



Assessment Report:

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	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 Full Social Assessment Report.docx
Signature	

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1 Introduction

1.1 Study aim

The aim of this report is to provide a **social assessment** of the impacts of Section 3 of the A465 Heads of the Valleys Road: Brynmawr to Tredegar, using a mixed methods approach which adapts and builds on the UK WebTAG appraisal guidance units 4.1 and 4.2.

We define **social assessment** in this document as a study of the social and distributional impacts which estimate the impacts of the implemented scheme at the point of opening rather than a detailed ex-ante appraisal. In the absence of detailed ex-ante appraisal, this report sets a baseline from which future evaluation may be conducted.

This is the first application of a new mixed methods approach to social assessment of the impacts of transport infrastructure investment in the UK. It was commissioned by the Welsh Government in specific recognition of the need for improved guidance in this area of project delivery. The results reported here, along with its accompanying annexes, also contribute to greater understanding of social and distributional impacts, which builds upon and extends the current quantitative approach in WeITAG / WebTAG. This will hopefully lead to better understanding of the wider social effects of transport projects in order to inform future considerations as to how new transport schemes affect wellbeing.

1.2 Accompanying documents

This report has the following accompanying sister documents

- Summary Report – a short overview of this report focusing on its main findings.
- Technical Annex – further technical data, maps and detailed assessment tables relating to the quantitative analyses which inform this assessment report.
- 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 Overview of methodology

This chapter provides a brief summary of the methods used in the social assessment study. The accompanying Methodology Annex provides a more detailed account of the rationale for the methods used, their implementation and a discussion of their application.

The methodology designed for the evaluation of the social impacts of the A465 Section 3 involved the following key stages:

- Screen the impacts of the A465 Section 3 works and identify those impacts with a significant social impact on groups of people.
- Review the appraisal documents to identify forecast data relevant to social impacts of the scheme (the previous appraisal that was conducted mainly focused on economic and environmental aspects with only a limited range of social indicators included).
- Follow and adapt where necessary the appraisal techniques in WelTAG guidance (these techniques primarily used quantitative analysis and GIS tools for spatial analysis).
- Assess the conditions post opening with the appraisal work using the same tools.
- Supplement this with qualitative analysis work by holding a series of focus groups with members of the local community and interviews with professional stakeholders (Welsh Government officers, local government staff and local employers).

This mixed methods approach allows for the inclusion of more subjective and qualitative measures of the contribution of a project to social wellbeing. It also allows comparison with Geographical Information Systems (GIS) based analysis and the consideration of issues at a finer spatial resolution than the GIS analyses. Many of these social impacts are difficult to quantify, although their potential value or disbenefit to the local community living near a scheme can be significant. The key stages of the social assessment approach are illustrated in Figure 1 below.

