UNIVERSITY OF LEEDS

Technical Annex

Social Assessment of Section 3 of the A465 Heads of the Valleys Road: Brynmawr to Tredegar

Karen Lucas, Ian Philips, John Nellthorp, Louise Reardon, James Laird, Ersilia Verlinghieri

Institute for Transport Studies

Project funded by: Welsh Government

INSTITUTE FOR TRANSPORT STUDIES

DOCUMENT CONTROL INFORMATION

Title	Technical Annex Social Assessment Section 3 of the A465 Heads of the Valleys Road: Brynmawr to Tredegar
Authors	Karen Lucas, Ian Philips, John Nellthorp, Louise Reardon, James Laird, Ersilia Verlinghieri
Editor	Ian Philips
Version Number	
Date	June 2016
Distribution	ITS
Availability	ITS
File	A465 Technical annexe 290616.docx
Signature	

1 Introduction

1.1 Study aim

The aim of this study is to provide an assessment of the social impacts of upgrade of Section 3 of the A465 Heads of the Valleys Road: Brynmawr to Tredegar. A mixed methods approach to social assessment is used which adapts and builds on methods presented in the UK WebTAG appraisal guidance units 4.1 and 4.2.

This report provides the Technical Annex for the main Social Assessment report. It contains supplementary information and detailed analytical outputs from the quantitative analysis.

1.2 Accompanying documents

This report has the following accompanying sister documents

- Executive summary – a short overview of this report focusing on its main findings.
- Social assessment report – Report on the findings of the social assessment of Section 3 of the A465
- Methodology Annex- describes the development of a methodology for conducting mixed methods social assessments of transport schemes.
- Focus Group Report – detailed narrative commentary of qualitative data gathered in this study.

2 Community profile: Socio-demographic context

This Section contains additional data which was used to summarise the socio-demographic profile of the study area communities in the assessment report.

