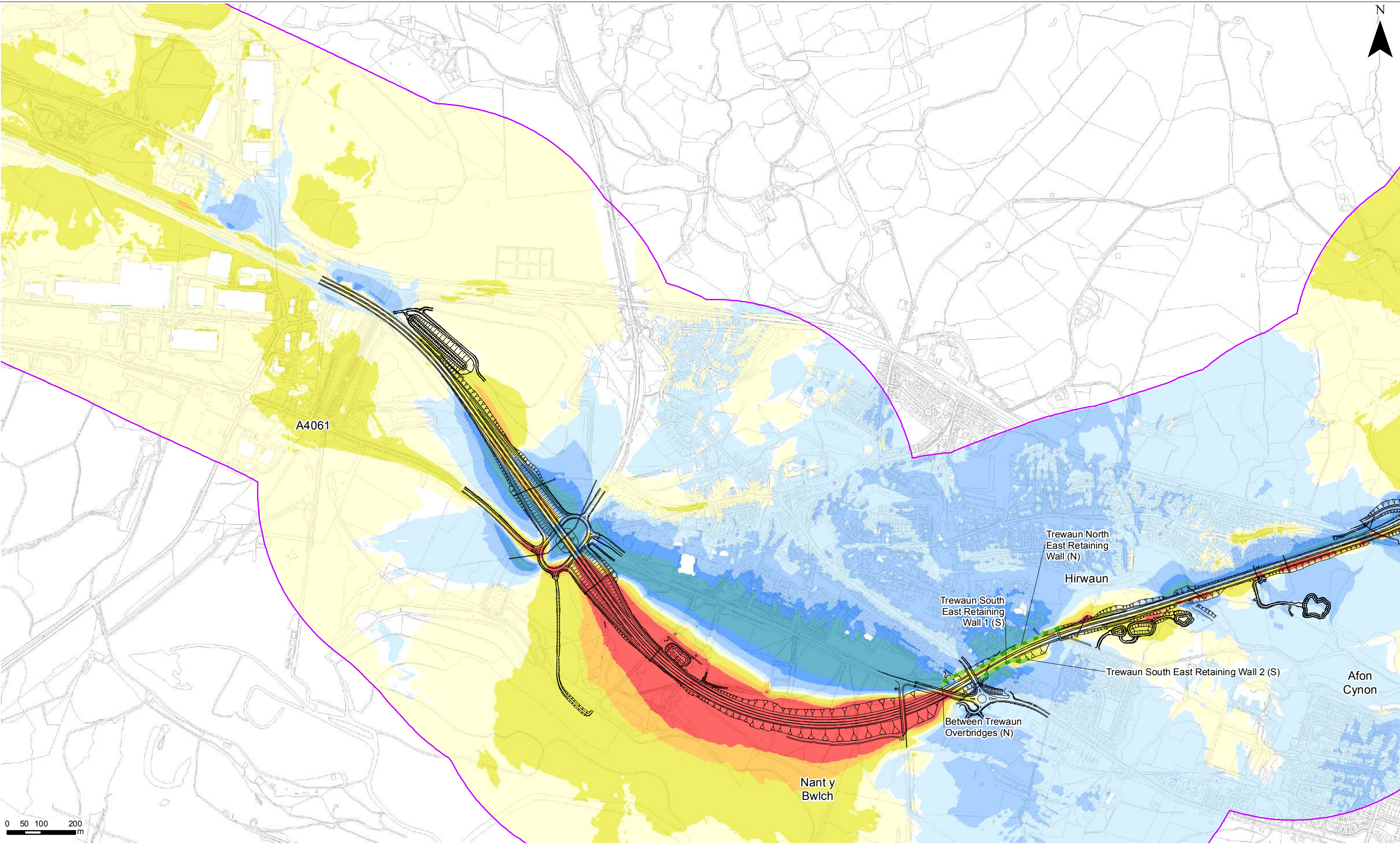
Environmental Statement Supplement Volume 3: Revised Figures

All Figures included in this Volume are a direct replacement of the corresponding Figures issued in the July 2017 published Environmental Statement Volume 3.

Revised Figures accompanying Chapter 14: Noise and Vibration are included as follows:

Figure 14.4	Noise Change Contour Plan DM (Opening) Against DS (Opening year)
Figure 14.5	Noise Change Contour Plan DM (Opening) Against DS (Future Year)
Figure 14.6	Noise Change Contour Plan DM (Opening Year) Against DM (Future Year)
Figure 14.7	Operational sample receptors and NAPPA location

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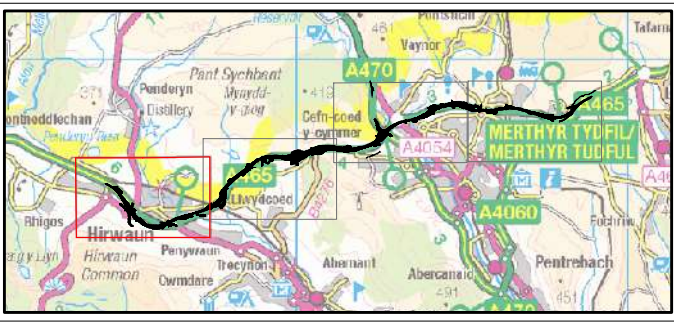
Legend

- Scheme design
- DMRB study area
- Environmental barriers

DMRB short term magnitudes of change in dB

- Major decrease (5+)
- Moderate decrease (3 to 4.9)
- Minor decrease (1 to 2.9)

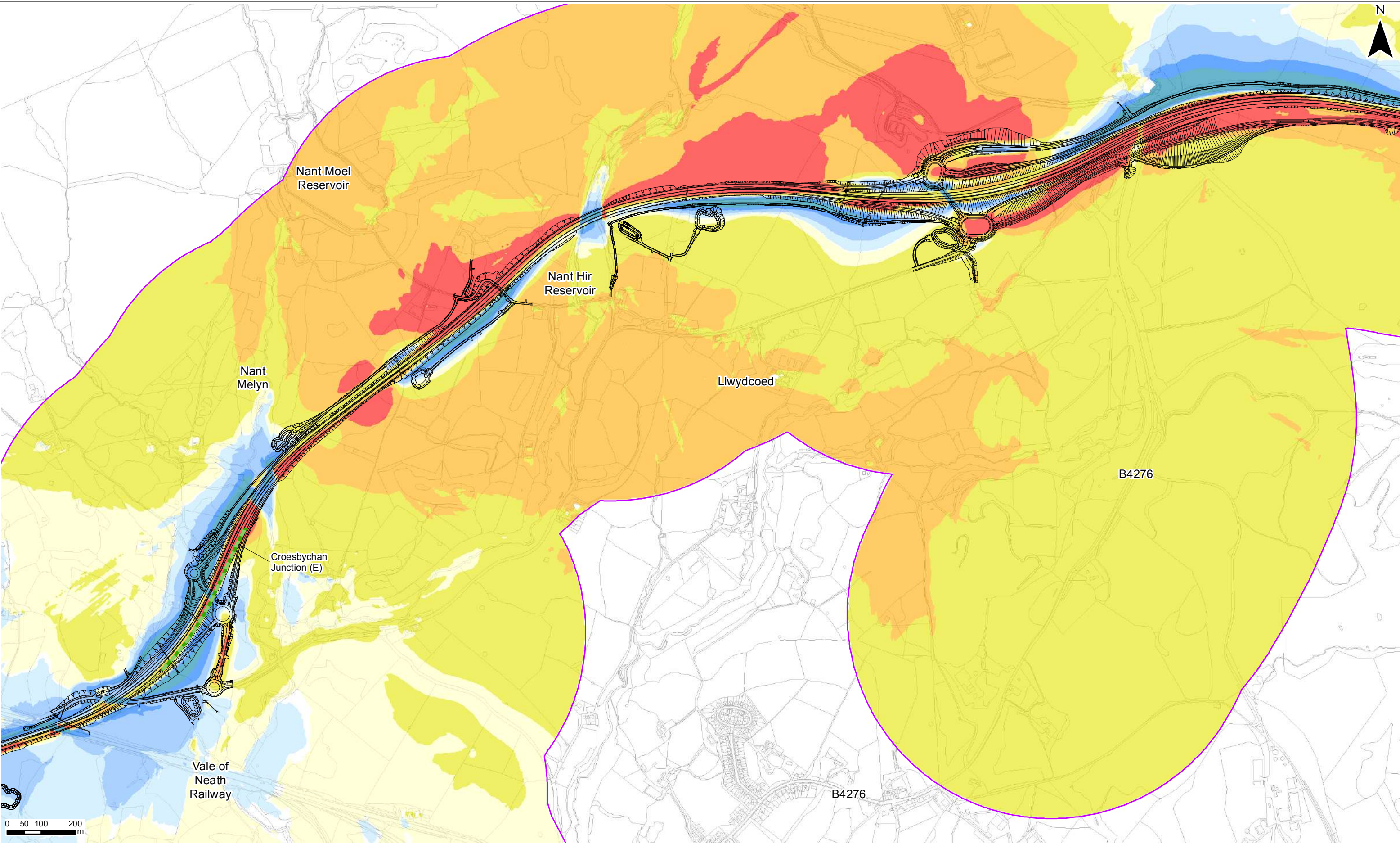
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- No change (0)
- Negligible increase (0 to 0.9)
- Minor increase (1 to 2.9)
- Moderate increase (3 to 4.9)
- Major increase (5+)