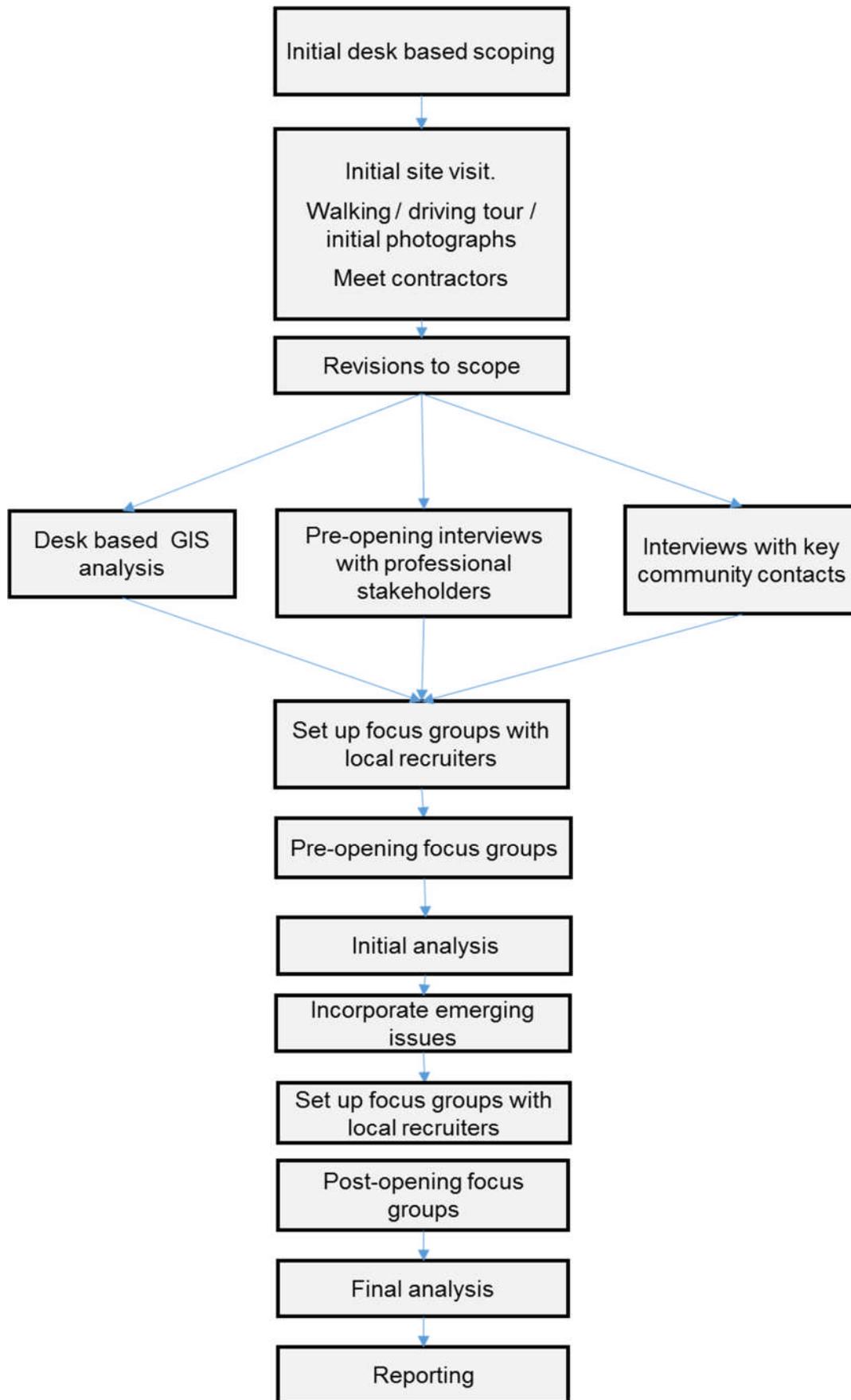


Figure 1 Key stages of the social assessment approach

3 Context

This chapter first describes the A465 strategic transport corridor, then Section 3 of this corridor improvement scheme which forms the focus of the study. The study area is then described in terms of its geographic extent and its community profile.

3.1 The A465 strategic transport corridor

The A465 (commonly known as the Heads of the Valleys road), is a European strategic transport corridor. It runs from a connection with the M4 at Neath, east of Swansea, through Merthyr Tydfil and Abergavenny onto Hereford. It is an international gateway and is part of the Trans European Transport Network (TEN-T) linking the Midlands with West Wales and Ireland. At a national level the road is important for the South Wales economy, as it links the industrial areas of West Wales and the northern end of the South Wales valleys with the Midlands. At a local level, the road provides access to and between the northern ends, or 'heads' of the former South Wales coalfield valleys between Abergavenny in the east and Neath in the west.

The Welsh Government is committed to dualling the entire length of the A465 so that it becomes a road built to a standard suitable for fulfilling its strategic purpose as an international route into West Wales. The objectives for the A465 upgrade are to improve traffic flow, reduce accidents and to support inward investment to local areas such as the Ebbw Vale Enterprise Zone. Most of the A465 scheme consists of an online upgrade of the existing, mainly single, carriageway road to a dual carriageway, with grade separated junctions, allowing maximum traffic speeds to be safely set at the national limits of 70mph for cars and 50 mph for heavy goods vehicles.

Figure 2 below shows the route of the A465 across South Wales. The upgrade of the A465 is being undertaken in stages. Table 1 shows the sections along the strategic corridor. The first Section opened in 1996 and work began several years earlier. Work on a further section is ongoing.



Figure 2 South Wales showing the A465 and other major routes (source: Welsh Government)

Table 1 Sections of the A465 Strategic corridor.

Section	From / to	Status
1	Abergavenny to Gilwern	Completed 2008
2	Gilwern to Brynmawr	Under construction since Dec.2014
3	Brynmawr to Tredegar	Completed 2015
4	Tredegar to Dowlais Top	Completed 2004
5	Dowlais Top to A470 Junction	At planning stage
6	A470 Junction to Hirwaun	At planning stage
-	Hirwaun to M4 Neath	Completed 1996

3.2 A465 Section 3 scheme description

The A465 Section 3 scheme consists of three key elements:

- New A465 Section 3: A new offline section of the A465 and upgrades to the old A465 at either end up to dual carriageway standard.
- Former A465: Modifications to the old route of the A465 which becomes a local road.
- Footways and cycleways: New walking and cycling facilities.

3.2.1 New A465 Section 3

The Section 3 scheme runs through an open upland landscape and includes the high point of the A465 corridor (1350 feet). It covers 7.8km from Brynmawr to Tredegar, of which nearly 5km is a new road from the north of Brynmawr to Dukestown Cemetery at Tredegar. The new route goes through the Rassau Industrial Estate, and to the north of residential areas of Rassau and Garnlydan. Carillion were appointed in 2010 to deliver the scheme. Work started on site in January 2013 and was completed in 2015. The Scheme was officially opened in September 2015. There were however some continuing road works and lane closures along parts of Section 3, as well as those associated with the de-trunking works on parts of the old A465, when the post-opening field work was undertaken between 19th – 23rd October 2015. There were also road works on the adjacent Section 2 as work had started on upgrading this section of the A465. The route of the scheme is shown in Figure 3 below.



Figure 3 A465 Section 3 (Source: Welsh Government)

The new road is a dual carriageway with junctions provided at:

- Ebbw Vale East to allow for access to Ebbw Vale from the east
- Rassau Industrial Estate to allow for access from the east
- Ebbw Vale West to allow for access to Ebbw Vale and Rassau Industrial Estate from the west
- Tredegar: for access to Tredegar, Nant-y-Bwch and Waundeg.

At each of these junctions, drivers on the A465 pass through uninterrupted. Bridges are provided to separate the junction slip roads from the A465. Additionally there is an at grade junction at Brynmawr roundabout. There is a climbing lane from Brynmawr roundabout up to the highest point (Ebbw Vale East Junction).

At Llangynidr Road, Alan Davies Way and Crown Avenue the existing roads pass over the scheme on new bridges. New underpasses are provided at Rassau and in front of Blaen-y-Cwm reservoir.

A rest area has been provided at Garnlydan. This includes a parking area, a view point, and interpretation materials. There are views towards the Valleys Regional Park to the south and Brecon Beacons National Park to the north.