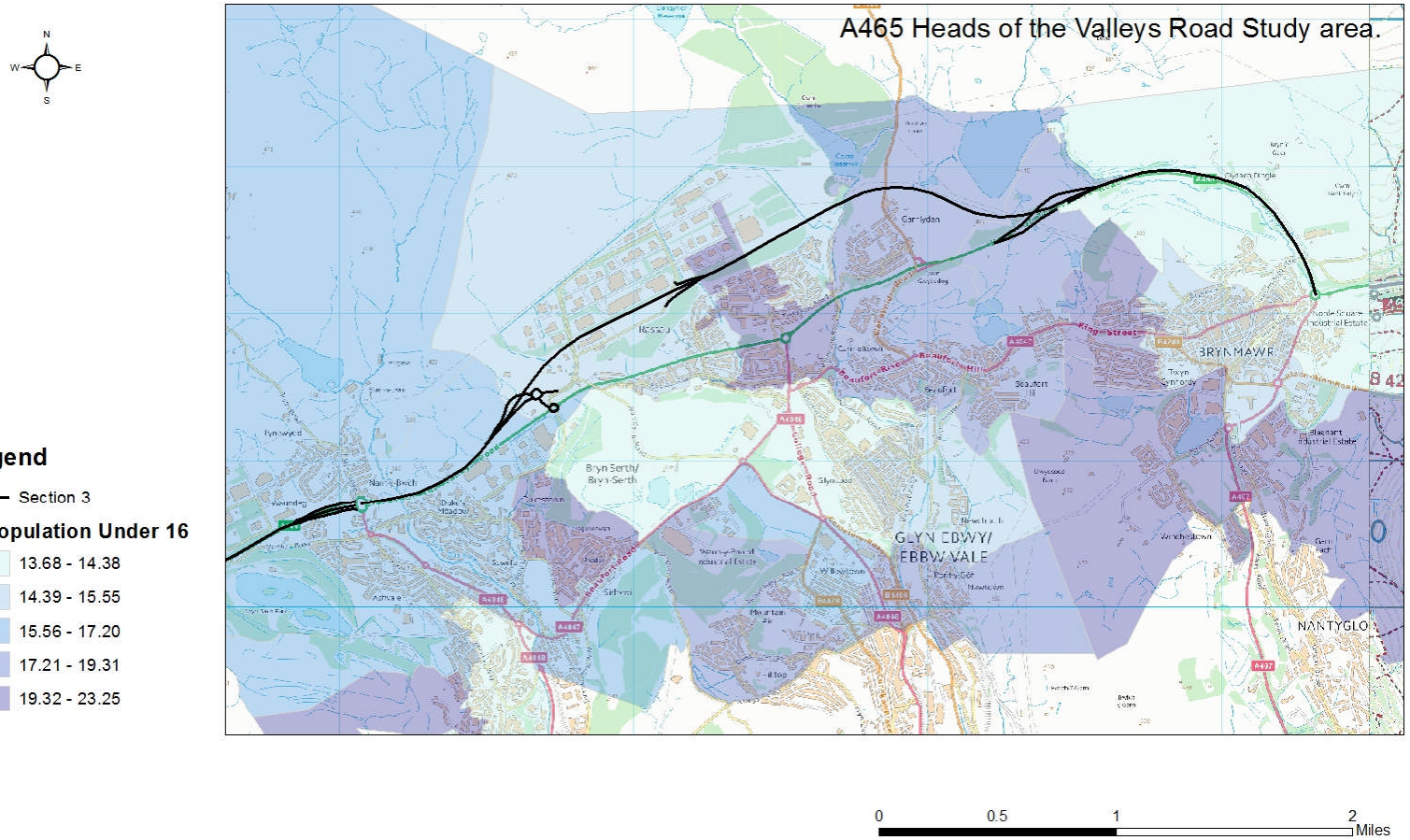

Figure 1 Percentage of the study area population under 16 years old

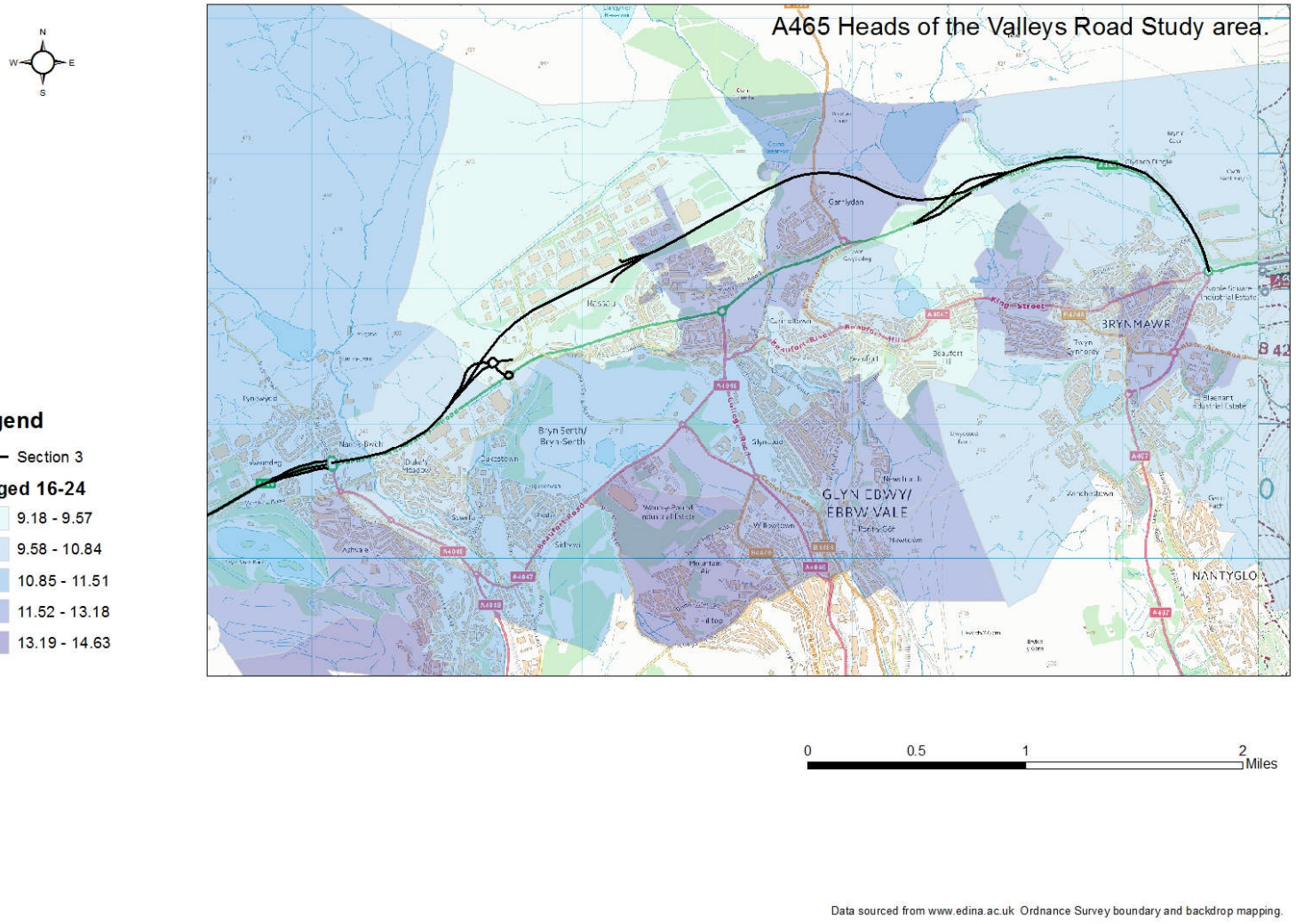

Figure 2 Percentage of the study area population aged 16-24

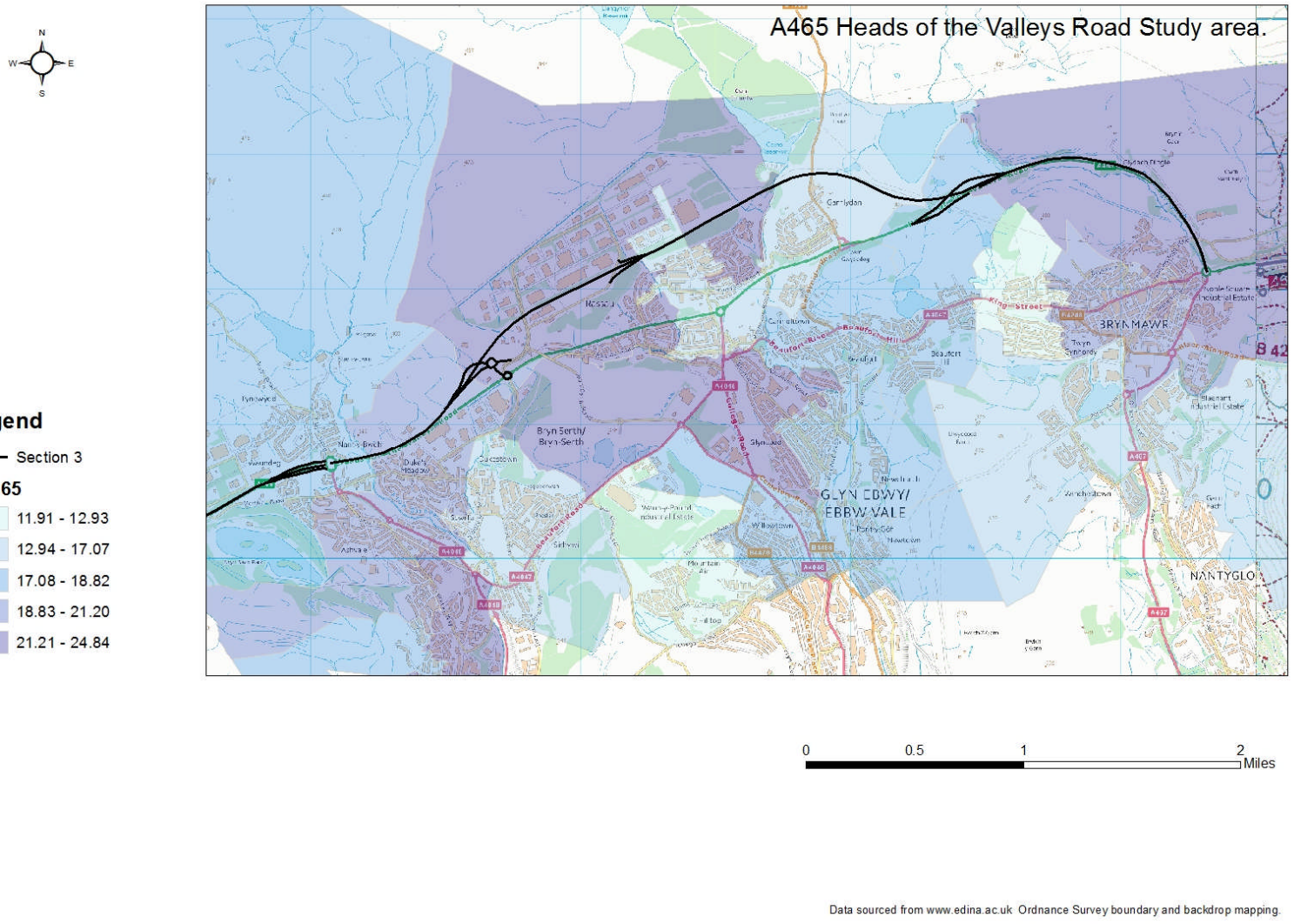

Figure 3 Percentage of study area population over 65

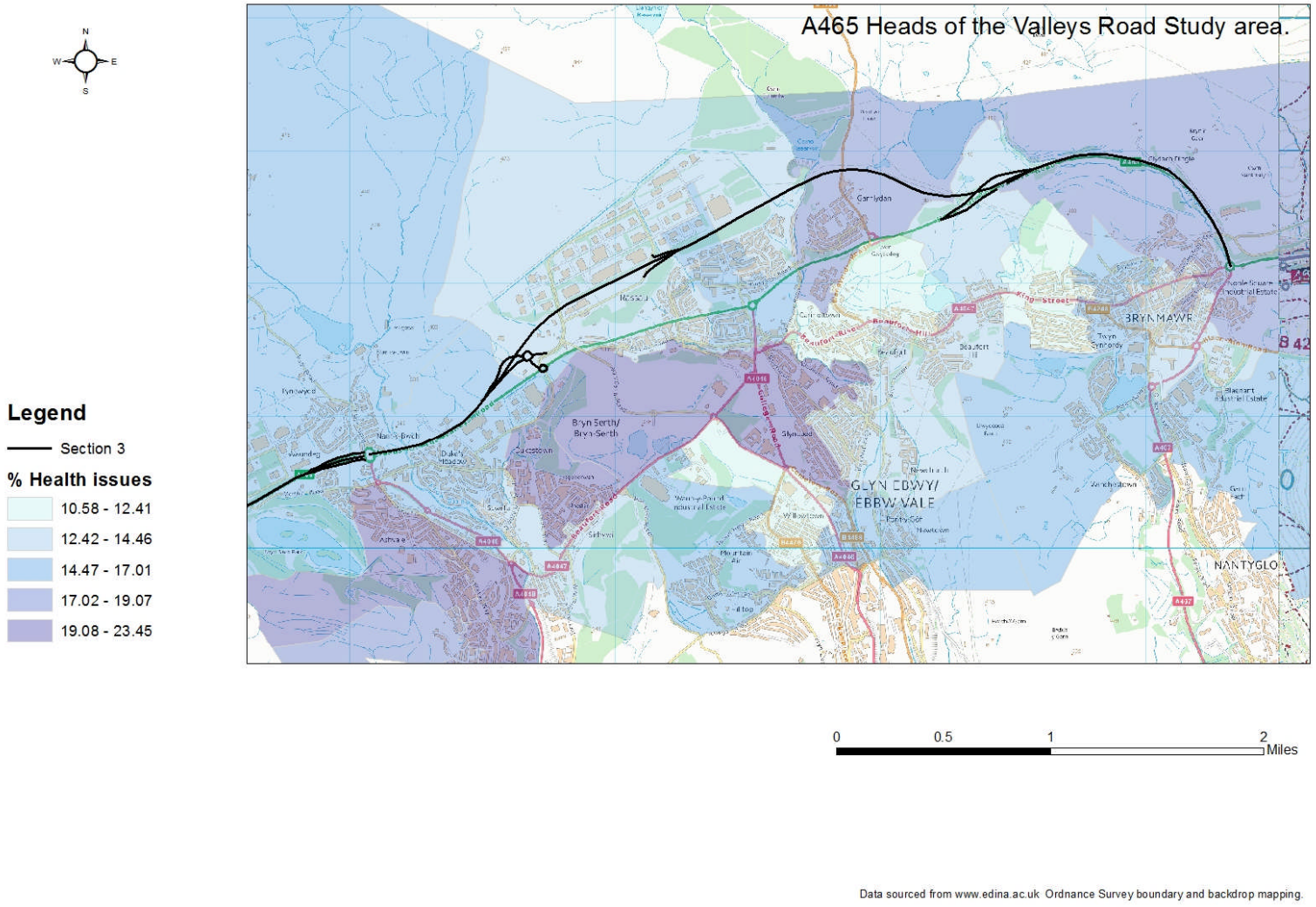

Figure 4 Percentage of the study area population with health issues (health has a large impact on day to day activities)

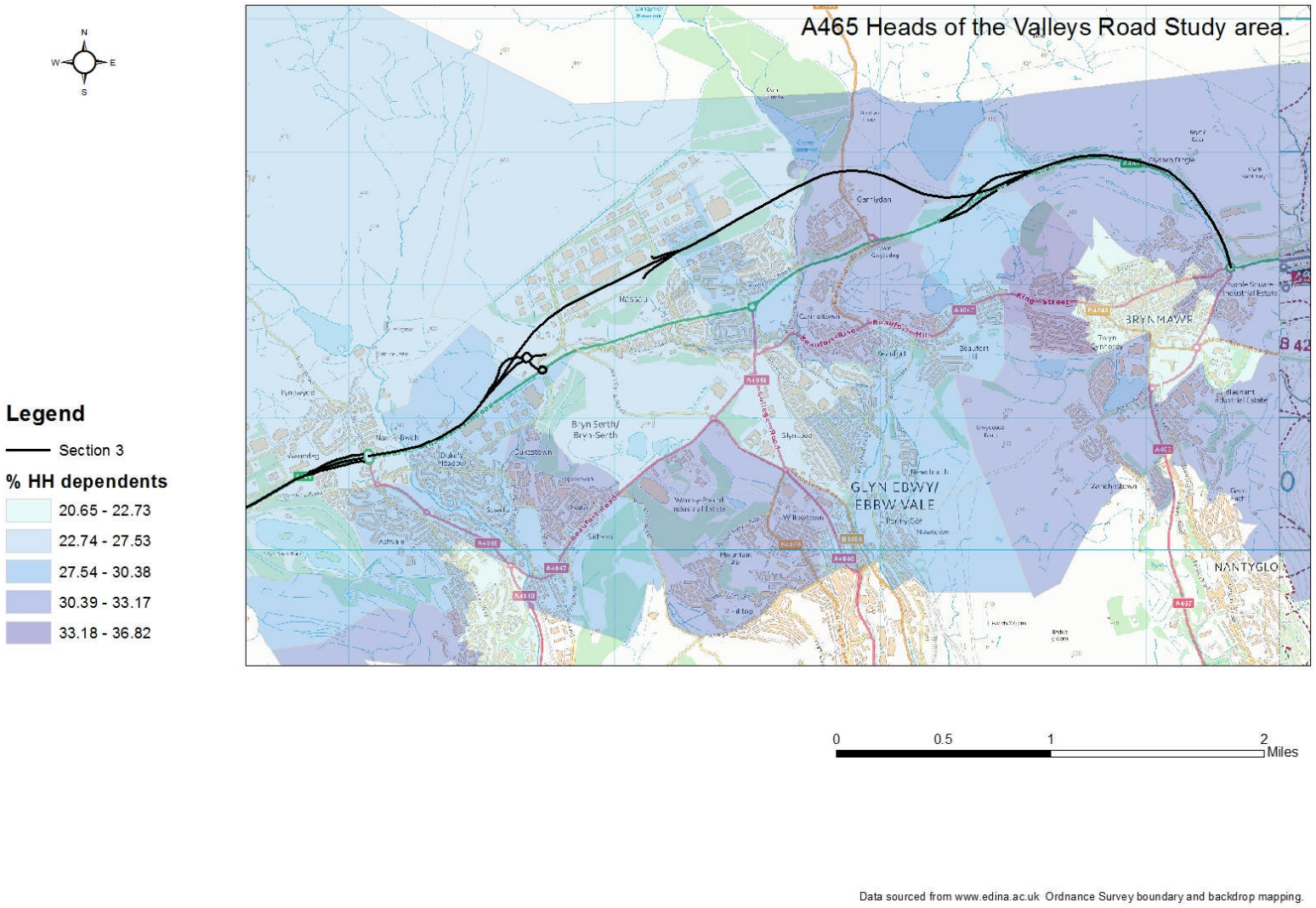

Figure 5 Percentage of households in the study area with dependent children

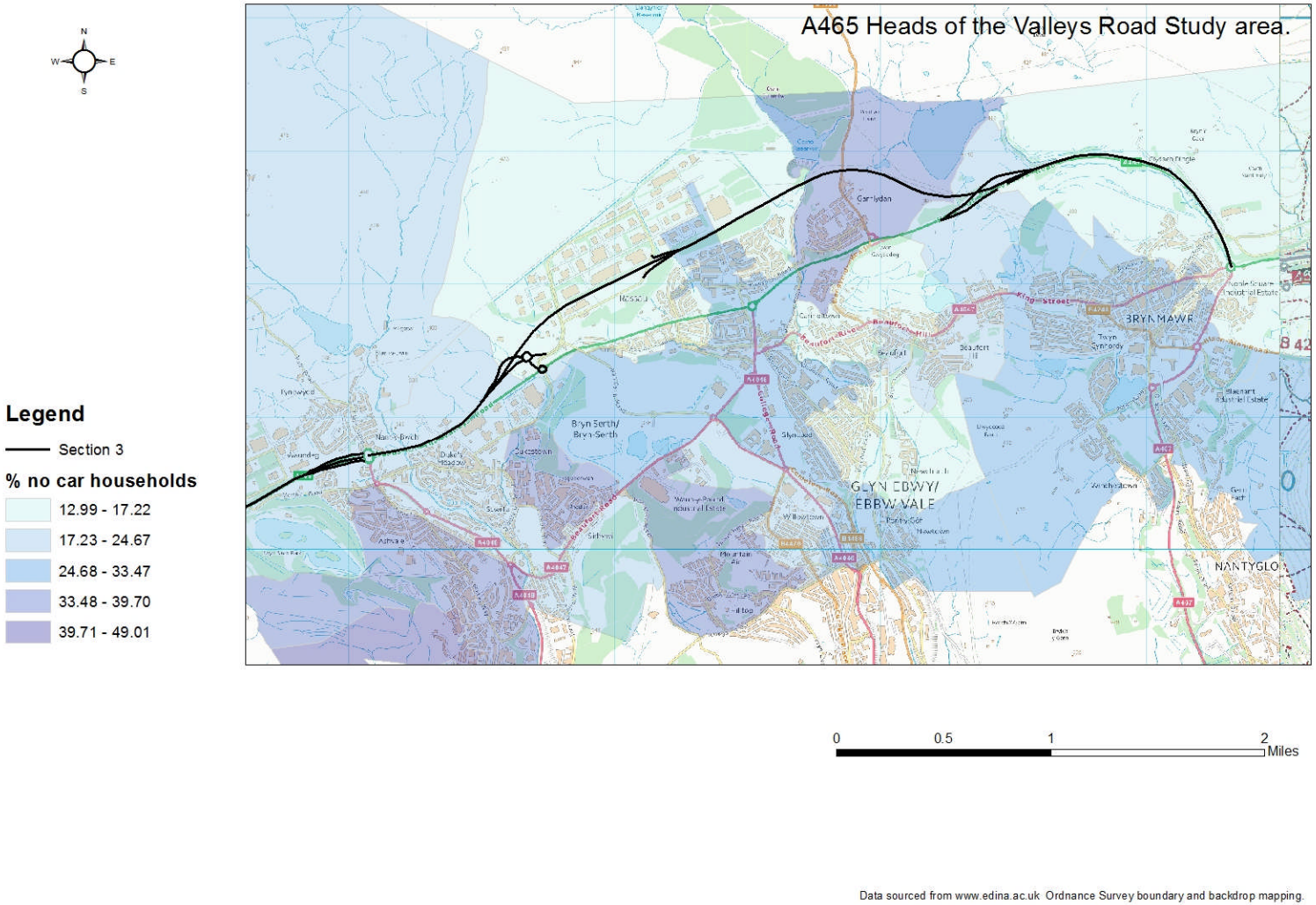

Figure 6 Percentage of households in the study area without access to a car

Figure 7 Photos showing the study area. Top Left. The Venue social club at Garnlydan, top right: housing in Garnlydan, bottom left: Garnlydan football club, bottom right: cycle infrastructure alongside Section 3 at Garnlydan.