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Title	Noise change contour plan DM (opening year) against DS (opening year)	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.4 Sheet 1 of 4	Rev 0



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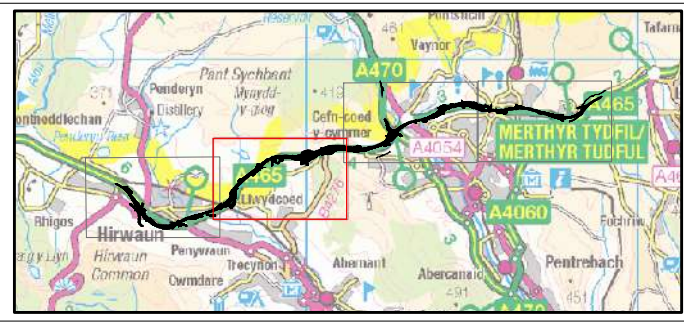
Legend

- Scheme design
- DMRB study area
- Environmental barriers

DMRB short term magnitudes of change in dB

- Major decrease (5+)
- Moderate decrease (3 to 4.9)
- Minor decrease (1 to 2.9)

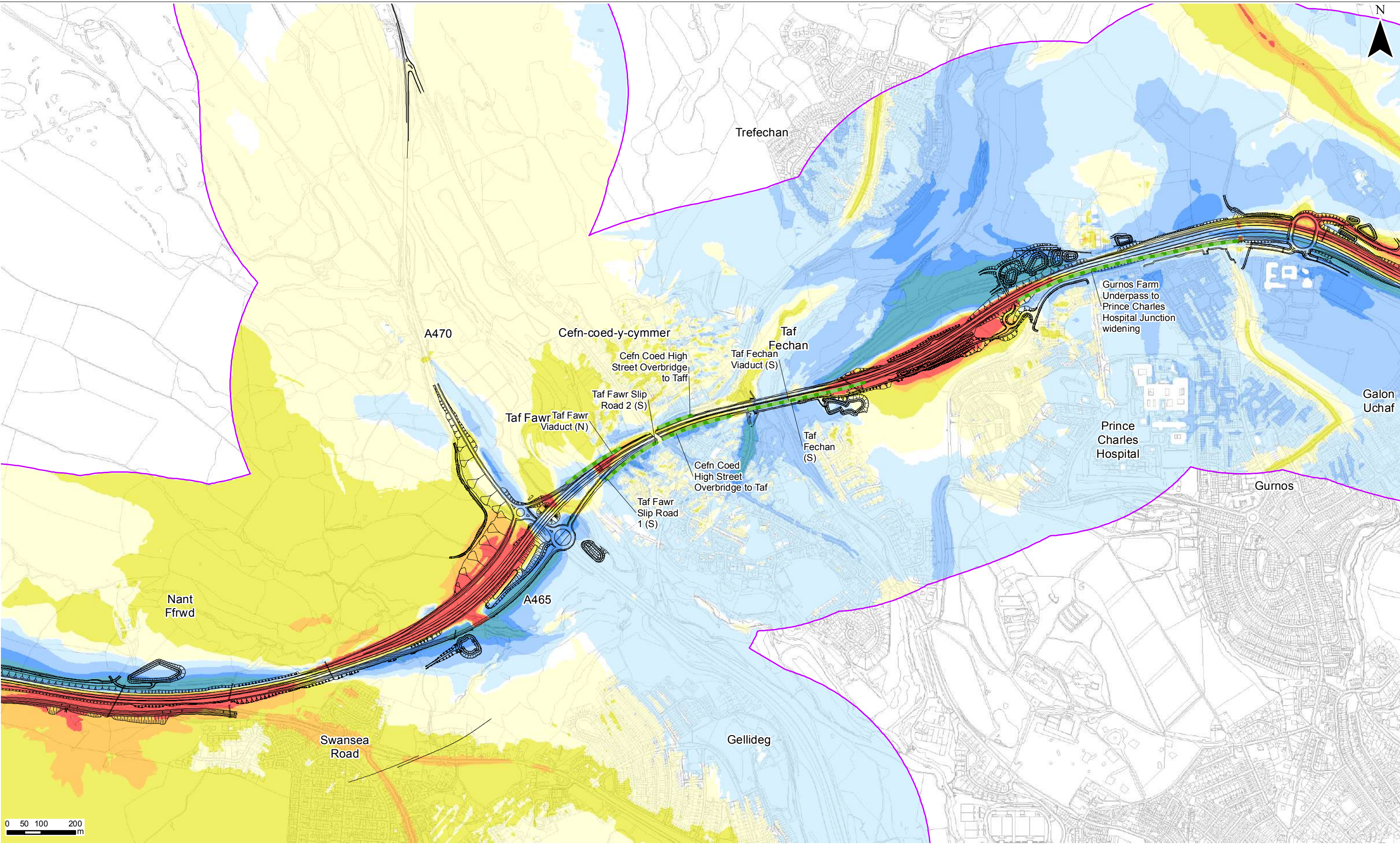
- Negligible decrease (0 to 0.9)
- No change (0)
- Negligible increase (0 to 0.9)
- Minor increase (1 to 2.9)
- Moderate increase (3 to 4.9)
- Major increase (5+)



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Drawing No.	Figure 14.4 Sheet 2 of 4	Rev 0



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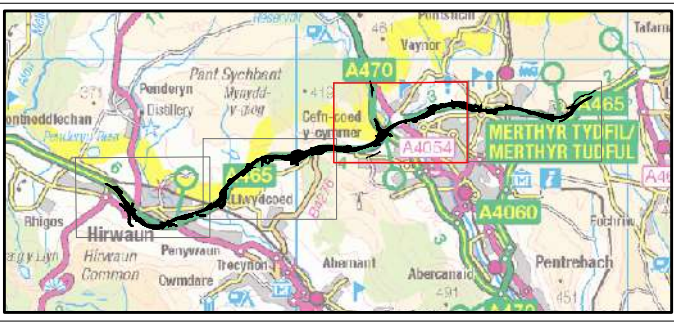
Legend

- Scheme design
- DMRB study area
- Environmental barriers

DMRB short term magnitudes of change in dB

- Major decrease (5+)
- Moderate decrease (3 to 4.9)
- Minor decrease (1 to 2.9)

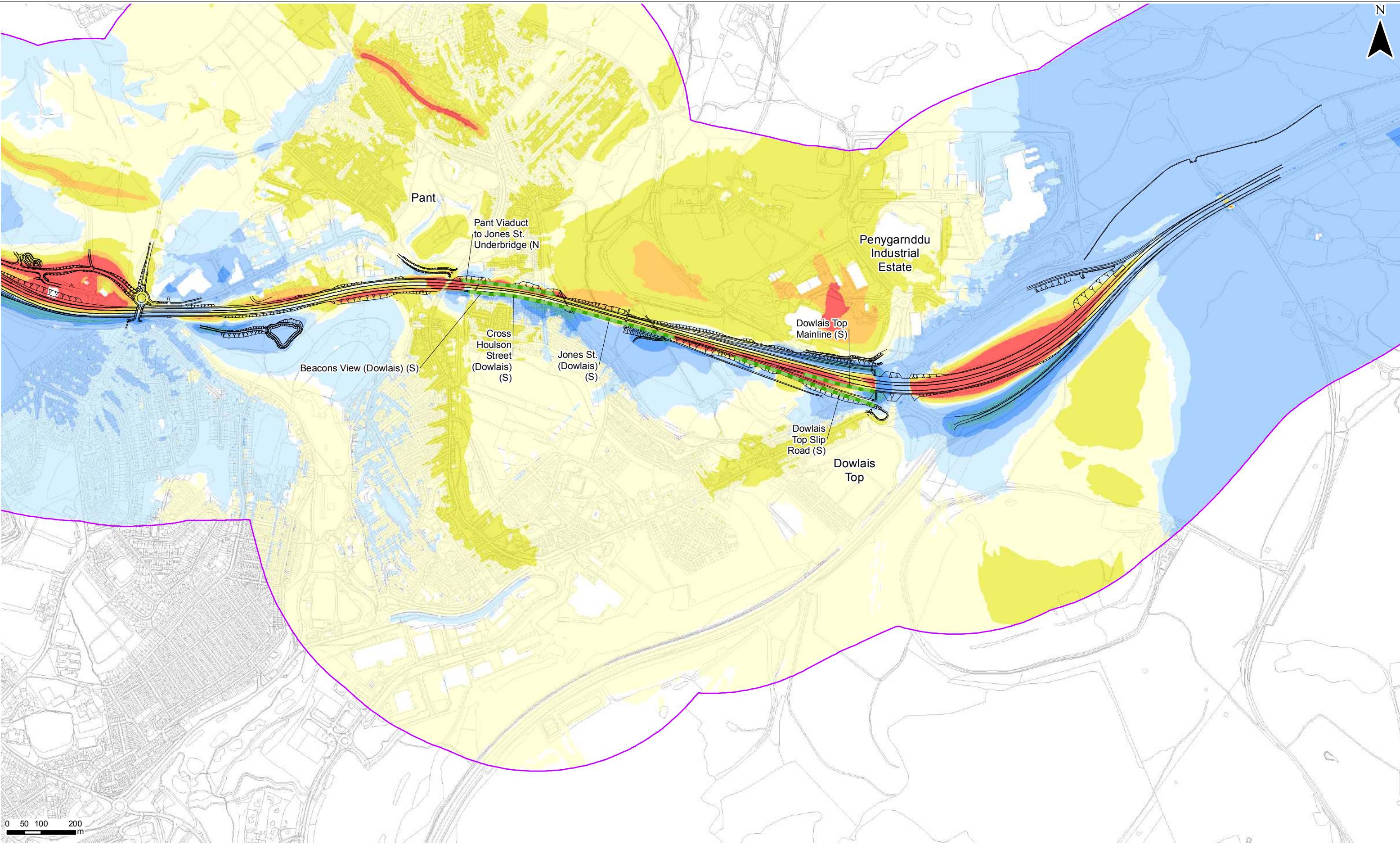
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- Minor increase (1 to 2.9)
- Moderate increase (3 to 4.9)
- Major increase (5+)