The carriageway on Section 3 is built with a low noise emitting surface with additional skid resistant surfacing on the approach to certain junctions. Safety barriers, road markings and signage have been provided in accordance with current design standards.

3.2.2 Former A465

The existing A465 will be de-trunked and pass from the Welsh Government to Blaenau Gwent County Borough Council. It will remain an important local route for people wishing to gain access to Ebbw Vale and the communities from the east. There is the opportunity to make improvements to the road to calm traffic, improve road safety and enhance facilities for pedestrians and cyclists. A new right turn facility has been provided from Llangynidr Road onto the west bound de-trunked A465 to provide more efficient links to the west and take some traffic off local roads in the Garnlydan housing estate.

3.2.3 Footways and cycleways

The scheme affects a number of public rights of way and routes used by pedestrians, cyclists and horse riders. During construction, some of these required stopping up and where practicable, diversions were put in place. Following completion, public rights of way were restored and grade separated crossing points provided.

At Tredegar Junction, controlled pedestrian and cycle facilities were designed to provide safe routes for walking and cycling between the Waundeg area and Nant-y-Bwch, including Bryn Bach Primary School. A new section of footway alongside the A4048 in front of the petrol service station was constructed as part of this route to the school.

National Cycle Route 46 across the River Sirhowy on the 'Nine Arches' viaduct was maintained. New cycleways were provided at Crown Business Park, Rassau and Carno to assist Sustrans' plans for the wider cycle network.

At Dukestown, alongside the Crown Business Park, the existing road has been stopped up. It has been replaced with a cycleway which also serves as a maintenance access.

3.3 Scheme objectives

The objectives of this scheme stated in the appraisal documentation were to:

- Improve the A465 between Brynmawr and Tredegar from a single 3-lane carriageway to a dual 2-lane carriageway
- Bypass congested towns and villages
- Improve road safety and reduce casualties
- Promote cycling and walking
- Minimise future maintenance requirements and disruption to the network
- Reduce journey times
- Reduce variability of journey times
- Improve resilience on the A465
- Facilitate economic regeneration.

3.4 Defining the study area

The local study area is shown below. Some of the social impacts of the scheme, such as noise and air quality, are very local in nature. The local area was taken to be within 2 km of the new or old route of the A465 as shown in Figure 4 below.

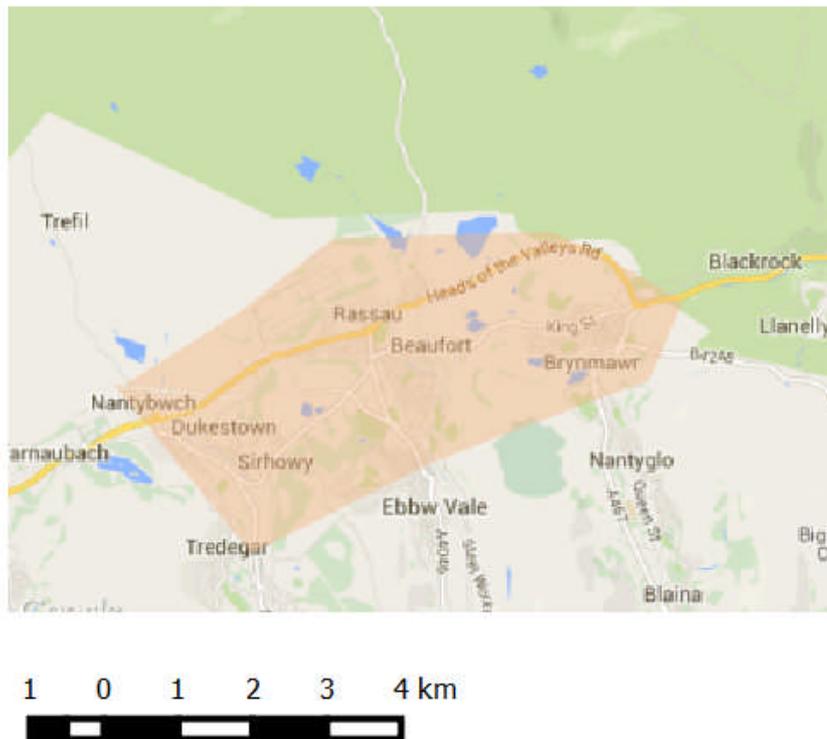


Figure 4 Map showing the maximum extent of the local scale of analysis for the A465 Section 3 study.

The current travel patterns in the area and routing information were examined to see which origins and destinations would use the A465. This was done using Census commuting flows and Google maps (Further information and maps are provided in the Methodology Annex). After examining travel patterns the following geographical scales were determined:

- The large scale covers longer journeys that are sufficiently long that they are unlikely to be undertaken on a regular, daily basis. This scale covers the whole of Wales.

- The medium scale is the area that is covered by regular trips. It runs as far as Cardiff, Swansea and Abergavenny.
- The local area is within 2km of the new Section 3 or the former alignment of the A465 in this area. (as shown in Figure 4)

3.5 Community profile of the study area

The principal communities in the local study area are shown in Figure 5 below. The map also shows the classification of the areas according to the Welsh Index of Multiple Deprivation (WIMD).

The local communities are:

Waundeg; A residential area close to the A465. This area is very close to a major new intersection created by the new road. Note: This intersection existed as part of the old A465 alignment as an at grade junction. It has been altered as part of the works to provide a grade separated junction.

Nant-y-Bwch; A residential area south of the Nant-y-Bwch roundabout with a primary school (Brynbach Primary School).