Left: Community centre venue for Focus Group.
Below left and Right A4047 through Beaufort.
Narrow A road.

Figure 8 Photos showing the study area: Beaufort.

Figure 9 Photos of the study area: Rassau, top left Rassau Community Centre, top right, bus stop and bridge carrying former A465 which splits top and bottom Rassau,.bottom Left: housing in bottom Rassau. Bottom left: housing in top Rassau.

Figure 10 Top left: vacant industrial land in the study area. Top right: Rassau Industrial Estate, a to let advert, stressing the A465 access. October 2015, bottom left: a view on the A465 from Rassau Industrial Estate. The walking path is visible on the bottom. July 2015. Bottom right: a cyclist on Rassau Road. October 2015

Figure 11 Ebbw Vale town centre (Bethcar Street) showing public art paving and street furniture. A number of shops are disused.

3 Scoping the impacts

Table 1 is also shown in the Social assessment report.

Table 1 Scoping the impacts on resident population groups. Grey; not applicable, red expected disbenefit, green expected benefits, amber benefits unclear

Special interest person groups vs impact domains			% of Population	Local user Benefits	Noise	Air quality	Accidents and Security	Severance	Accessibility	Affordability
Resident population in the impact area	WIMD quintiles	1	45%							
		2	20%							
		3	21%							
		4	13%							
		5	0							
	Children (<16)		18%							
	Young people (16-24)		12%							

	Older people (>65)	19%							
	People with a disability	16%							
	Black Minority Ethnic	0%							
	No car households	28%							
	Households with dependent children	29%							

N.B. Children are those under 16.

4 Local user benefits

No supplementary information was required.

5 Accessibility

Table 2 Summary of accessibility impacts

Social group and amenities indicators			**Population**	**Accessibility**
Resident population in the impact area	Income distribution quintiles WIMD QUINTILE	1	45%	Less likely to benefit from car travel time savings, may be vulnerable to declining Public Transport service[1].
		2	20%	Less likely to benefit from car travel time savings, may be vulnerable to declining Public Transport service
		3	21%	More likely than 2 to benefit from travel time savings by car
		4	13%	More likely than 3 to benefit from travel time savings by car
		5	0	Most likely to benefit from travel time savings by car
	Children (<16)		18%	More likely to have to rely on Public Transport for education

[1] See Social assessment report: Car accessibility is increased relative to bus due to travel time savings achieved for car trips. This may jeopardise the viability of public transport services in the area if bus patronage falls as a result. This would be of disbenefit to groups which are reliant on bus services such as households without cars and people unable or unwilling to drive.

	Young people (Age 16-24	12%	More likely to have to rely on Public Transport for further/higher education or employment due to high insurance costs
	Older people (Over 65)	19%	More likely to have to rely on Public Transport
	People with a disability (Health greatly affects day to day life)	16%	Less likely to benefit from car travel time savings, may be vulnerable to declining Public Transport service
	Black Minority Ethnic	0%	
	No car households	28%	Unlikely to benefit from car travel time savings, may be vulnerable to declining Public Transport service. Suppressed travel demand observed
	Households with dependent children	29%	More likely to have to rely on Public Transport for education
	Population in the local study area	34361	

5.1 3.1 Accessibility maps

The maps are taken from the traffic forecasting report. They relate to travel by car and were produced using Accession software.

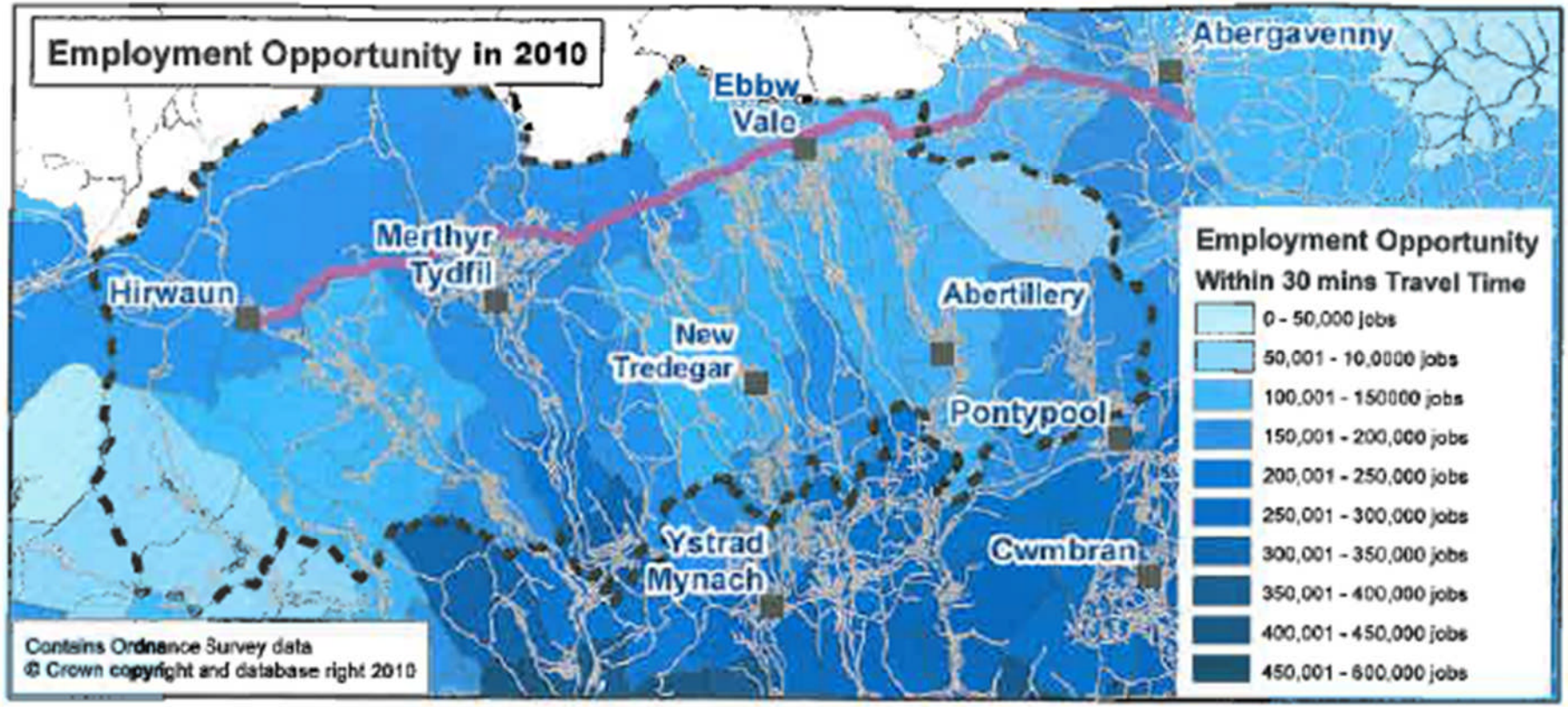

Figure 12 Accessibility Map 1: Access to Employment Opportunity in 2010. Show the jobs available to residents with a 30 minute travel time threshold

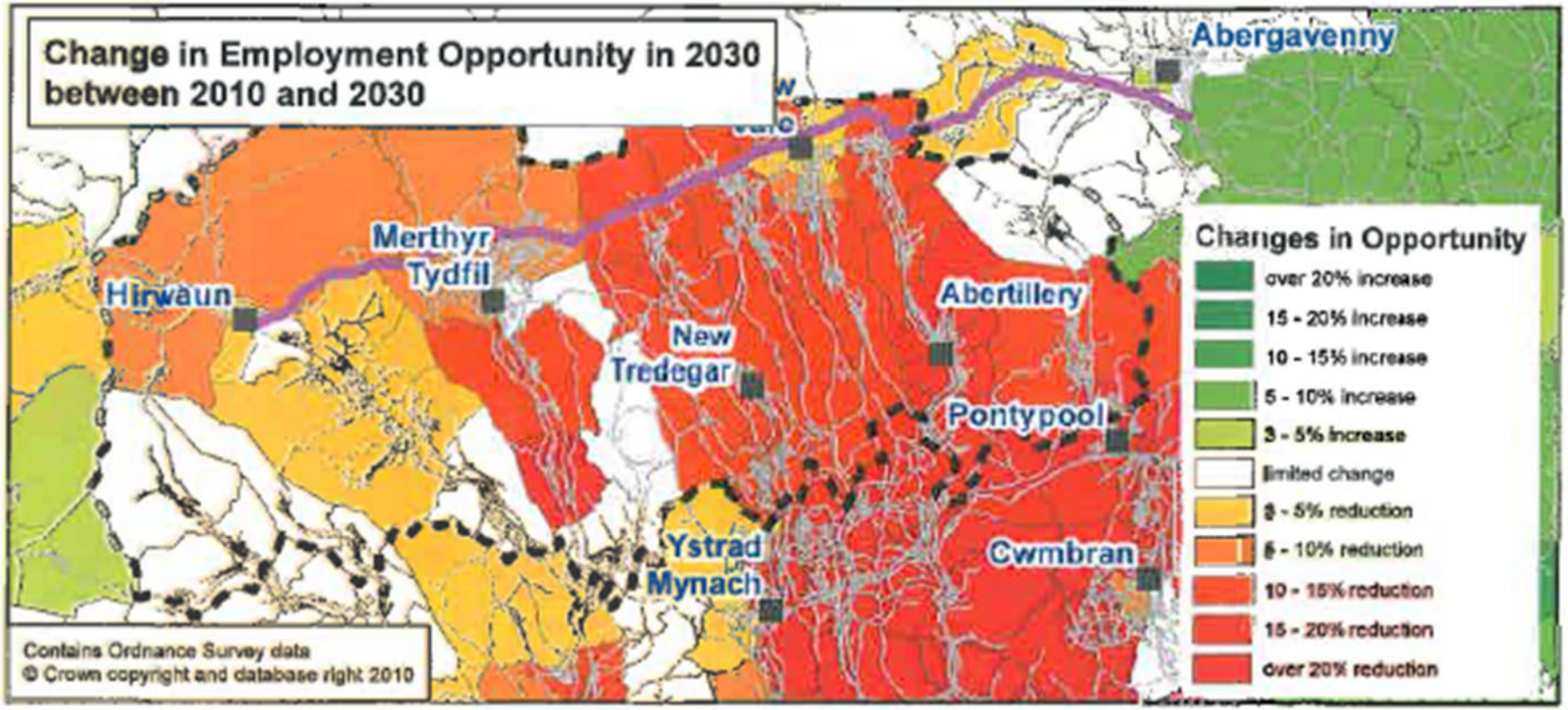

Figure 13 Accessibility Map 2: Forecast change in Employment Opportunity between 2010 and 2030. 30 minute catchment assumed.