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Drawing No.	Figure 14.4 Sheet 3 of 4	Rev 0



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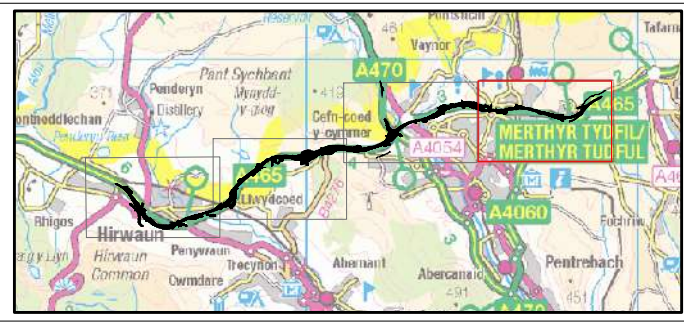
Legend

- Scheme design
- DMRB study area
- Environmental barriers

DMRB short term magnitudes of change in dB

- Major decrease (5+)
- Moderate decrease (3 to 4.9)
- Minor decrease (1 to 2.9)

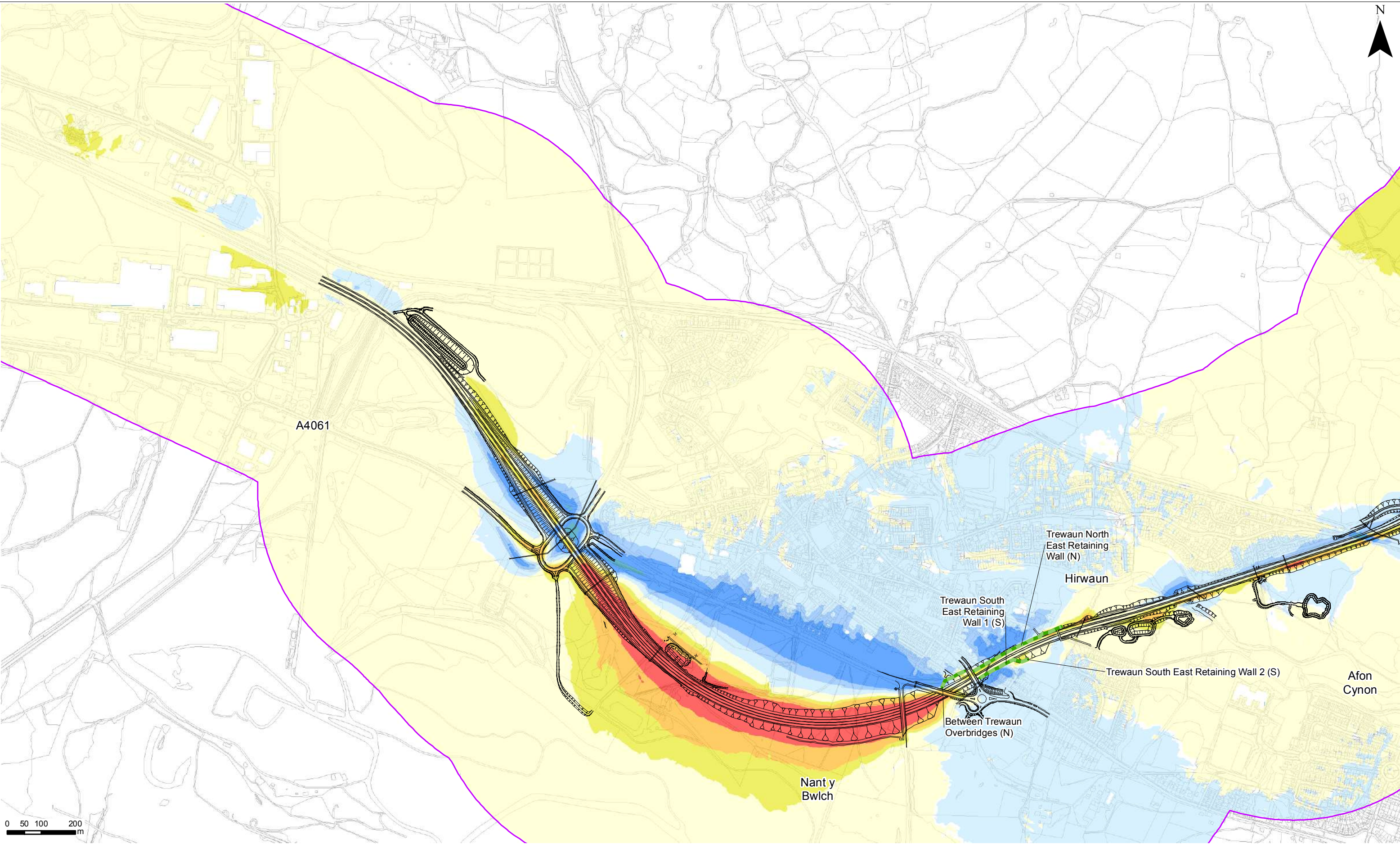
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- Negligible increase (0 to 0.9)
- Minor increase (1 to 2.9)
- Moderate increase (3 to 4.9)
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Title	Noise change contour plan DM (opening year) against DS (opening year)	
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Drawing No.	Figure 14.4 Sheet 4 of 4	Rev 0



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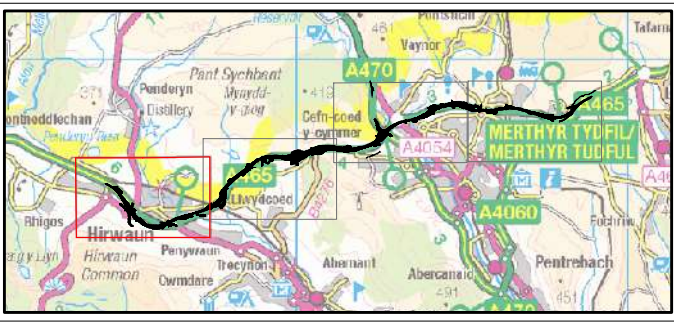
Legend

- Scheme design
- DMRB study area
- Environmental barriers

DMRB long term magnitudes of change in dB

- Major decrease (10+)
- Moderate decrease (5 to 9.9)
- Minor decrease (3.0 to 4.9)

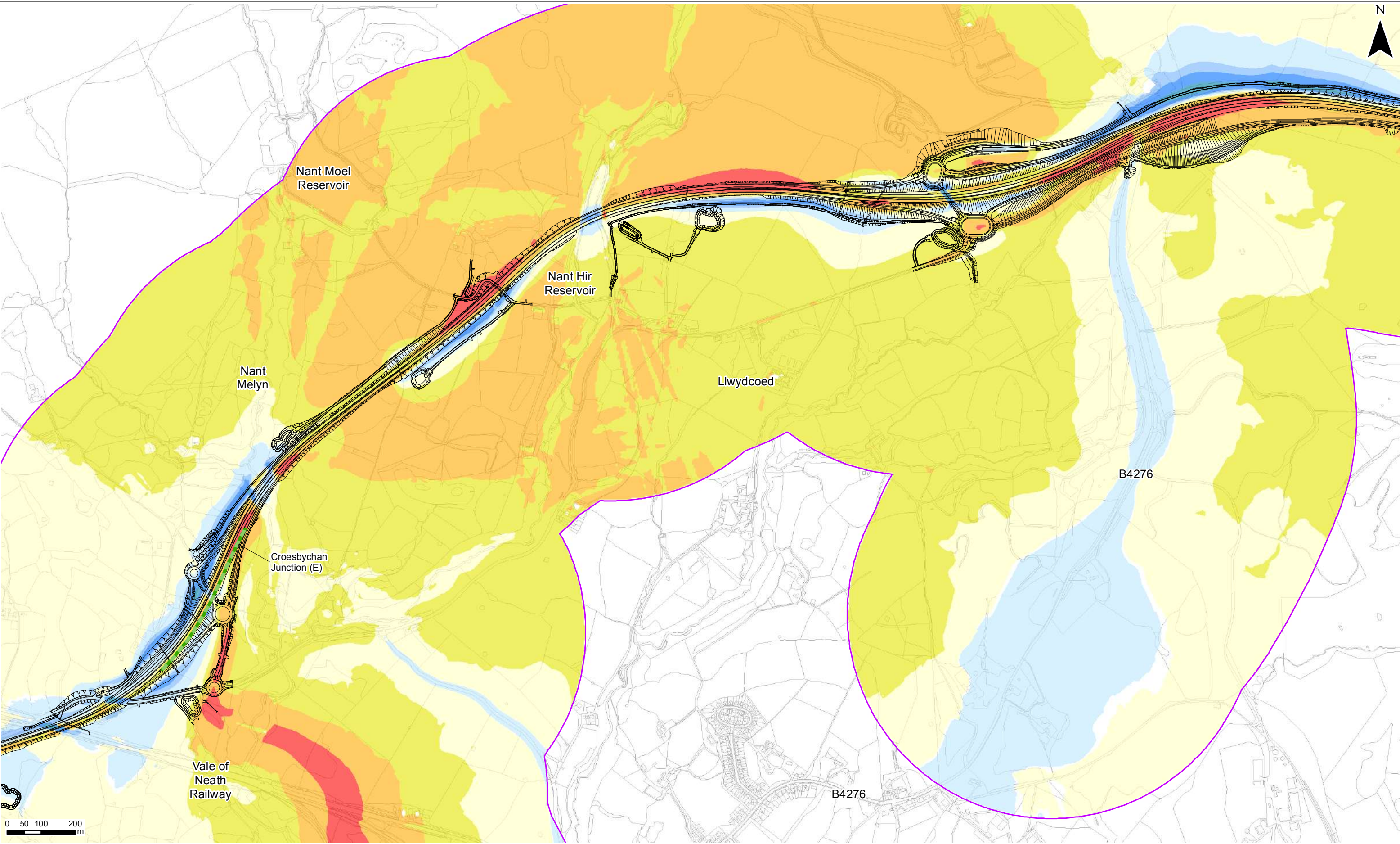
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- Minor increase (3 to 4.9)
- Moderate increase (5 to 9.9)
- Major increase (10+)