Rassau; The Old and New Rassau residential areas are split by the old A465. The two halves of the area are different in terms of the type and tenure of housing and the socio-economic make-up of the area. The New A465 runs to the north of New Rassau.

Garnlydan; Close to the Llangynidr Road bridge over the New A465 it is a residential area with similar housing to New Rassau with a local football ground and clubhouse.

Beaufort; This community lies in the east of the study area. The A4047 runs parallel to the A465 through this community. The road is a busy local route connecting Brynmawr and Ebbw Vale. The traffic flow forecasts for the road in 2015 are, without the scheme, 12400 vehicles per day falling slightly to 11200 with the scheme.

Brynmawr; is at the far eastern end of the study area. Part of Brynmawr is beyond the eastern end of Section 3 but is included in this study because of the possible impact of the scheme on local connections between Brynmawr and Ebbw Vale,

Rassau and Tredegar. The grounds of Brynmawr Secondary School are also partly being used by Costain for the works on section 2.

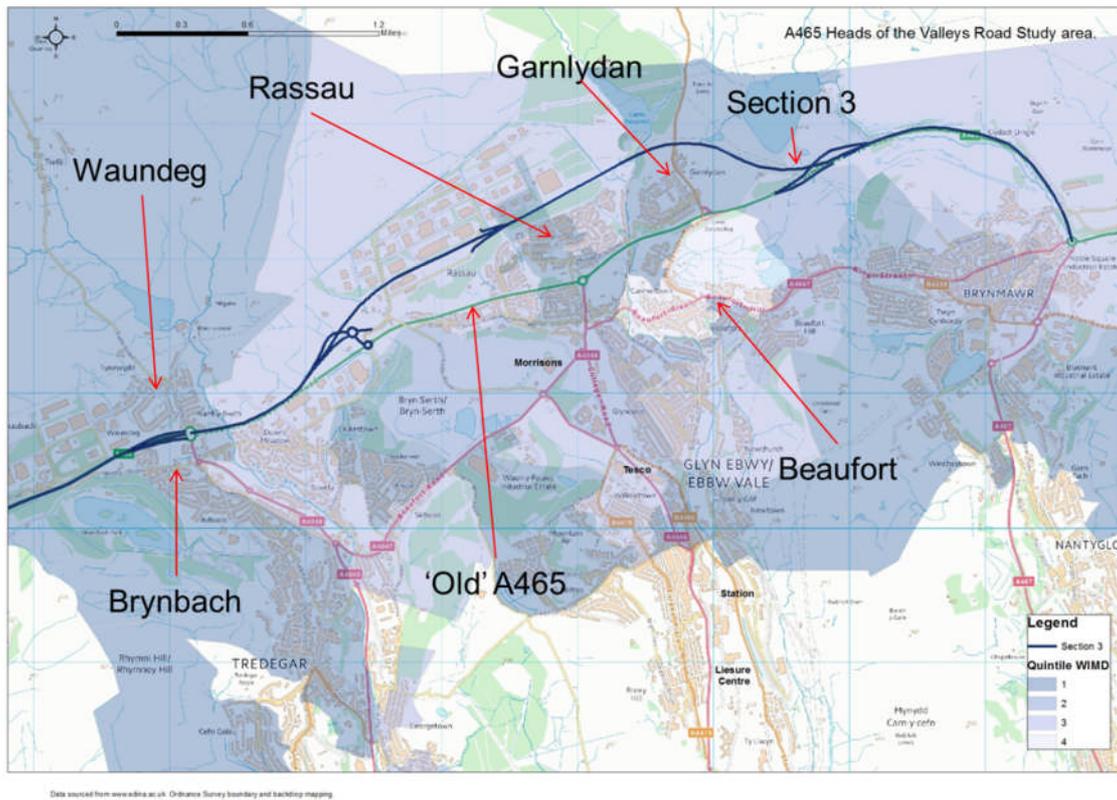


Figure 5 Local communities along Section 3 of the A465.

A numerical summary of demographic groups within the population is included in Table 4. Further maps and photo data describing the socio-demographic context of the area are given in the Technical Annex.

3.6 Population profile of the study areas

Having defined the geographical scope of the study area, the population of the study area was disaggregated by group. This is shown in Table 2.

Table 2 Population profile of LSOAs (Lower Super Output Areas) which make up the study area

Social groups		% of Population
1 (most deprived)		45%

Resident population in the study area	WIMD quintiles	2	20%
		3	21%
		4	14%
		5 (least deprived)	0
	Children (<16)		18%
	Young people		12%
	Older people		19%
	People with a disability		16%
	Black Minority Ethnic		0%
	No car households		28%
Households with dependent children		29%	

4 Impact Domains

4.1 Scoping the impact domains

Our approach to scoping impacts goes beyond the desk based highly aggregate approach used by WebTAG. (<https://www.gov.uk/government/publications/webtag-tag-unit-a4-2-distributional-impact-appraisal-december-2015>) The WebTAG Unit A4.2 Stage1 guidance suggests that a remote and brief overview of the area and the scheme should be used to identify the domains where the largest impacts may occur and also as a means of eliminating from the assessment, domains which are not immediately associated with large scale impacts (i.e. affecting large numbers of people over a wide area).

One issue with this approach is that although the aggregate net impact may not be big the social impacts maybe unevenly distributed e.g. user benefits. They all need looking at and so are still relevant to social assessment.