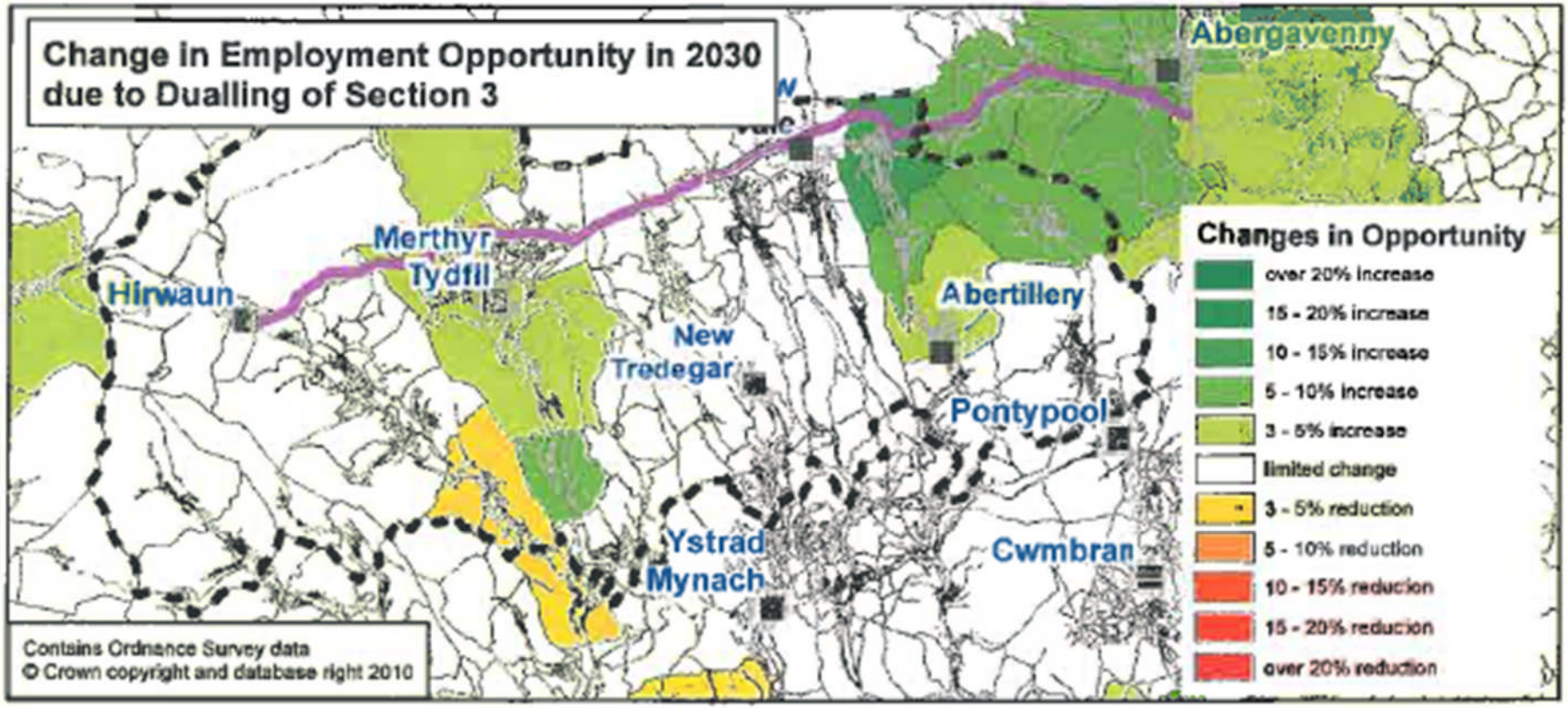

Figure 14 Accessibility Map 3: Forecast change in Employment Opportunity in 2030 due to Dualling of Section 3. 30 minute catchment assumed.

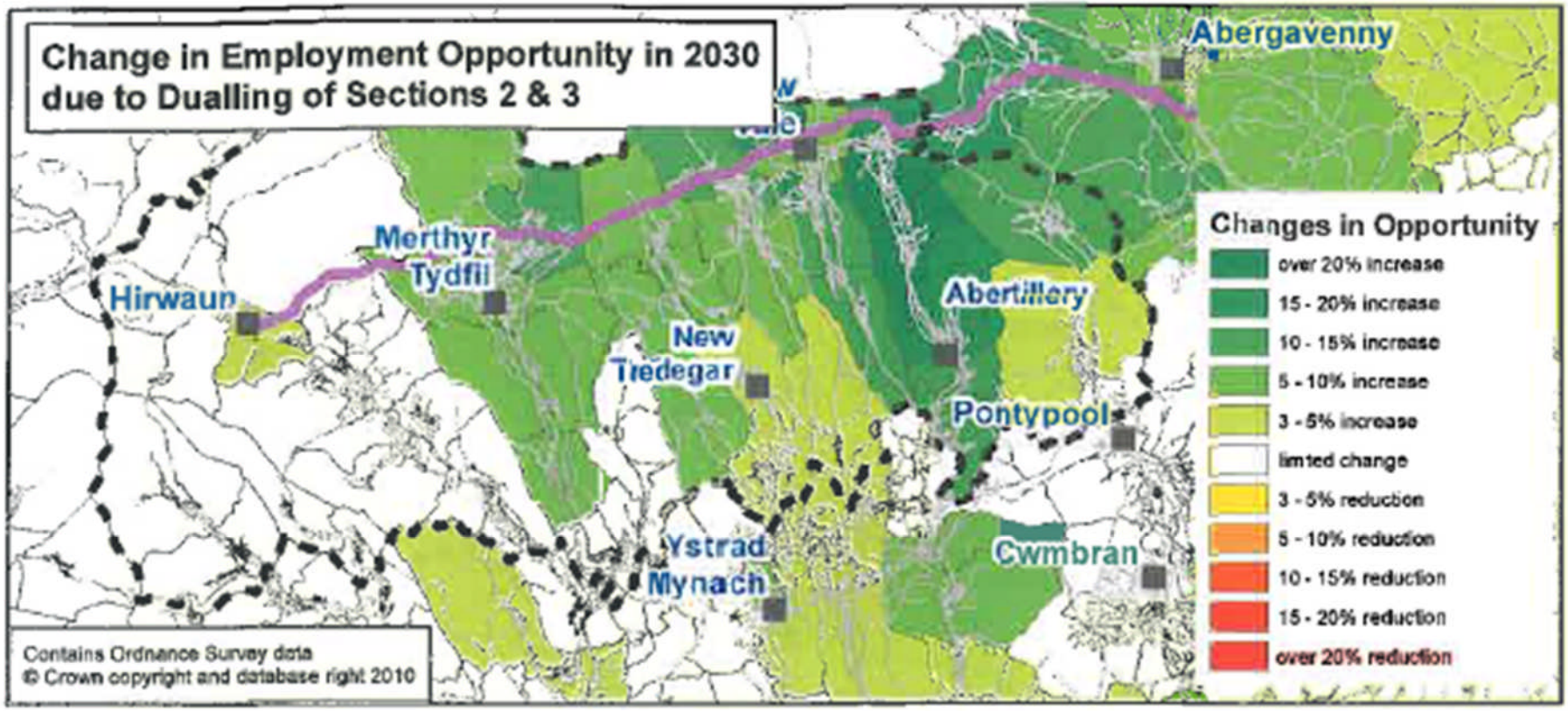

Figure 15 Accessibility Map 4: Forecast change in Employment Opportunity in 2030 due to Dualling of Sections 2 and 3. 30 minute catchment assumed.

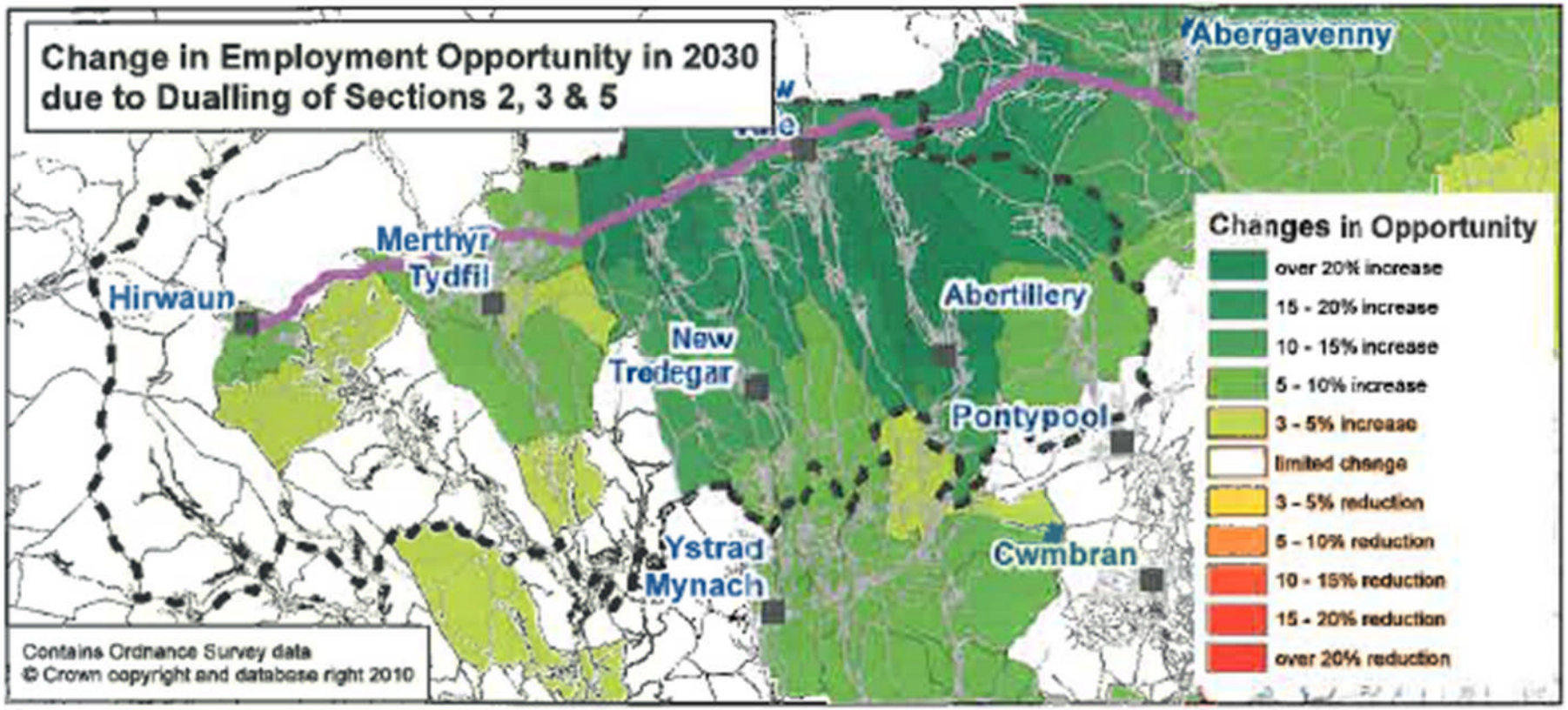

Figure 16 Accessibility Map 5: Forecast change in Employment Opportunity in 2030 due to dualling of Sections 2, 3 and 5. 30 minute catchment assumed.