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Title	Noise change contour plan DM (opening year) against DS (future year)	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.5 Sheet 1 of 4	Rev 0



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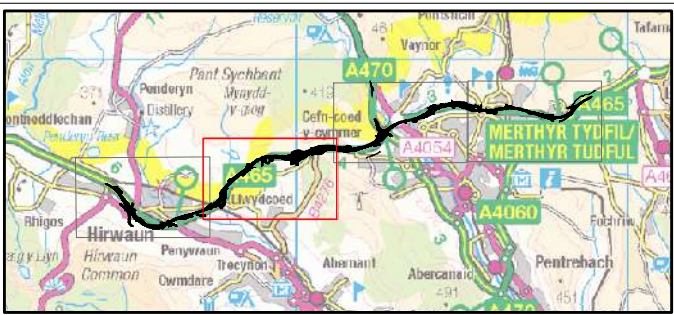
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Legend

- Scheme design
- DMRB study area
- Environmental barriers

DMRB long term magnitudes of change in dB

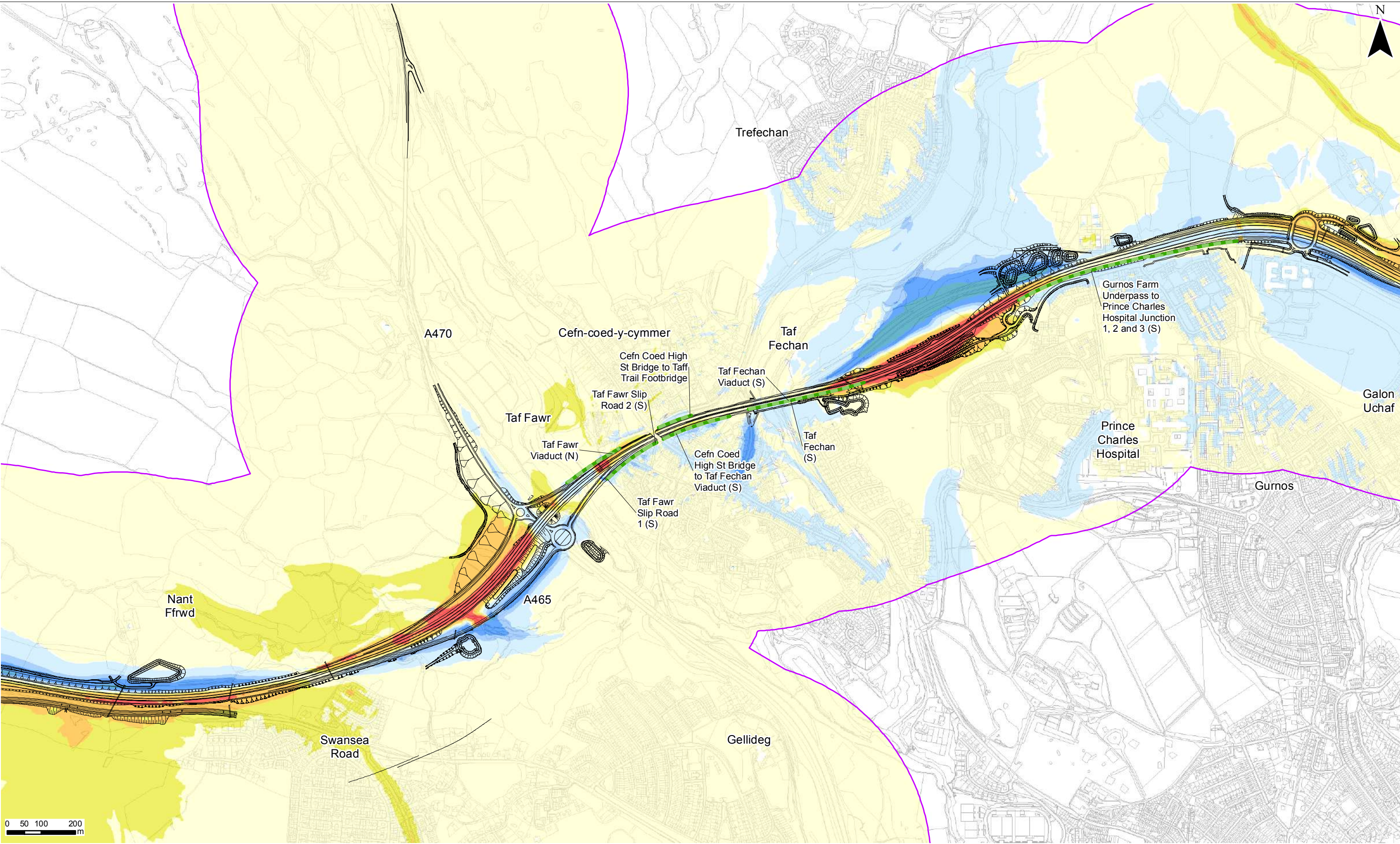
- Major decrease (10+)
- Moderate decrease (5 to 9.9)
- Minor decrease (3.0 to 4.9)
- Negligible decrease (0 to 2.9)
- No change (0)
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- Moderate increase (5 to 9.9)
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Title	Noise change contour plan DM (opening year) against DS (future year)	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.5 Sheet 2 of 4	Rev 0



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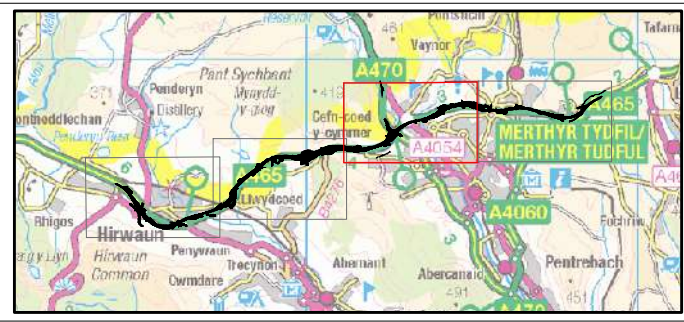
Legend

- Scheme design
- DMRB study area
- Environmental barriers

DMRB long term magnitudes of change in dB

- Major decrease (10+)
- Moderate decrease (5 to 9.9)
- Minor decrease (3.0 to 4.9)