For this reason our approach is as follows: consider the possibility of a wide range of potential impacts, at the outset. Where the scoping suggests a larger impact, then attempt to unpick this issue and understand if there are connections to other impacts which may be 'hidden' by coarse scale aggregate desk based study. The methods for doing this are fine resolution GIS analysis and qualitative fieldwork. The initial scoping is summarised in Table 3 below.

Table 3 Summary of initial scoping of domains used in the assessment.

Indicator	Potential impact (yes / no, positive/negative if known)
Local user benefits	Minor travel time savings for relatively small numbers of users appears likely, but detailed investigation is needed to assess different facets of potential user (dis)benefits and links between the scheme and regeneration
Noise	Yes: positive and negative depending on location
Air quality	Yes: positive and negative depending on location
Safety and personal security	<p>Yes: positive on Section 3 for road users. Pedestrians and cyclists potential for positive impact from cycle infrastructure, possible negative impact at Section 3 and Old A465 crossing points. Possible increase in exposure to accidents for users who use parallel links such as A4047 rather than Section 3.</p> <p>No significant personal security issues seem apparent in the scoping exercise, however issues may be allied to road safety.</p>
Severance	Changes in junctions, road crossing points and traffic flow have potential for impacts on walkers and cyclists. Whether impacts are positive or negative depends on the location and design solution implemented.
Accessibility	Increased accessibility for car users. Impact to Public Transport users positive or negative depending upon changes to services, or attractiveness of services relative to car caused by scheme
Affordability	At the scoping stage there may appear to be only minor cost savings to some car-based trips. Local affordability issues may be present but also linked to accessibility or regeneration.

Table 4 Social assessment domains used in this study and special interest person groups.

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%	Red	Red	Red	Red	Red	Red	Red
		2	20%	Yellow	Red	Red	Red	Red	Red	Red
		3	21%	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
		4	14%	Green	Green	Green	Green	Green	Green	Green
		5	0	Grey	Grey	Grey	Grey	Grey	Grey	Grey
	Children (<16)	18%	Grey	Yellow	Red	Red	Red	Red	Grey	
	Young people (16-24)	12%	Green	Yellow	Yellow	Red	Yellow	Yellow	Red	
	Older people (>65)	19%	Grey	Yellow	Yellow	Red	Yellow	Yellow	Yellow	
	People with a disability	16%	Grey	Yellow	Yellow	Red	Red	Red	Yellow	
	Black Minority Ethnic	0%	Grey	Grey	Grey	Grey	Grey	Grey	Grey	
No car households	28%	Red	Red	Red	Red	Red	Red	Red		
Households with dependent children	29%	Yellow	Yellow	Yellow	Yellow	Red	Yellow	Yellow		

The total population of the study area is 29871 (ONS 2011 census).

4.2 Determining the disaggregation for distributional analysis

The impact domains we identified in Table 3 were cross tabulated against the population groups in Table 2. The cross tabulation is shown in Table 4.

The disaggregation shown in this cross tabulation draws on both existing guidance (WeITAG/ WebTAG) and the growing body of academic studies relating to measurement of the social impacts of road schemes, which were also considered by the study team in the development of this methodology (see Methodology Annex for further information and key references).

5 Social Assessment

The remainder of this document reports the key findings of the social assessment against each of the six domains identified in the assessment table above. Further technical details relating to these assessments can be found in the Technical Annex associated with this document. The methods used to carry out the social assessment are outlined in Chapter 2 of this report and explained in detail in the Methodology Annex.

The six specific domains of interest assessed are:

1. User benefits (and local regeneration effects)
2. Accidents (safety and security)
3. Accessibility
4. Affordability
5. Pollution (noise and air quality)
6. Severance

In each case, the findings are grouped according to the three main elements of the scheme: i) Section 3 - the new A465 Section 3 dual carriageway, ii) the former A465 and iii) the new cycle infrastructure.

5.1 Local user benefits (and local regeneration)

Quantitative micro-scale assessments of the local user benefits and impacts of local regeneration were not carried out in this study. The issues were investigated qualitatively through a series of focus groups. Details of the focus group methodology can be found in the Methodology annex.

5.1.1 Overview of local user benefits (and local regeneration) impacts

- Participants hoped for benefits to users of local roads once Section 3 was open.
- Participants envisaged travel time savings for locals with cars making trips to Swansea / Abergavenny and long distance trips once not just Section 3 was complete, but when the whole corridor was complete.
- There was both hope and scepticism regarding perceptions of the contribution Section 3 would make to local regeneration.

- The by-pass effect of Section 3 may cause dis-benefits to some sectors of the local economy. Some local businesses did not expect to be either helped or hindered by Section 3.

5.1.2 Focus group findings local user benefits

The focus group findings are described in greater detail in the Focus Group Report.

One of the key benefits perceived by participants was the possibility for the new road to reduce travel times and make journeys simpler for car users, especially to Abergavenny and Swansea.

Participants expected the new road, once opened, to reduce congestion, especially at junctions and roundabouts, which constituted a hot spot for traffic and accidents. Reducing congestion was considered as quite an important benefit for local car drivers, whose perceptions were of an *unbearable situation during the construction phase of the project*, especially where considerable disruption to their journeys occurred on a regular basis.

It emerged from the discussion that the users who benefitted the most from the new road were long distance drivers and commercial drivers. However, despite the benefits for long distant travellers, the local community, and especially the most deprived groups without access to a car, felt that by and large they did not experience significant benefits from the new infrastructure.

Discussions regarding user benefits were also connected to an expectation and hope that Section 3 would deliver the forecast reduction in road traffic collisions.