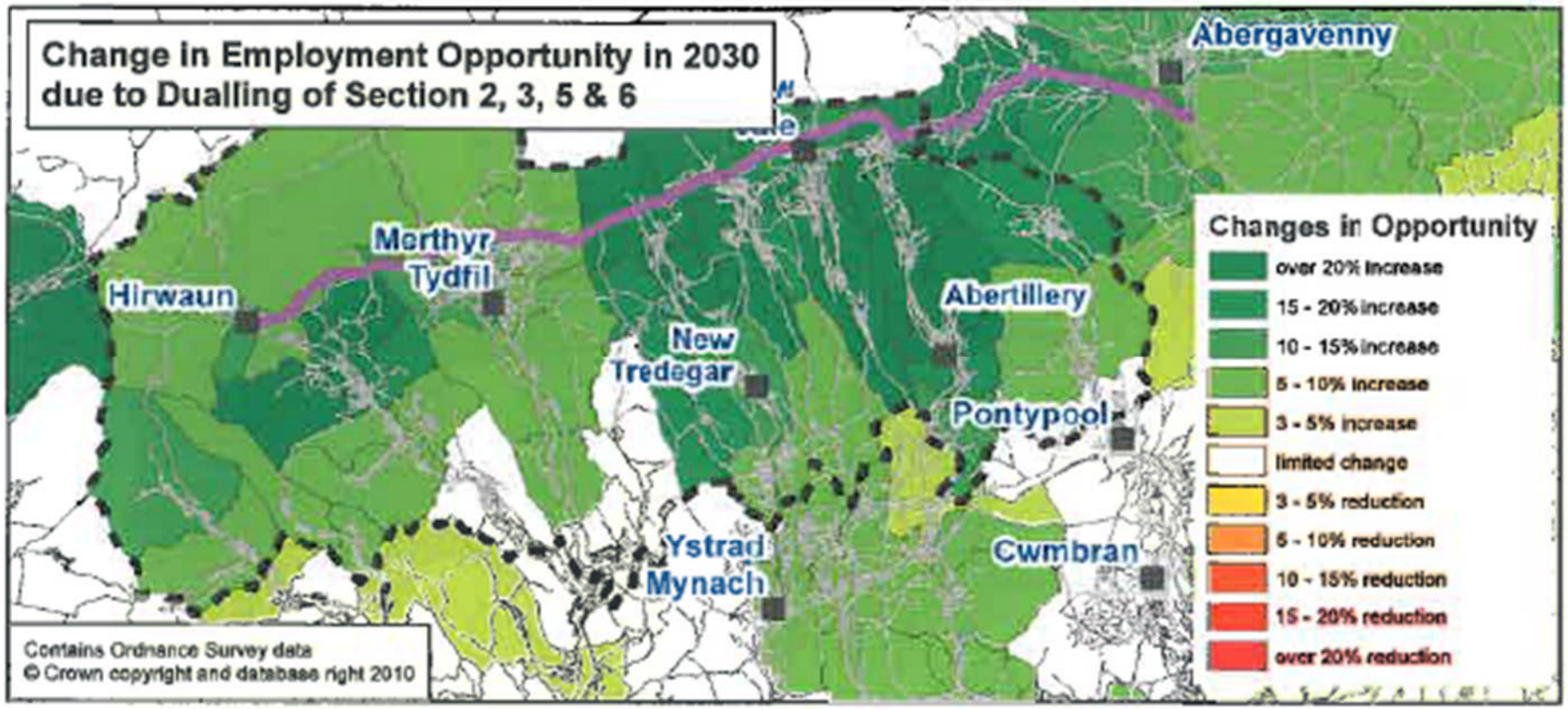

Figure 17 Accessibility Map 6: Forecast change in Employment Opportunity in 2030 due to dualling of Sections 2, 3, 5 and 6. 30 minute catchment assumed.

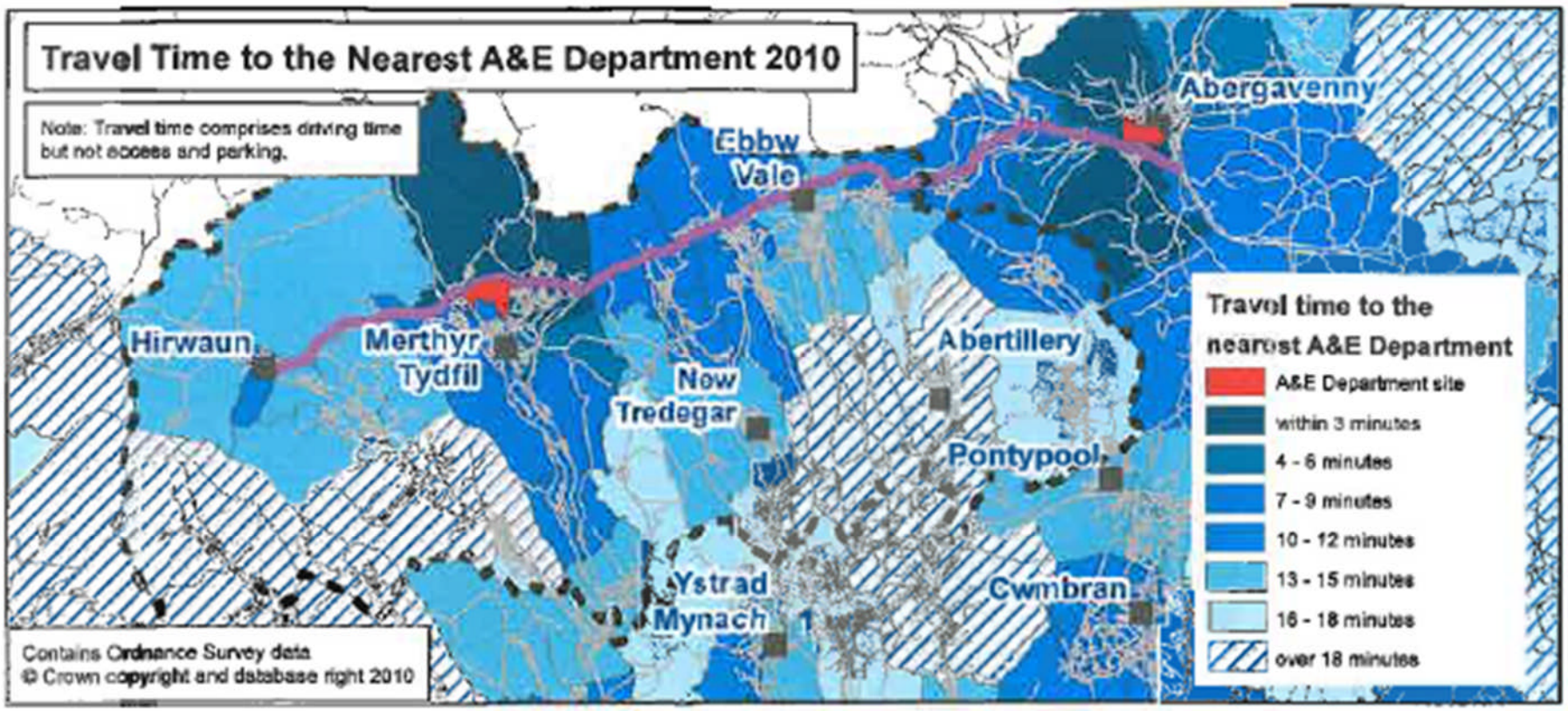

Figure 18 Accessibility Map 7: Travel Time to A&E Departments in 2010.

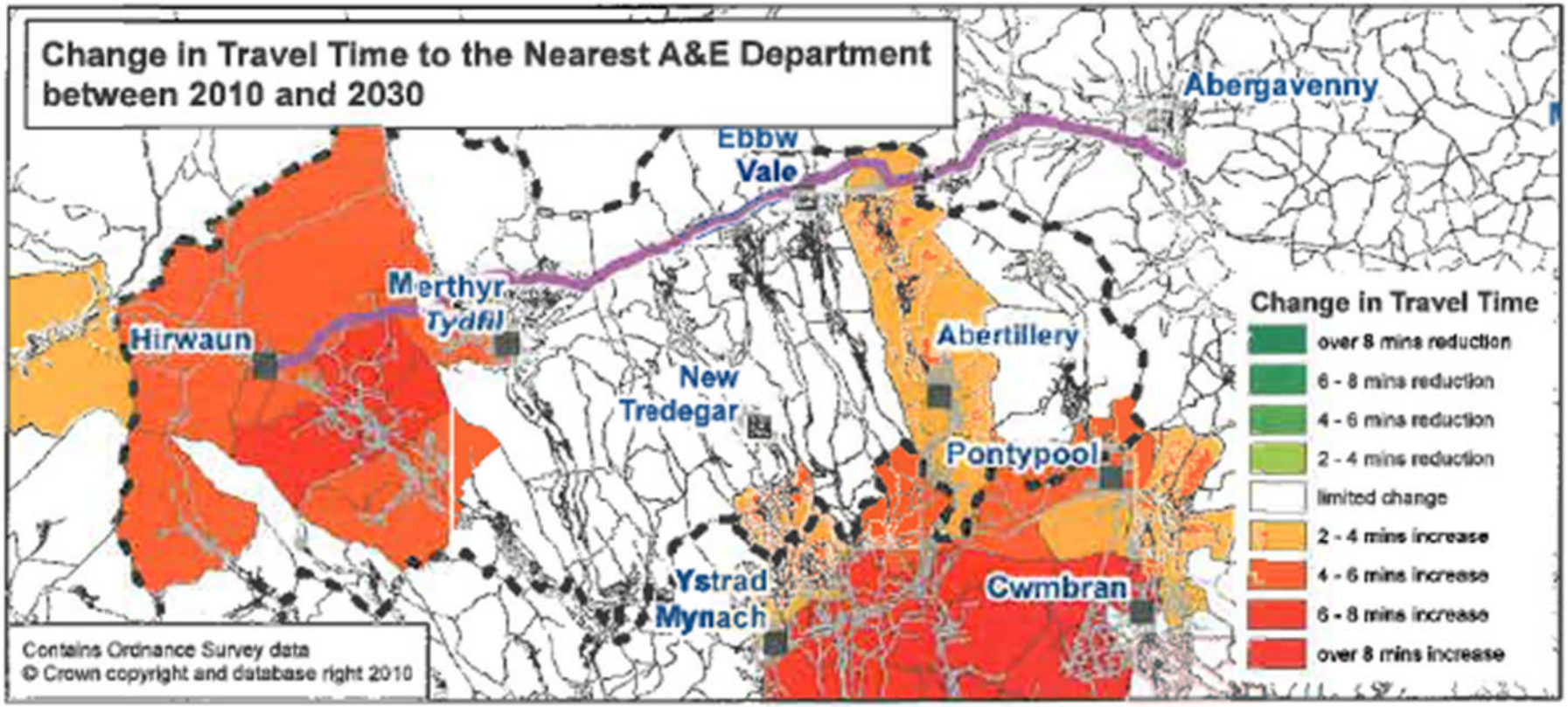

Figure 19 Accessibility Map 8: Forecast change in Travel Time to A&E Department between 2010 and 2030