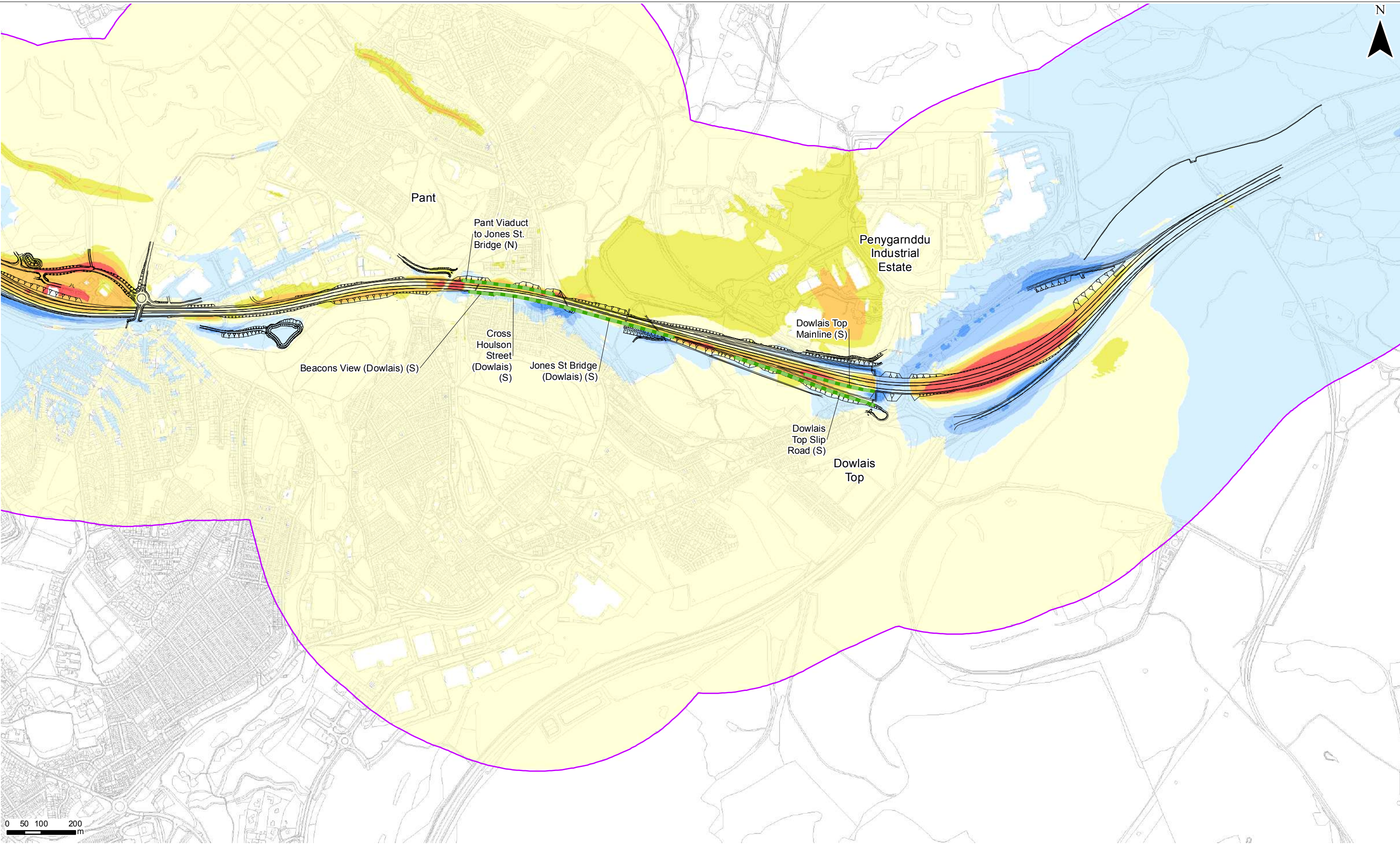
- Negligible decrease (0 to 2.9)
- No change (0)
- Negligible increase (0 to 2.9)
- Minor increase (3 to 4.9)
- Moderate increase (5 to 9.9)
- Major increase (10+)



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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Noise change contour plan DM (opening year) against DS (future year)	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.5 Sheet 3 of 4	Rev 0



0	MAR18	FINAL	FL	MW	AC	WB	
Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Apprv'd	
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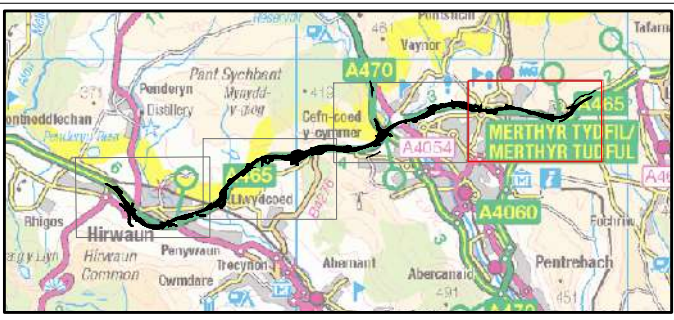
Legend

- Scheme design
- DMRB study area
- Environmental barriers

DMRB long term magnitudes of change in dB

- Major decrease (10+)
- Moderate decrease (5 to 9.9)
- Minor decrease (3.0 to 4.9)

- Negligible decrease (0 to 2.9)
- No change (0)
- Negligible increase (0 to 2.9)
- Minor increase (3 to 4.9)
- Moderate increase (5 to 9.9)
- Major increase (10+)