Participants hoped the road would encourage the economic growth of the area, as a result of making the journey quicker and easier from Swansea right through to the Midlands. Rassau residents in particular hoped that the road would permit a re-birth of the Rassau and Tafarnaubach industrial estates, which were providing most of the jobs at the moment and were facing a long-term decline. However, there was also scepticism about the ability of the road on its own to generate the creation of new jobs: “Nothing’s [investment / regeneration] going to come [just as a result of the road]” (Bryn Bach FG1). Local business stakeholders at Rassau industrial estate said that Section 3 and the A465 corridor in general did not greatly affect their costs or have any influence on their business plans.

Some participants suggested there would be disbenefits to the local economy as Section 3 would create a 'by-pass' effect. They expected diminishing numbers of people stopping in the communities to shop/visit/invest: local businesses would be bypassed by the new road, reducing customer numbers. A participant to the Bryn Bach Primary School focus group explained the situation of a local business (a pub and restaurant) situated close to the road, which saw a dramatic reduction in passing trade since the new road started being built.

5.2 Accessibility

The initial appraisal based on accessibility models derived from traffic modelling suggested that Section 3 and the project as a whole would improve accessibility through a wider catchment area, higher employment opportunities and a larger available labour force.

5.2.1 Overview of accessibility impacts

The measurable impacts in this assessment stage were as follows:

Section 3, New A465

- Section 3 improves access times along the Heads of the Valleys Route by car.
- In the short term, Section 3 does not appear to impact upon access times by public transport as local bus routes do not use this route.
- Construction related disruption to travel is considered by local residents as long term rather than temporary.
- Population segments which are less likely to have car access (e.g. non car households, children, young people, and the elderly) are less likely to benefit from travel time savings compared to those in the less deprived segments of the population.
- Construction disruption has long term impacts on accessibility which are not currently assessed anywhere within scheme appraisal in the UK, but can have a serious detrimental effect on local people's quality of life and accessibility, as noted in the focus groups.

Section 3, former A465

- 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.
- For very local trips, the quickest route is to remain using the old section of the A465. Travel times on this road may be affected by de-trunking measures and the reduced traffic volume. The net effect of these changes will become apparent over time.

Active travel infrastructure

- New cycle infrastructure has been constructed. The individual links are of good quality but they do not all connect to the National Cycle Network or local amenities. Users of the new infrastructure are perceived as being recreational cyclists and mostly from outside the local area.
- A number of existing routes which do not have new infrastructure were highlighted as being difficult or dangerous for pedestrians and cyclists. This is an issue which could be addressed by the local council in its on-going plans to improve active travel infrastructure in the area and is not a responsibility of the A465 scheme.
- The delivery of high quality active travel infrastructure highlights deficiencies in the existing walking and cycling network.

5.2.2 Evidence on accessibility derived from appraisal documents

An analysis of the impacts of the scheme on accessibility was carried out as part of the scheme appraisal based and reported in document: 12-8331 Traffic Forecasting Report Supplement¹.

¹ Welsh Govt. 2012 A465 DUALLING SECTION 3 BRYNMAWR TO TREDEGAR Traffic Forecasting Report Supplement. (Arup Document reference 12-8331 Traffic Forecasting Report Supplement)

The source of the accessibility forecasts in the appraisal document is unknown but they appear to be based on journey time by car catchments mapped at LSOA² resolution. The conclusions drawn from the forecasts are that reduced journey times as a result of dualling will provide:

- A wider catchment area,
- Higher employment opportunities,
- A larger available labour force.

The findings of the analysis work carried out for the appraisal process both on access to employment and to the nearest the Accident and Emergency department suggests that access to employment will increase by over 20% in the study area between 2010 and 2030 due to the dualling of Sections 2 and 3 of the A465 taken altogether. Access time to the hospital could decrease by up to 4-6 minutes. The appraisal analysis work shows that without the new road there would be a deterioration in accessibility as traffic congestion rose and travel times rose. It also shows that Section 3 would not make a significant difference on its own but that the benefits would arise when the adjacent sections were also completed.

Recommendation: *When the last section of the A465 corridor is completed an assessment of the cumulative social impacts of the corridor should be undertaken. This is because many local area effects will not be fully realised and established until this time.*

5.2.3 Further accessibility analysis carried out for this assessment

5.2.3.1 Evidence from focus groups

The focus groups reported that accessibility to long distance destinations in a westbound direction, over an hour's drive, has increased after the opening of the new road but construction works on Section 2 means that benefits to eastbound trips is not yet apparent. WebTAG regards construction impacts as temporary, but with a

² LSOA are spatial zones for reporting census data with a population of ~ 1500.
<http://www.ons.gov.uk/methodology/geography/ukgeographies/censusgeography#super-output-area-soa>

multi-phase programme of schemes such as the A465 upgrade, with a total time scale of over 20 years, these impacts can occur for a long period of time.

5.2.3.2 Accessibility by public transport

The study team analysed the journey times by public transport, based on timetables, for trips from each of the focus group communities (origins) to potential destinations identified in the pre-opening fieldwork. The analysis undertaken provides public transport times within three months of Section 3 opening.

Analysis of public transport journey times could be undertaken using BaseMap's software which replaces the previous Accession software. However the public transport timetables used in this software are only released periodically and so are not available for immediate use in an assessment shortly after a scheme opens. The study team therefore developed a bespoke open access tool which uses Google maps data and was implemented without the need for expensive proprietary software (Further discussion of this tool is available in the Methodology Annex). The travel times provided by Google include walk times to and from the bus/rail services and waiting times. These are summarised in Table 5 below.