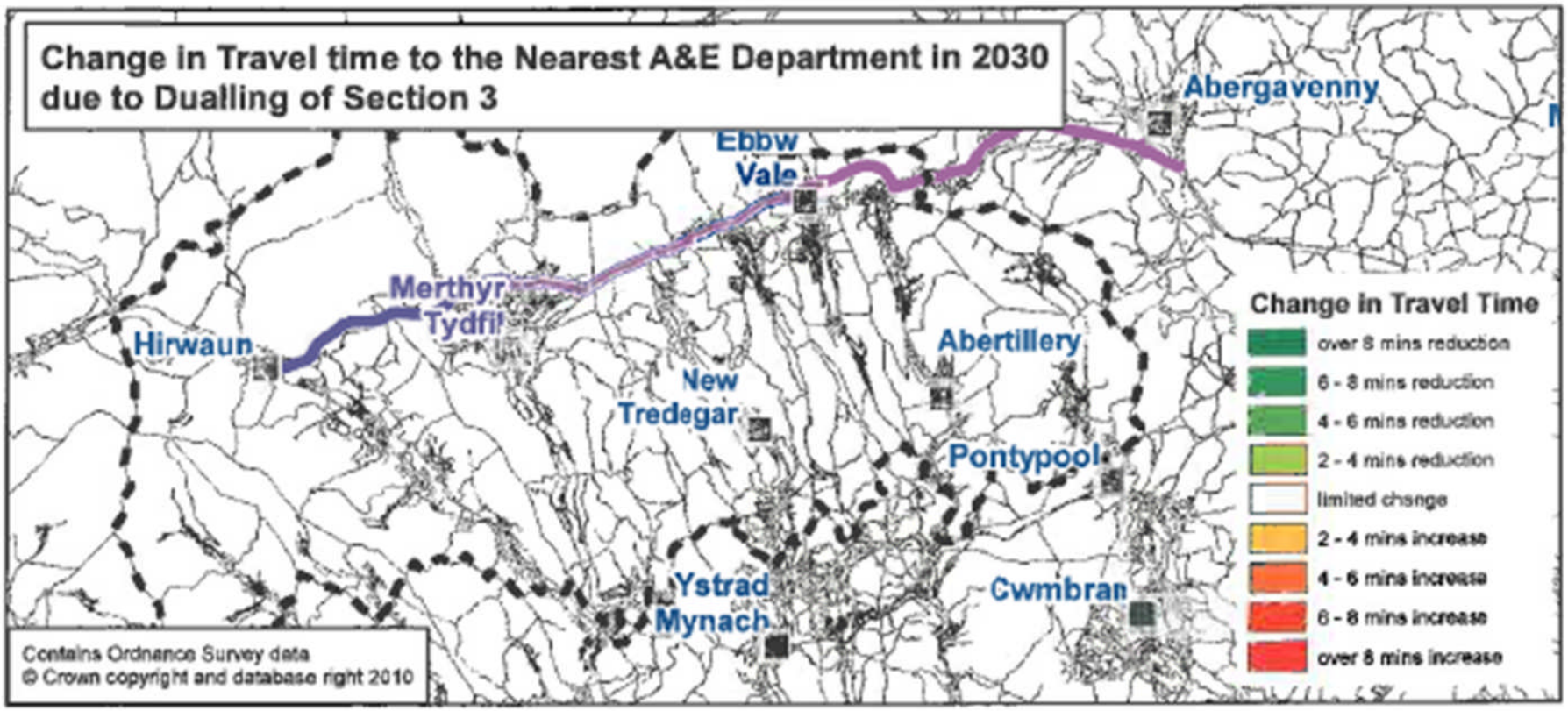

Figure 20 Accessibility Map 9: Forecast change in Travel Time to A&E Department between in 2030 due to dualling of Section 3

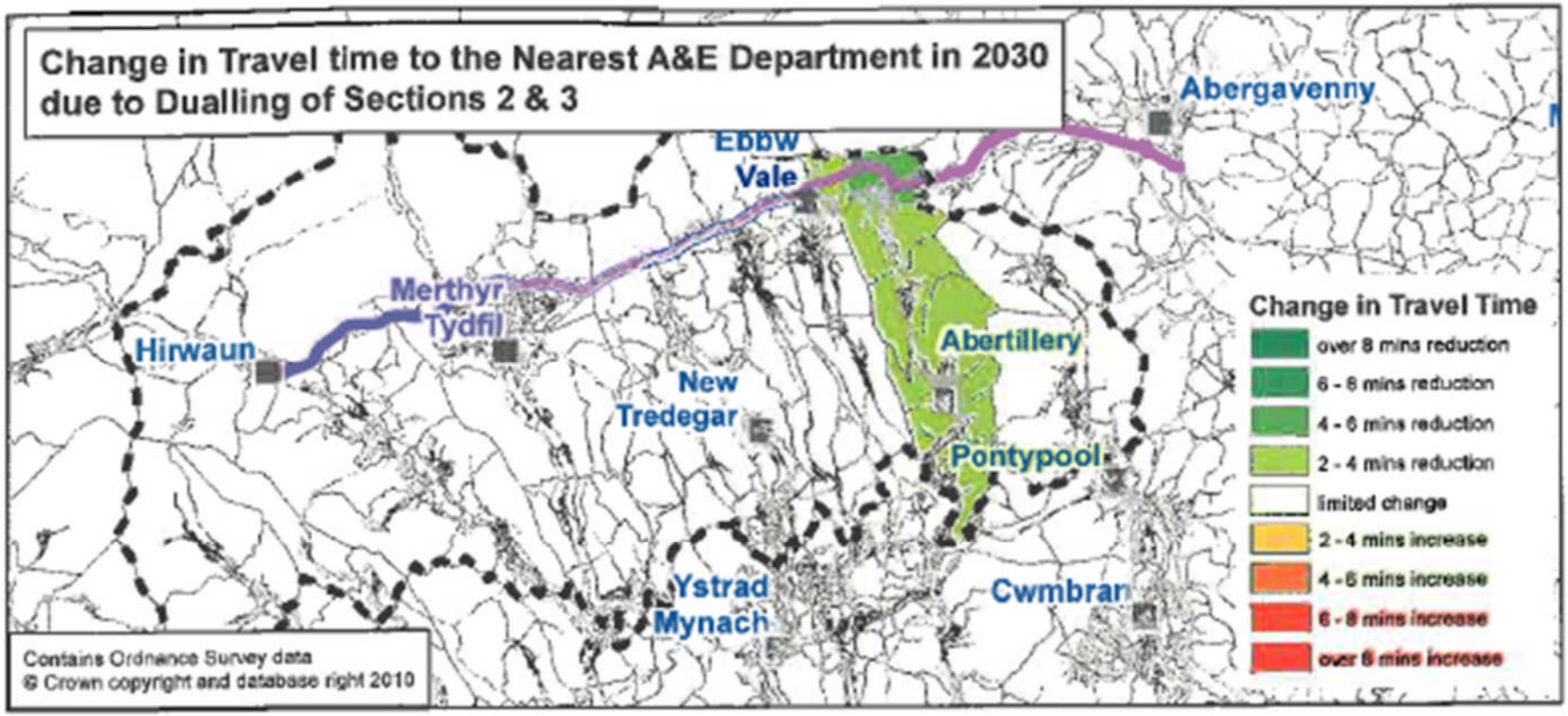

Figure 21 Accessibility Map 10: Forecast change in Travel Time to A&E Department between in 2030 due to dualling of Section 2 and 3

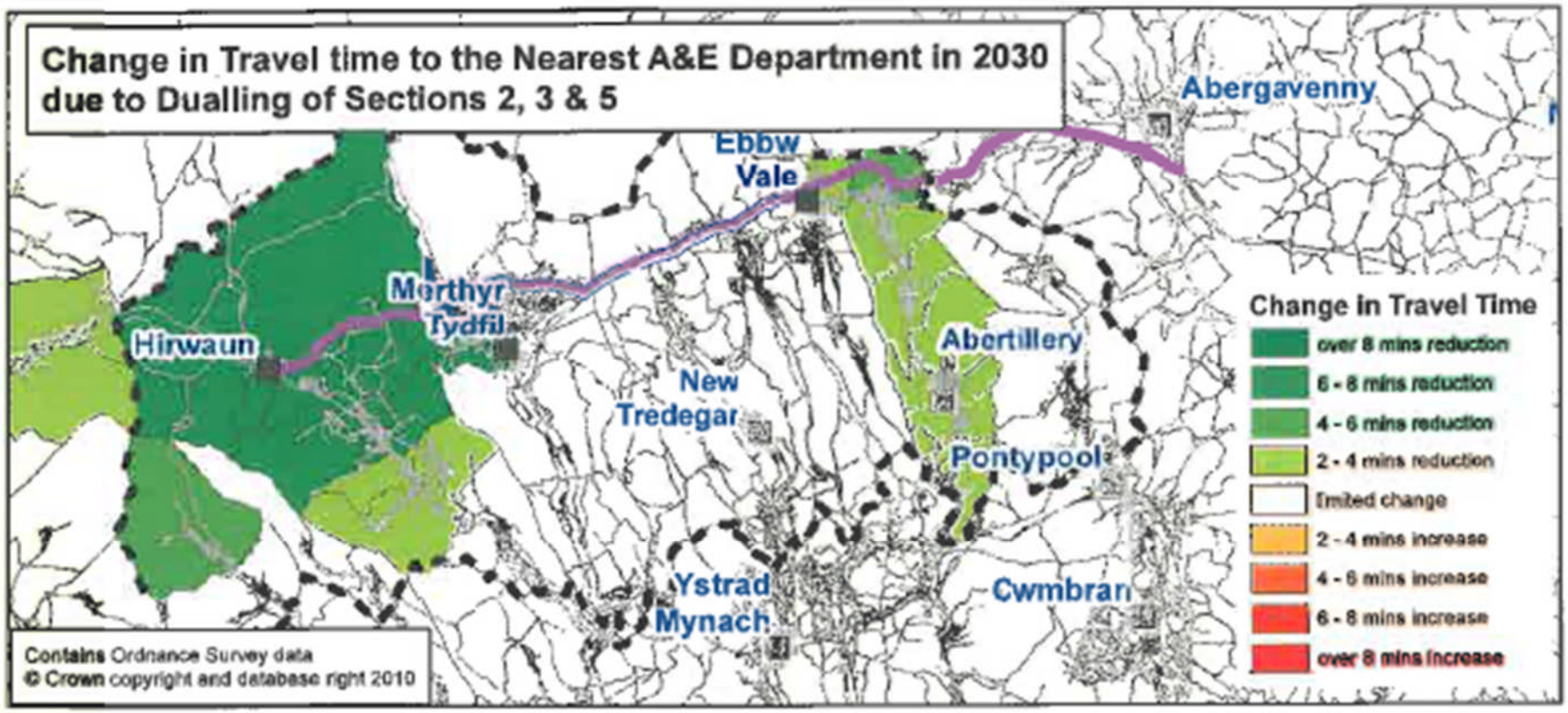

Figure 22 Accessibility Map 11: Forecast change in Travel Time to A&E Department between in 2030 due to dualling of Section 2, 3 and 5

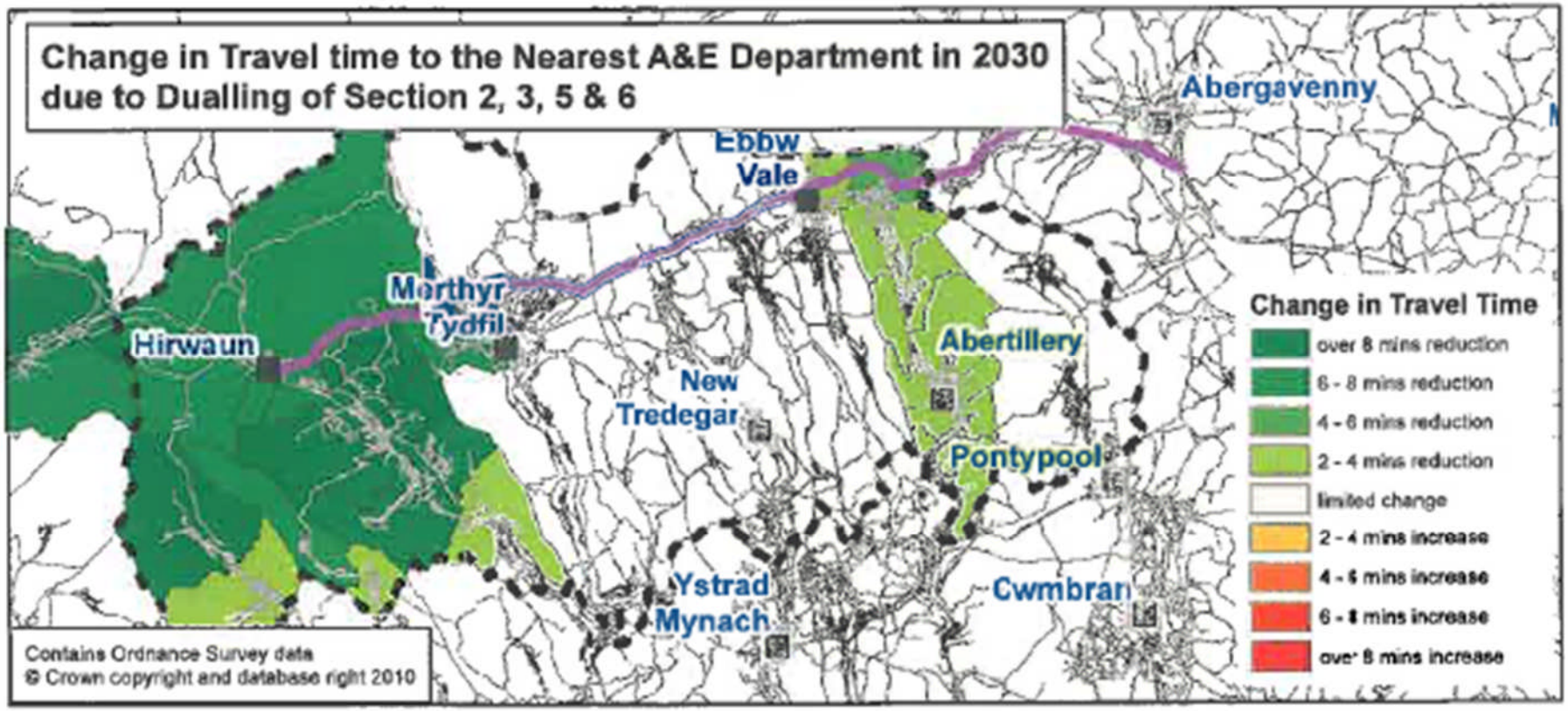

Figure 23 Accessibility Map 11: Forecast change in Travel Time to A&E Department between in 2030 due to dualling of Section 2, 3, 5 and 6