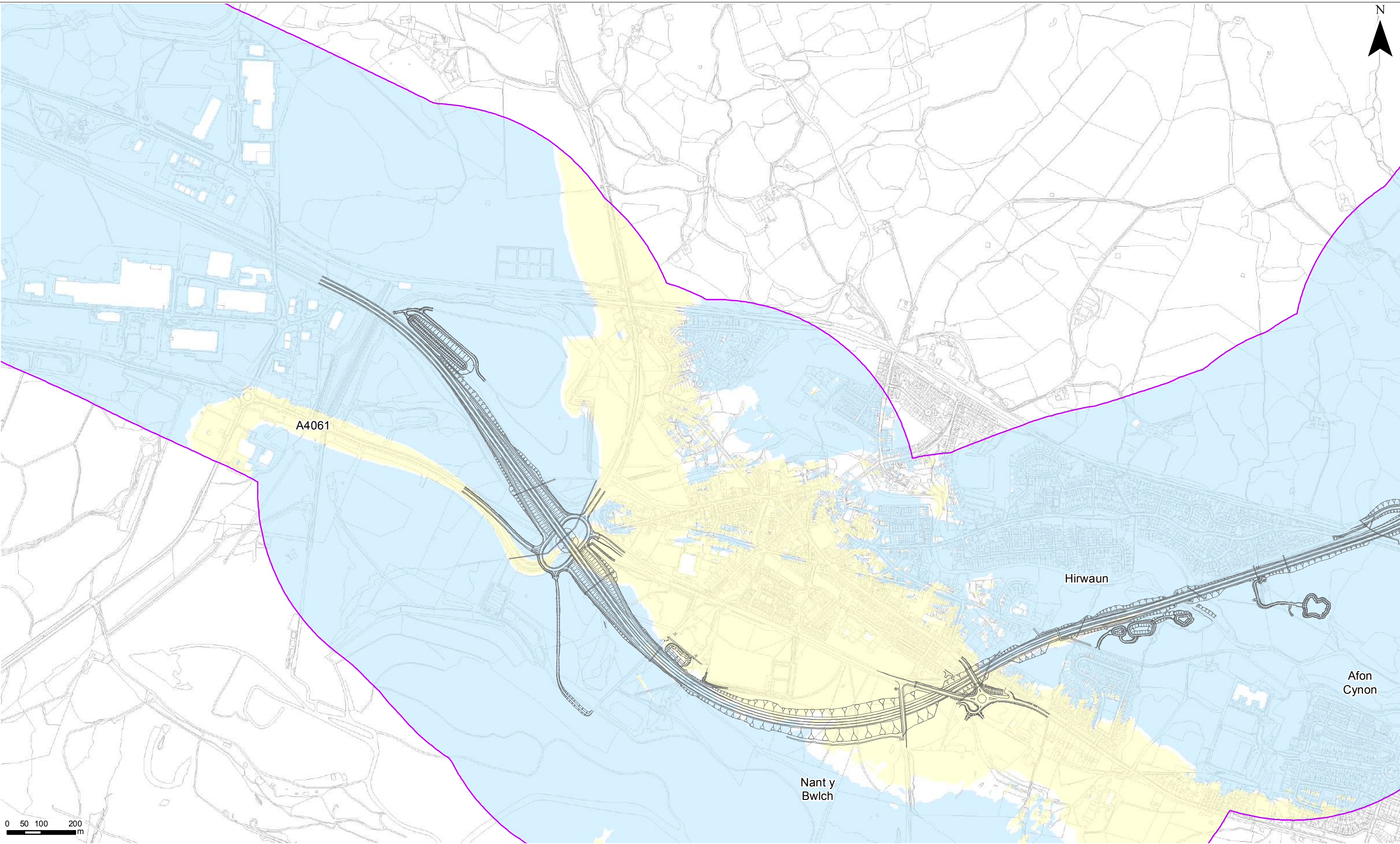


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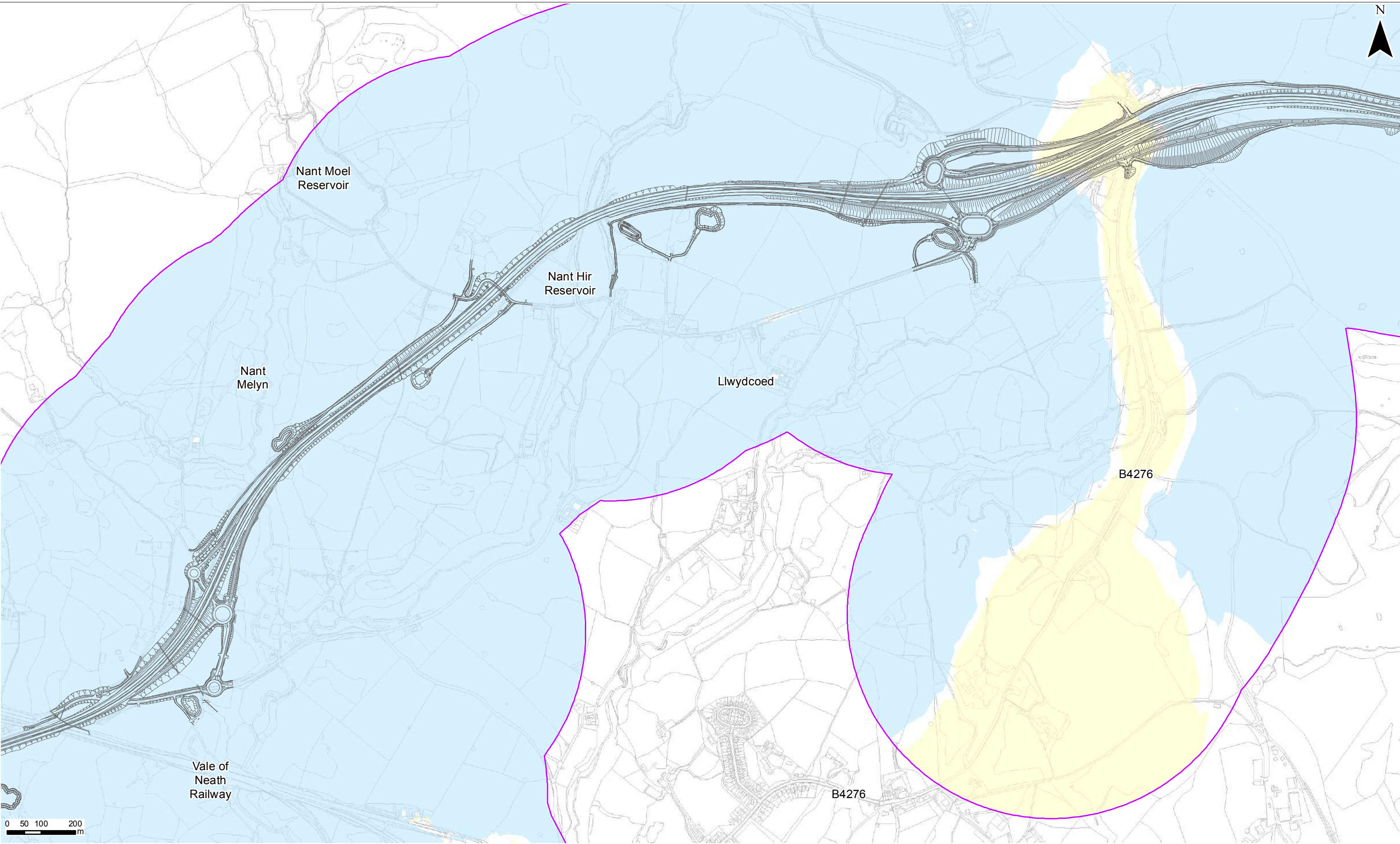
Legend
— Scheme design
□ DMRB study area
DMRB long term magnitudes of change in dB
■ Major decrease (10+)
■ Moderate decrease (5 to 9.9)
■ Minor decrease (3 to 4.9)

■ Negligible decrease (0 to 2.9)
■ No change (0)
■ Negligible increase (0 to 2.9)
■ Minor increase (3.0 to 4.9)
■ Moderate increase (5 to 9.9)
■ Major increase (10+)



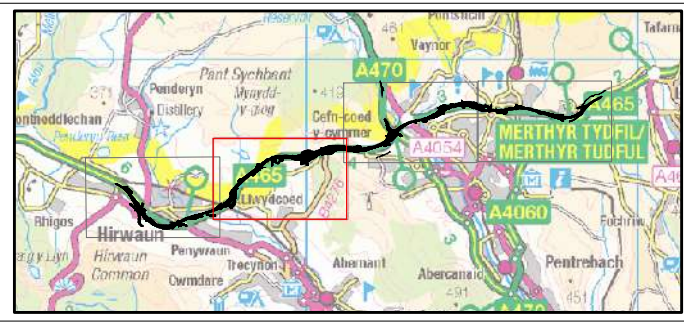

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Title	Noise change contour plan DM (opening year) against DM (future year)	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.6 Sheet 1 of 4	Rev 0



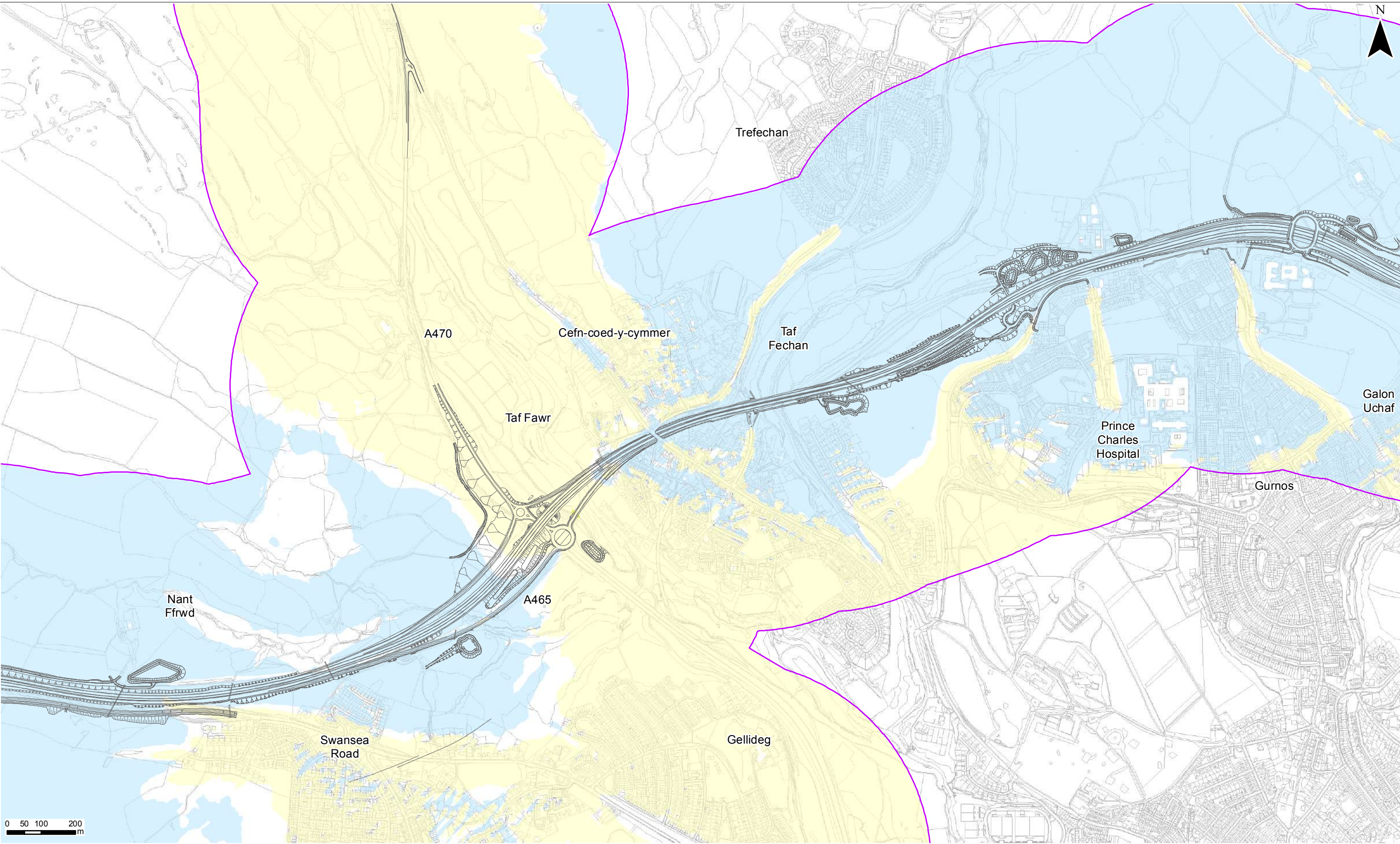
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Legend
— Scheme design
□ DMRB study area
DMRB long term magnitudes of change in dB
Major decrease (10+)
Moderate decrease (5 to 9.9)
Minor decrease (3 to 4.9)
Negligible decrease (0 to 2.9)
No change (0)
Negligible increase (0 to 2.9)
Minor increase (3.0 to 4.9)
Moderate increase (5 to 9.9)
Major increase (10+)



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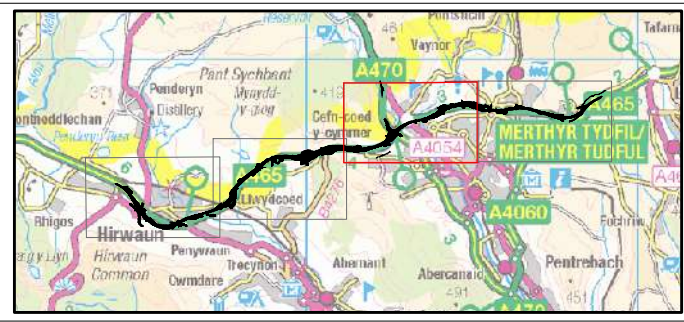
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Title	Noise change contour plan DM (opening year) against DM (future year)	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.6 Sheet 2 of 4	Rev 0