5.2.3.3 Accessibility analysis comparing commuter flow data from 2011 census and revealed activity data.

Commuter flow data based on the 2011 census is released at MSOA³ level. The main commuting area (areas where there are more than 6 journeys recorded from each of the MSOAs in the study area) is mapped in Figure 6 below and compared with the revealed activity space of the focus group participants. The activity space of the focus group participants includes trips made for a variety of purposes, rather than the census data which only records trips to a regular place of work. The revealed activity space of the focus group participants was much smaller than the commuting area.

³ MSOAs are census data dissemination zones with a population of 5000-15000.

Table 5 Public transport times from the focus group locations to key destinations

	Focus group location : origins				
	(travel times shown in minutes)				
Destination type	Garnlydan	Rassau	Waundeg	Brynbach Primary School	Beaufort
Minimum time to nearest employment centre ⁴	18.1	19.1	22.0	18.6	19.8
Minimum time to nearest secondary school	42.1	35.0	26.5	18.6	30.0
Minimum time to nearest town centre	38.9	30.9	28.0	20.1	29.4
Minimum time to nearest hospital	48.9	38.8	38.3	30.4	36.2

There is a suggestion from the focus groups that local residents will use local roads for local trips in preference to Section 3. This suggests that a large majority of local journeys are not directly affected by the new road but on the changes subsequently made to the remaining section of the old A465. Google directions suggests the same. The same directions query was run on Google maps before Section 3 opened and after. After the opening of Section 3 the recommended route uses the A4047 rather than Section 3. This is shown in Figure 7.

⁴ In this exercise employment centres were town centres, Rassau Industrial estate, hospitals and Secondary schools.

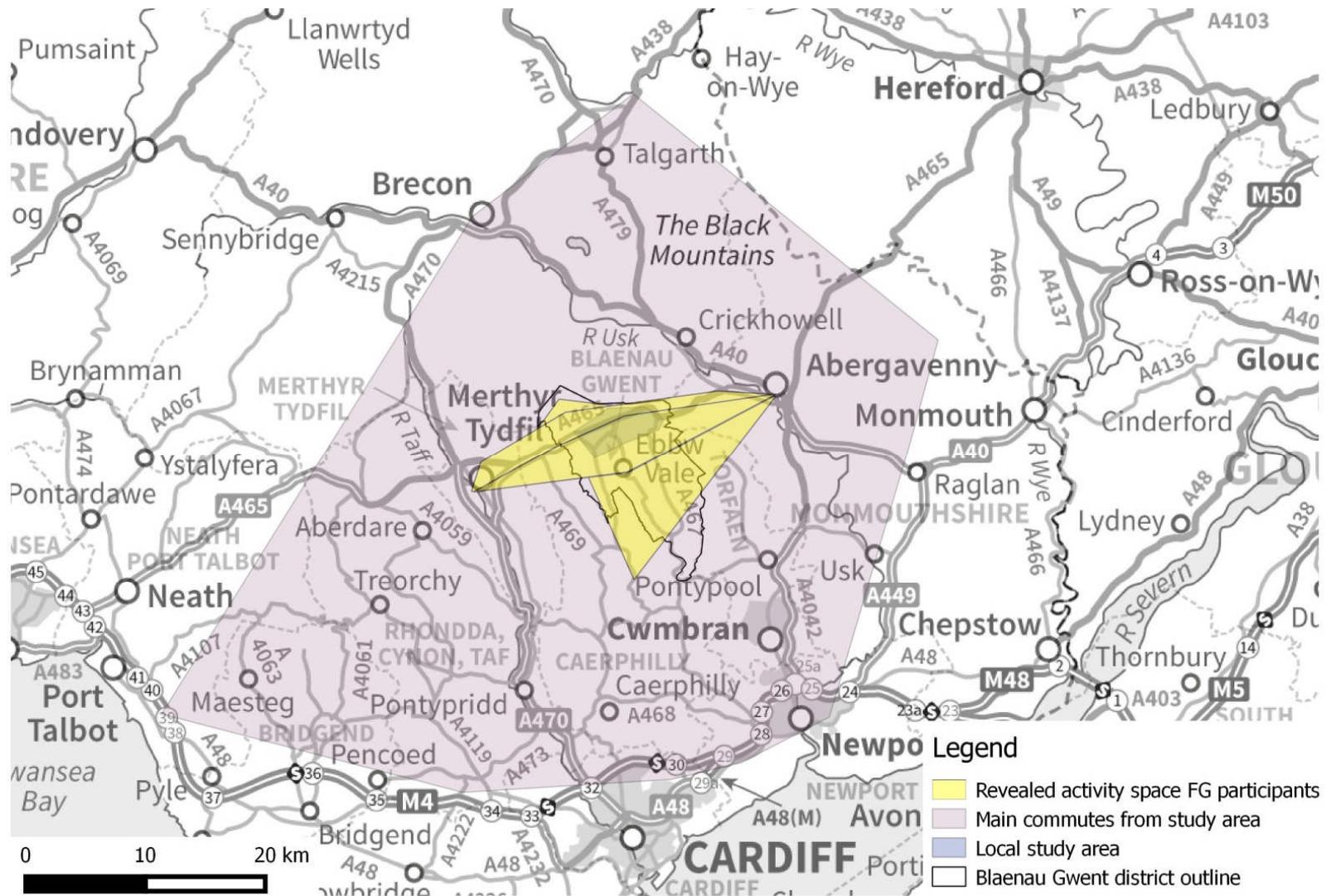
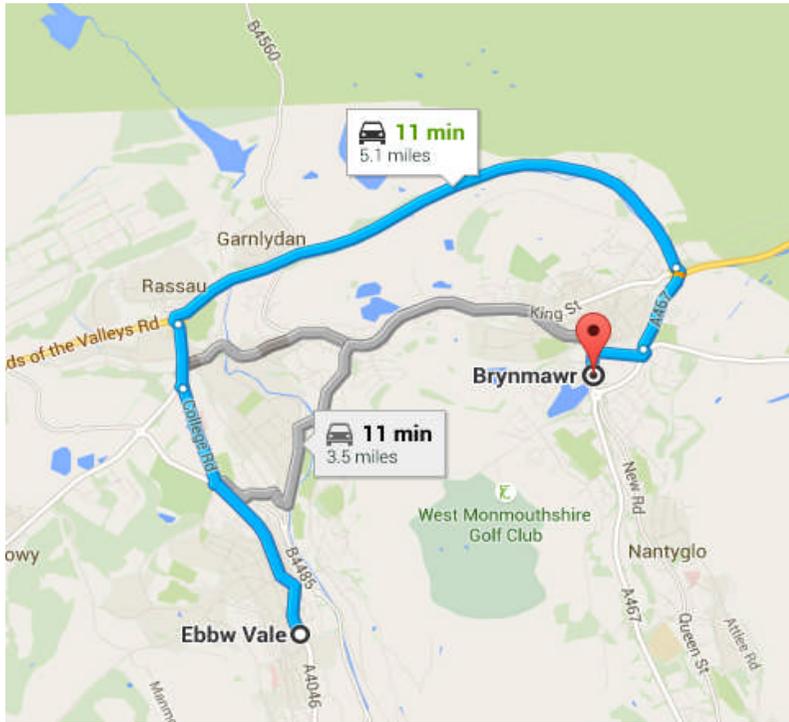
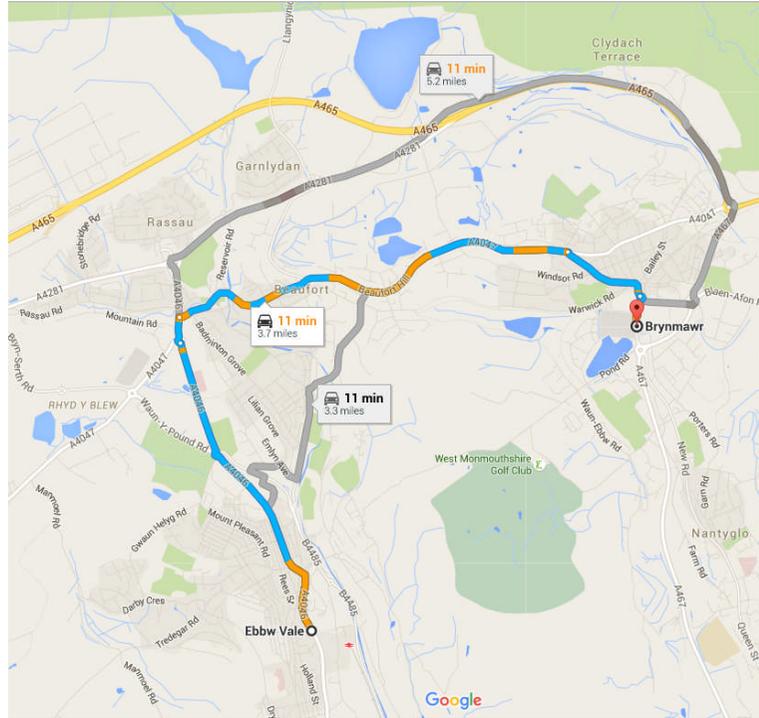