Table 3 Summary of accessibility forecasts

Accessibility type	**Change between 2010 and 2030 in study area**	**Sections considered**
Employment opportunity	Over 20% reduction	No Scheme
	Limited change	Section 3 only
	Over 20% increase at the Eastern end of the Study area, and the area covering Rassau industrial estate. Benefits in Ebbw Vale valley are over 10%, Increases of 3-10% are found in almost all LSOAs in Tredegar.	Section 2&3
	Over 20% increase in all LSOAs which adjoin or are intersected by Section 3, and LSOAS south to Abertillary and EbbwVale. LSOAs around Ashvale and Tredegar in the study area have benefits in the range 15-20%. All LSOAs in the study area have increases over 20%.	Section 2,3,5,
	Over 20% increase in all LSOAs in the study area	Section 2,3,5,6
Travel time to nearest A&E department	2-4 minutes increase at the Eastern End of Section 3 (Brynmawr), limited change elsewhere	No Scheme
	No significant change in any LSOA in the study area.	Section 3 only

	2-4 minutes reduction at the Eastern End of Section 3 (Brynmawr),, limited change elsewhere	Section 2&3
	4-6 minutes reduction at the Eastern End of Section 3 (Brynmawr), 2-4 minutes Beaufort, limited change elsewhere	Section 2,3,5,
	4-6 minutes reduction Brynmawr, 2-4 minutes Beaufort, limited change elsewhere	Section 2,3,5,6

5.2 Accessibility by public transport from study area to local destinations

The Google maps API was used to calculate the travel time by public transport. These times include an allowance for the walking time to the public transport stop and from the public transport stop to the final destination.

Table 4 Data acquired from Google maps API; December 2015

	Focus Group location : origins					
	Garnlydan	**Rassau**	**Waundeg**	**Brynbach Primary School**	**Beaufort**	**Mean travel time all origins**
Destination						
Prince Charles Hospital	64.1	58.5	39.2	31.3	57.0	50.0
Asda Merthyr Tydfil	54.6	49.1	29.8	21.9	47.6	40.6
Merthyr Tydfil station	59.3	53.7	34.4	26.5	52.3	45.2
High St, Rhymney	51.0	45.4	57.7	57.5	43.9	51.1
Tredeger	57.3	30.9	31.2	23.3	29.4	34.4
Tafarnaubach Industrial Estate	57.6	52.0	20	22.8	50.6	41.0
Rassau Industrial estate	34.0	50.3	51.4	44.4	52.6	46.5

Morrisons Ebbw Vale	18.1	24.8	51.5	44.5	27.0	33.2
The Works Ebbw Vale	42.1	35.0	26.5	18.6	38.5	32.1
Ebbw Vale Town Centre	38.9	31.7	28.0	20.1	35.2	30.8
Rhos Y Fedwen Primary School	3.3	25.4	55.0	48.1	27.6	31.9
Beaufort Hill Primary School	26.9	0	36.5	28.6	4.5	19.3
Ysbyty Aneurin Bevan Hospital	56.3	49.2	38.3	30.4	52.7	45.4
Market SQ Brynmawr	49.9	23.0	42.0	34.1	21.3	34.1
Asda Brynmawr	46.0	19.1	47.2	39.3	19.8	34.3
Brynmawr School	59.9	35.1	53.9	46.0	30.0	45.0
Abergavenny	61.7	51.6	81.0	73.0	49.0	63.3
Nevill Hall Hospital	48.9	38.8	68.2	60.2	36.2	50.5
Abertillery	47.3	42.5	66.5	58.6	45.1	52.0
Pontypool	48.9	38.8	68.2	60.3	36.2	50.5

5.3 Route choice in terms of distance and travel time to key local services from focus group locations

Table 5 Routes by car between focus group locations and a selection of key local services:
Key: 1 = Section 3 is shortest in terms of time and distance.

Origin	**Destination**	**Uses section 3 when criteria is both shortest distance and shortest time**
Waundeg	Town	0
	Hospital	1
	Primary school	0
	Secondary school	1*
	Supermarket	1*
Rassau	Town	0
	Hospital	1
	Primary school	0
	Secondary school	0

	Supermarket	0
Garnlydan	Town	0
	Hospital	1
	Primary school	0
	Secondary school	0
	Supermarket	Section 3 gives the shortest time / local roads give the shortest distance
Beaufort	Town	0
	Hospital	1
	Primary school	0
	Secondary school	0
	Supermarket	
Brynbach	Town	0
	Hospital	1

	Primary school	0
	Secondary school	0
	Supermarket	0

*travel time difference is less than 2 minutes and less than 0.3 miles.

6 Affordability

No supplementary information was required.

7 Safety and security

Table 6 Summary of safety and security impacts

Social group and amenities indicators			**Population**	**Accidents**
Resident population in the impact area	Income distribution quintiles WIMD QUINTILE	1	45%	
		2	20%	
		3	21%	
		4	13%	
		5	0	
	Children (<16)		18%	Perceived increase in accident risk at Nant-Y Bwch and BrynBach Primary school catchment
	Young people (Age 16-24)		12%	Perceived increase in accident risk at Nant-Y Bwch and Merthyr road
	Older people		19%	

	People with a disability(Health greatly affects day to day life)	16%	
	Black Minority Ethnic	0%	
	No car households	28%	Perceived increase in accident risk at Nant-Y Bwch for non-car users
	Households with dependent children	29%	Perceived increase in accident risk at Nant-Y Bwch and BrybBach Primary school catchment
	Population in the local study area	34361	

N.B. Children are those under 16.

7.1 Accidents Photographs

Photographs illustrating the fears of parents and teachers at Waungeg- NantyBwch and BrynBach Primary.

Figure 24 Pavement and modification to desire line at Texaco garage south of Nant-Y-Bwch roundabout. The crossing of two slip roads into the forecourt and the narrow pavement were points of concern in the focus groups.

Figure 25 Top: children and parents on garage entranceway south of Nant-Y-Bwch roundabout on pavement perceived as narrow, bottom: children crossing the northern arm of Nant-Y-Bwch roundabout, right children crossing the bridge over Section 3 at Nant-Y-Bwch roundabout.

Figure 26 Child slips on wet tactile paving at on west-bound Section 3 on ramp of Nant-Y-Bwch roundabout just after car beyond accelerates of roundabout onto slip road.

5 Air quality

Up to 20% of the study area population may potentially be negatively affected by the changes in air quality, whilst the other 80% potentially benefit. Columns 3-5 summarise the population potentially at risk of being negatively impacted by air quality based on population disaggregation to LSOA resolution. The population potentially benefiting from air quality change in column 4 is 100% minus column 4 in Table 7. As shown in the assessment report and Figure 27, the greatest length of congested road is found in WIMD quintile 3 areas. The length of congested road in WIMD quintiles 1, 2 and 4 are relatively similar. Simplified air quality displacement is also mapped from monitoring point data (supplied by ARUP used in the Environmental Statement Volume 1 Technical Assessment Report). The map is produced using ArcGIS10.2 with the default Krigging setting.

Table 7 Summary of air quality impacts:

Social group indicators			**count Population(1)**	**% of Population(2)**	**individuals potentially negatively impacted by Air quality(3)**	**% study area segment population potentially negatively impacted by Air quality(4)**	**% study area population potentially negatively impacted by Air quality(5)**
Resident population in the impact area	Income distribution quintiles WIMD QUINTILE	1	15532	45%	3000	19%	10%
		2	7169	20%	1473	21%	5%
		3	7467	21%	1482	20%	5%
		4	4480	13%	0	0%	0%
		5	0	0	0	0%	0%
	Children (<16)		5376	18%	602	11%	2%
	Young people(Age 16-24)		3584	12%	374	10%	1%

	Older people	5675	19%	479	8%	2%
	People with a disability(Health greatly affects day to day life)	4779	16%	521	11%	2%
	Black Minority Ethnic	NA	0%	0	0%	0%
	No car households	8363	28%	440	5%	1%
	Households with dependent children	8961	29%	391	4%	1%
	Population in the local study area	34361				