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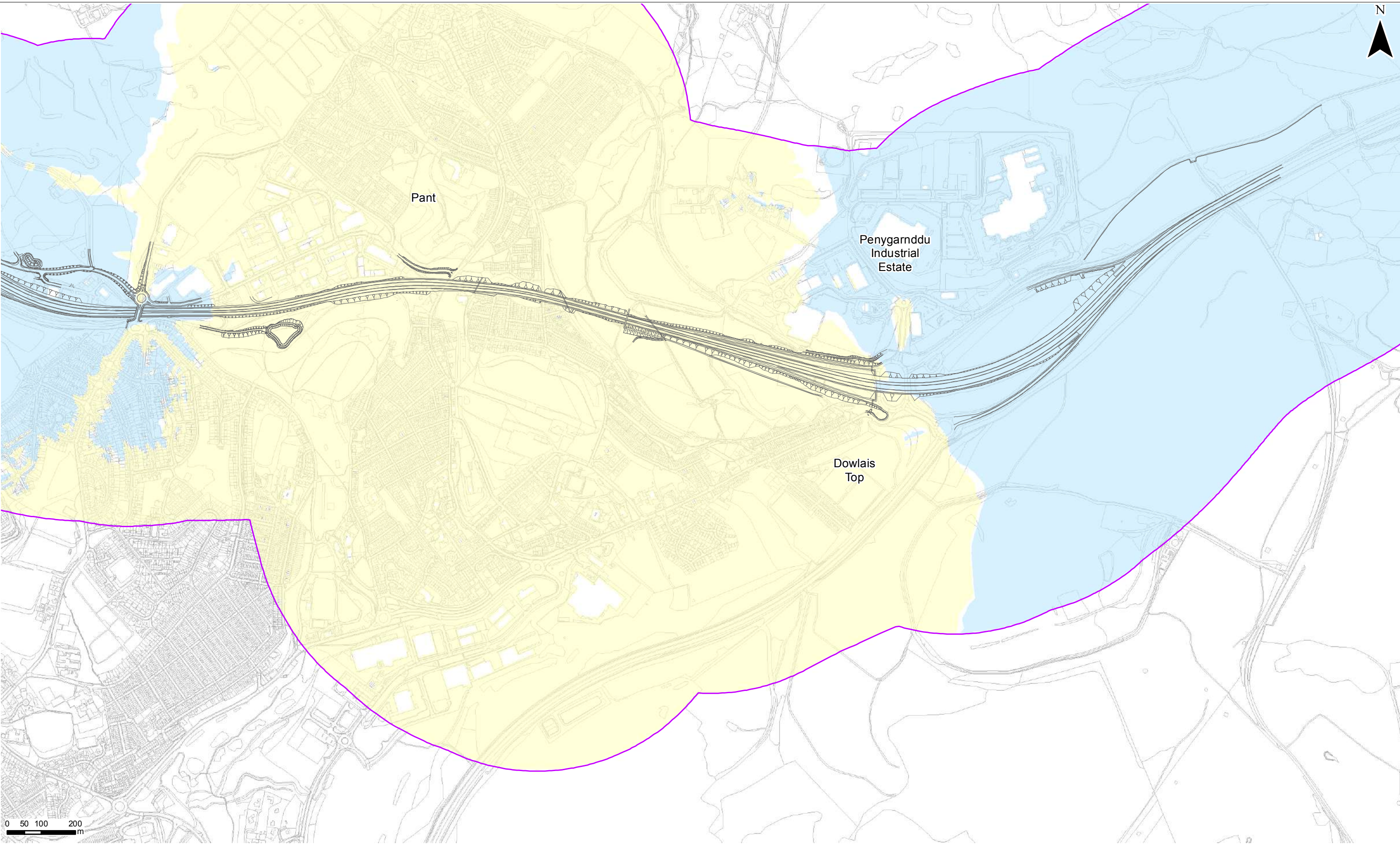
Legend
— Scheme design
□ DMRB study area
DMRB long term magnitudes of change in dB
Major decrease (10+)
Moderate decrease (5 to 9.9)
Minor decrease (3 to 4.9)

Negligible decrease (0 to 2.9)
No change (0)
Negligible increase (0 to 2.9)
Minor increase (3.0 to 4.9)
Moderate increase (5 to 9.9)
Major increase (10+)



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Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.6 Sheet 3 of 4	Rev 0



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Legend

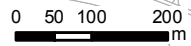
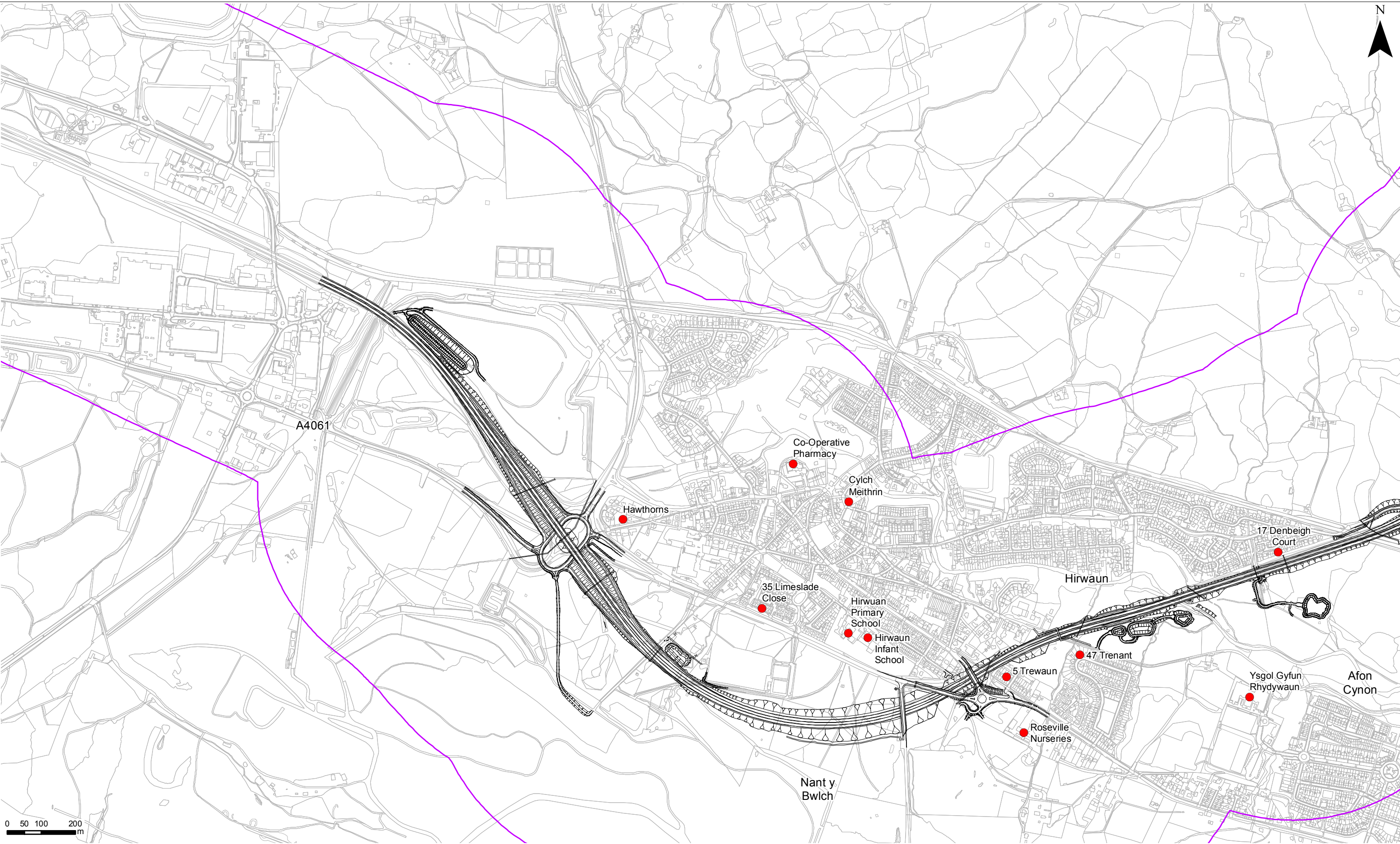
— Scheme design

□ DMRB study area

DMRB long term magnitudes of change in dB

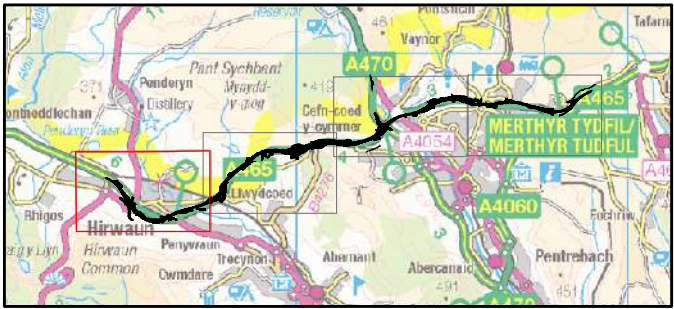
Major decrease (10+)	Negligible decrease (0 to 2.9)
Moderate decrease (5 to 9.9)	No change (0)
Minor decrease (3 to 4.9)	Negligible increase (0 to 2.9)
	Minor increase (3.0 to 4.9)
	Moderate increase (5 to 9.9)
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Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.6 Sheet 4 of 4	Rev 0