7.2 Speed data analysis

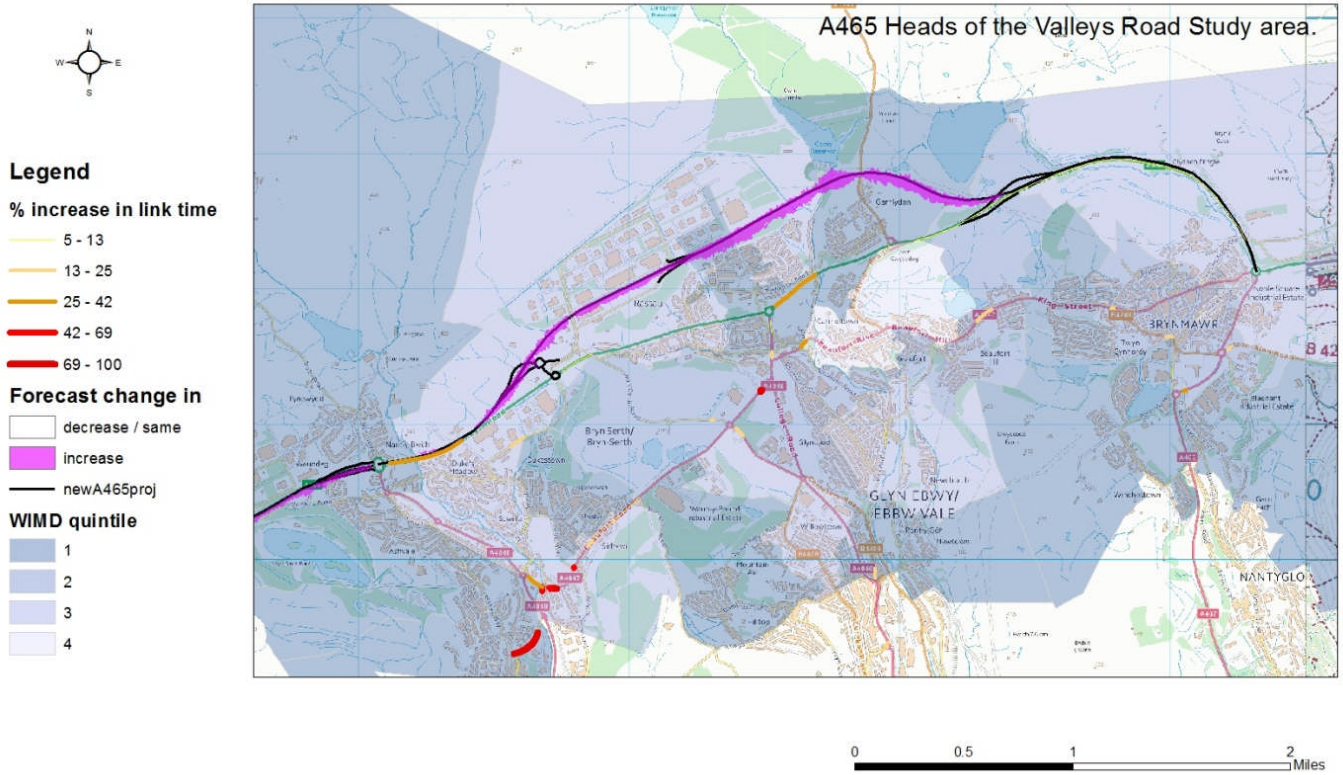

Figure 27 Potential pollution displacement and congested locations

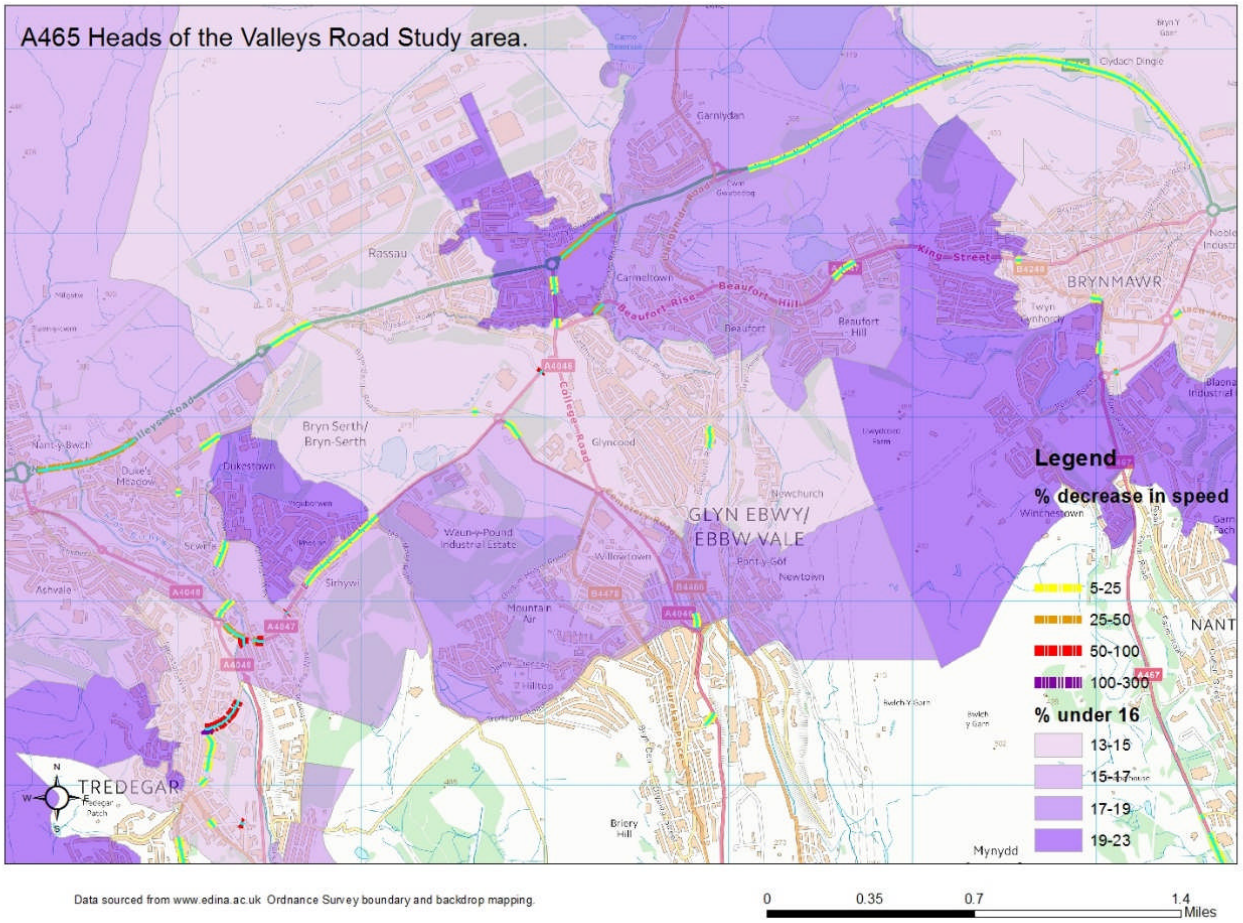

Figure 28 The darkest polygons represent the areas with over 23% of the population under 16 years old. This group will be travelling to school in the AM peak and are also vulnerable to pollution.

8 Noise supplementary information

Table 8 Summary of noise impacts

Social group and amenities indicators			**Population**	**Noise**
Resident population in the impact area	Income distribution quintiles WIMD QUINTILE	1	45%	Garnlydan and Rassau: Major beneficial to major adverse impacts Nant-y-Bwch: (Waundeg) Minor adverse to moderate beneficial impacts Dukestown: Minor adverse to moderate beneficial Brynmawr: negligible
		2	20%	Brynmawr: negligible
		3	21%	
		4	13%	
		5	0	
	Children (<16)		18%	Garnlydan 234 (19%) Rassau 368 (21%) Nant-y-Bwch (Waundeg) 262 (17%) Dukestown 313 (23%)

	Young people (Age 16-24)	12%	Garnlydan 157 (13%) Rassau 217 (12%) Nant-y-Bwch (Waundeg) 176 (11%) Dukestown 161 (12%)
	Older people	19%	Garnlydan 213 (17%) Rassau 266 (15%) Nant-y-Bwch (Waundeg) 288 (19%) Dukestown 225 (16%)
	People with a disability(Health greatly affects day to day life)	16%	Garnlydan 238 (19%) Rassau 283 (16%) Nant-y-Bwch (Waundeg) 252 (16%) Dukestown 328 (23%)
	Black Minority Ethnic	0%	
	No car households	28%	Garnlydan 134 (37%)

			Rassau 256 (33%) Nant-y-Bwch (Waundeg) 166 (16%) Dukestown 234 (39%)
	Households with dependent children	29%	Garnlydan 158 (12.5%) Rassau 233 (12%) Nant-y-Bwch (Waundeg) 175 (11%) Dukestown 200 (19%)
	Population in the local study area	34361	

8.1 Anticipated noise impacts in appraisal documents

Source: A465 Dualling Section 3 Brynmawr to Tredegar Environmental Statement Volume 1

Overall summary: Operational noise effects are both beneficial and adverse as would be expected from a new alignment relieving traffic from the existing road, with some properties exposed to a new road noise source.

Garnlydan: In Garnlydan, significant noise decreases have been assessed near the existing A465 although significant noise increases have been identified at Carmel Close and Queensway. Though still significant, the increases are effectively reduced by the proposed screening.

Rassau: At Rassau there would be significant noise decreases near the existing A465 and on some parts of Rassau Road. Conversely there would be significant increases at the north of Rassau near the Scheme. A significant noise decrease has been predicted at Rhos y Fedwen Primary School.

Dukestown: In the Dukestown area, significant noise decreases have been predicted at properties north of St Luke's Road near to the existing A465.

Nant-y-Bwch: At Nant-y-Bwch significant noise decreases have been predicted south of the roundabout although there would be significant increases near the Scheme. A significant noise decrease has been predicted for some facades of Bryn Bach Primary School.

Table 9 Source: Table 11.7.1 – Summary of Impacts on .Noise and Vibrations A465 Dualling Section 3 Brynmawr to Tredegar Environmental Statement Volume 1 P410-411

Receptor	Description of effect	Magnitude of impact prior to mitigation	Magnitude of impact following mitigation	Significance of impact following mitigation	Notes / Comments
Construction Impacts					
Brecon Beacons National Park	Construction noise	--	--	Not significant	
Garn Lydan	Construction noise	--	--	Temporary significant increase	Construction noise during site clearance, earthworks and structures construction phases. Worst case considered.
Reservoir Road (Rassau)	Construction noise	--	--	Temporary significant increase	Construction noise during earthworks and structures construction phases. Worst case considered.
Rassau	Construction noise	--	--	Not significant	
Coates Row (Rassau)	Construction noise	--	--	Temporary significant increase	Construction noise during site clearance, earthworks and structures construction phases. Worst case considered.
Nant-y-Bwch	Construction noise	--	--	Temporary significant increase	Construction noise during earthworks and structures construction phases. Worst case considered.
Operational Impacts					
Brynmawr	Road traffic noise	Negligible	Negligible	Not significant	
Brecon Beacons National Park	Road traffic noise	Minor to moderate beneficial	Minor to moderate beneficial	Unlikely to be significant	Significance rating given for dwellings in National Park. Small decreases and increases (below 3dB) in external noise levels in the Park.
Garn Lydan	Road traffic noise	Major beneficial to major adverse	Major beneficial to major adverse	Not significant, Unlikely to be significant, Significant decrease, Significant increase	Significant decreases in effects are predicted adjacent to the existing A465 alignment. Significant increases are predicted at dwellings closest to the new alignment including Carno Cottage and dwellings on Llangynidr Road, Queensway and Carmel Close.

Receptor	Description of effect	Magnitude of impact prior to mitigation	Magnitude of impact following mitigation	Significance of impact following mitigation	Notes / Comments
					The number of major and moderate adverse impacts is greatly reduced by the mitigation.
Rassau	Road traffic noise	Major beneficial to major adverse	Major beneficial to major adverse	Not significant, Unlikely to be significant, Significant decrease, Significant increase	Significant decreases in effects are predicted adjacent to the existing A465 alignment. Significant increases are predicted at the northern edge of Rassau closest to the new alignment. The number of major and moderate adverse impacts is greatly reduced by the mitigation.
Dukestown	Road traffic noise	Minor adverse to moderate beneficial	Minor adverse to moderate beneficial	Not significant, Unlikely to be significant, Significant decrease	Significant decreases in effects are predicted closest to the A465 alignment.
Nant-y-Bwch	Road traffic noise	Moderate to major beneficial	Moderate to major beneficial	Not significant, Unlikely to be significant, Significant decrease, Significant increase	Significant decreases in effects to the south of the roundabout and at Bryn Bach Primary School. Significant increases in effects at a few properties directly to the north of the roundabout.

9 Severance

Table 10 Summary of severance impacts (see over)

Social group and amenities indicators			Population	Noise
Resident population in the impact area	Income distribution quintiles WIMD QUINTILE	1	45%	Garnlydan and Rassau: De-trunking Old A465 has little impact on reducing existing severance Nant-y-Bwch (Waundeg): Major increase in severance
		2	20%	
		3	21%	
		4	13%	
		5	0	
	Children (<16)		18%	Garnlydan 234 (19%) Rassau 368 (21%) Nant-y-Bwch (Waundeg) 262 (17%)
	Young people (Age 16-24)		12%	Garnlydan 157 (13%) Rassau 217 (12%) Nant-y-Bwch (Waundeg) 176 (11%)

	Older people	19%	Garnlydan 213 (17%) Rassau 266 (15%) Nant-y-Bwch (Waundeg) 288 (19%)
	People with a disability(Health greatly affects day to day life)	16%	Garnlydan 238 (19%) Rassau 283 (16%) Nant-y-Bwch (Waundeg) 252 (16%)
	Black Minority Ethnic	0%	
	No car households	28%	Garnlydan 134 (37%) Rassau 256 (33%) Nant-y-Bwch (Waundeg) 166 (16%)
	Households with dependent children	29%	Garnlydan 158 (12.5%) Rassau 233 (12%) Nant-y-Bwch (Waundeg) 175 (11%)
	Population in the local study area	34361	

N.B. Children are those under 16.

Acknowledgement of data-sources:

UK Boundary data was downloaded from http://borders.edina.ac.uk/html/boundary.html. This data is provided with the support of the ESRC and JISC and uses boundary material which is copyright of the Crown, the Post Office and the ED-LINE consortium. (It Contains National Statistics data © Crown copyright and database right 2012 Contains Ordnance Survey data © Crown copyright and database right 2012).

OS backdrop mapping © Crown Copyright/database right 2014. An Ordnance Survey/EDINA supplied service. The map projection used is GCS_OSGB_1936 British national Grid.

Census data for the 2011 UK census was used. It is provided by Office for National Statistics, 2011 Census: Aggregate data (England and Wales) UK Data Service Census Support. Downloaded from: https://www.nomisweb.co.uk/ This information is licensed under the terms of the Open Government Licence [http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2]

All other data sources are cited in the text