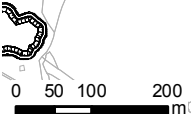
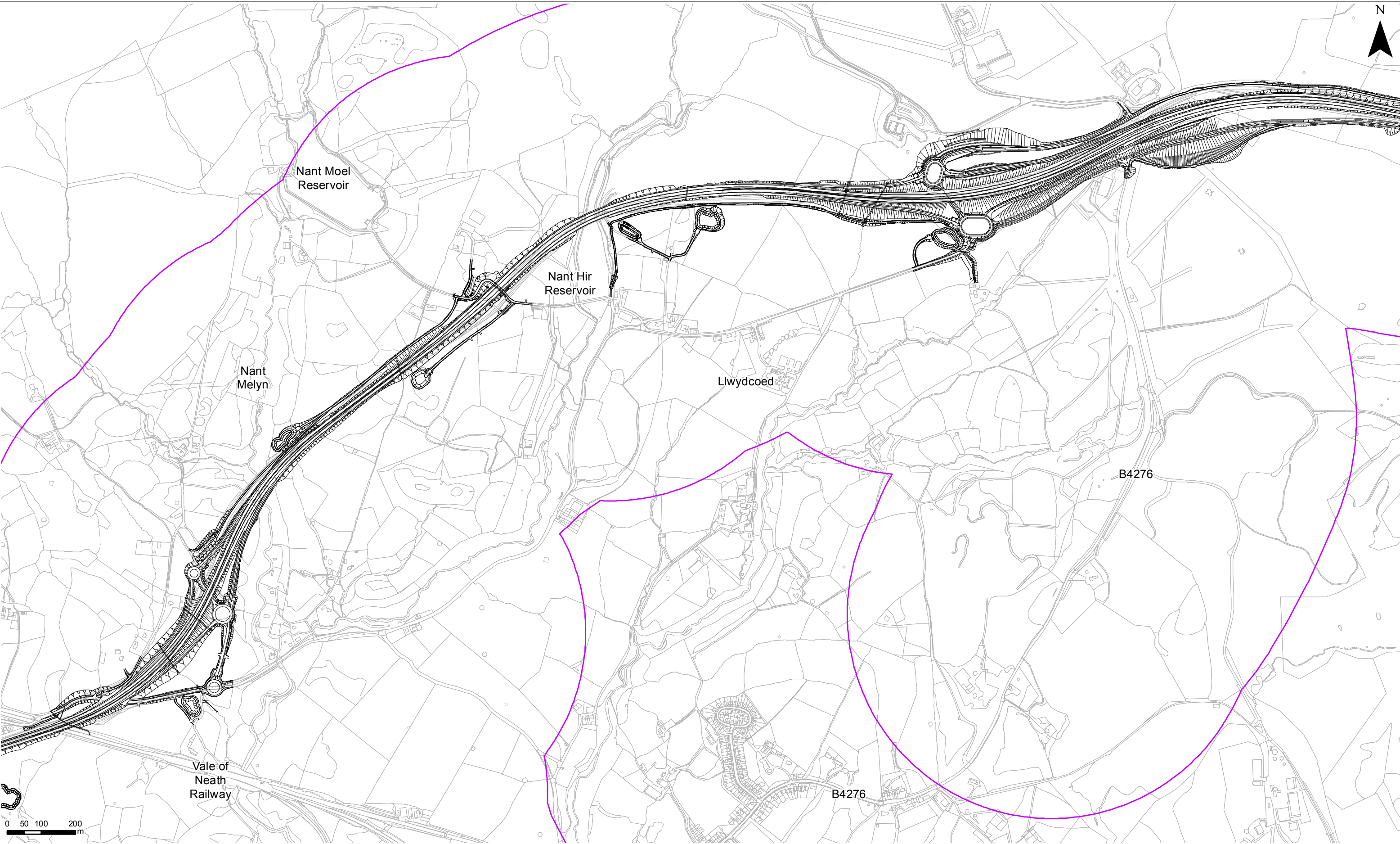


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- Legend**
- Scheme design
 - DMRB study area
 - NAPPA location
 - Sample receptors



Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Operational sample receptors and NAPPA location	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.7 Sheet 1 of 4	Rev 0

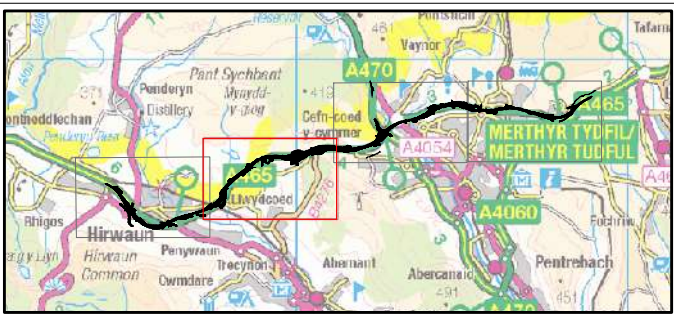


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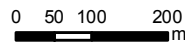
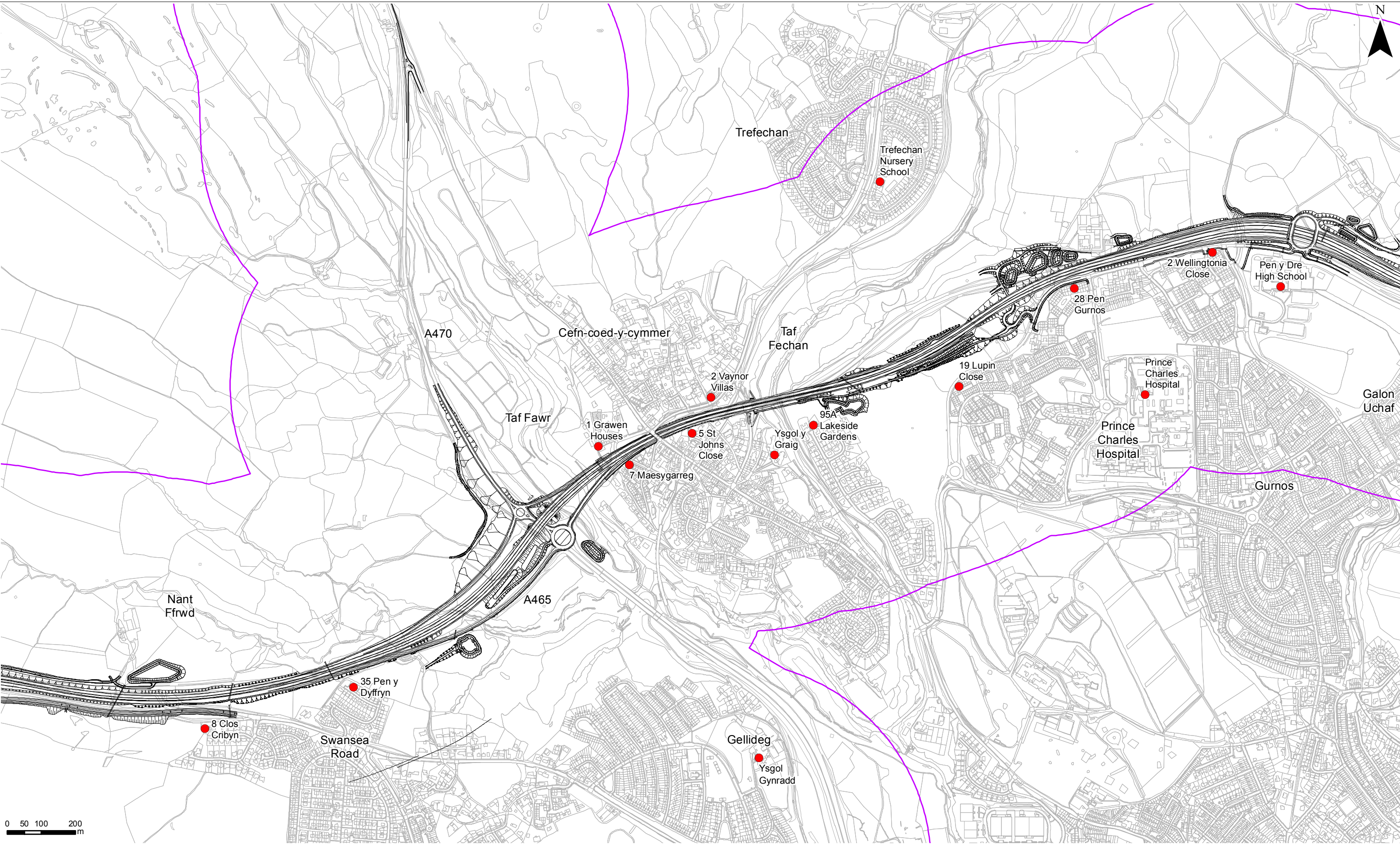
- Legend**
- Scheme design
 - DMRB study area
 - NAPPA location
 - Sample receptors

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Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Operational sample receptors and NAPPA location	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.7 Sheet 2 of 4	Rev 0

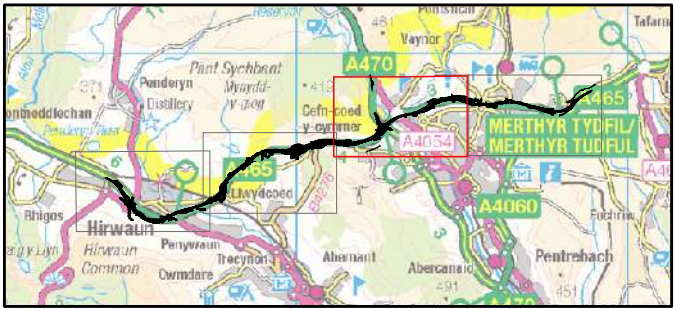


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- Legend**
- Scheme design
 - DMRB study area
 - NAPPA location
 - Sample receptors



Status	FINAL	
Project	A465 HEADS OF THE VALLEYS SECTIONS 5 AND 6 DOWLAIS TOP TO HIRWAUN	
Title	Operational sample receptors and NAPPA location	
Scale	1:10,000 @A3	DO NOT SCALE
Drawing No.	Figure 14.7 Sheet 3 of 4	Rev 0