Figure 6 Main commute areas are larger than participant revealed activity space



Recommended route 5.1 miles, 11 minutes. Use Old A465. Accessed May 2015



Recommended route: 3.7 miles, 11 minutes Use A4047 Accessed December 2015

Figure 7 Comparing Google Maps direction before Section 3 opened and after.

5.2.3.4 Accessibility analysis using a participatory mapping exercise

Participants in the focus groups were asked to identify which areas they considered were easy or difficult to access. The results of this are shown in Figure 8 below. It is notable that the Rassau industrial Estate was seen as difficult to get to suggesting problems of access to employment.

Focus group participants felt, accessibility to local destinations had decreased in the brief period following the opening of Section 3. This was due to the closure of the old A465 for de-trunking works which resulted in an increase in traffic on local roads. This should only be a temporary effect. These road works have also caused some confusion for locals and visitors, who have had difficulties in reaching some destinations as usual routes are diverted.

Residents, especially from the Tredegar area, reported experiencing severance effects. They also reported that problems with public transport remain, “the new road doesn't help commuting by bus” (Garnlydan FG2), but the Section 3 A465 scheme was not established to resolve public transport issues in the area.

5.2.3.5 Accessibility analysis relating to cycle infrastructure

Figure 8 illustrates the locations which focus group participants felt had a bearing on accessibility by active travel modes. The A4047, the area from Nant-y-Bwch roundabout and Bryn Bach Primary School and at the Llangynidr Road/ old A465 junction are all highlighted as places where there would be concern over cycling. The latter junction will become a key cycle infrastructure junction – the cycle route on the de-trunked old A465 will link to the B4560 which is a key recreational access point north into the National Park. The B4560 also links to the cycle path alongside Section 3. This could be a barrier to realising cycling accessibility benefits in the area both for utility and recreational trips.

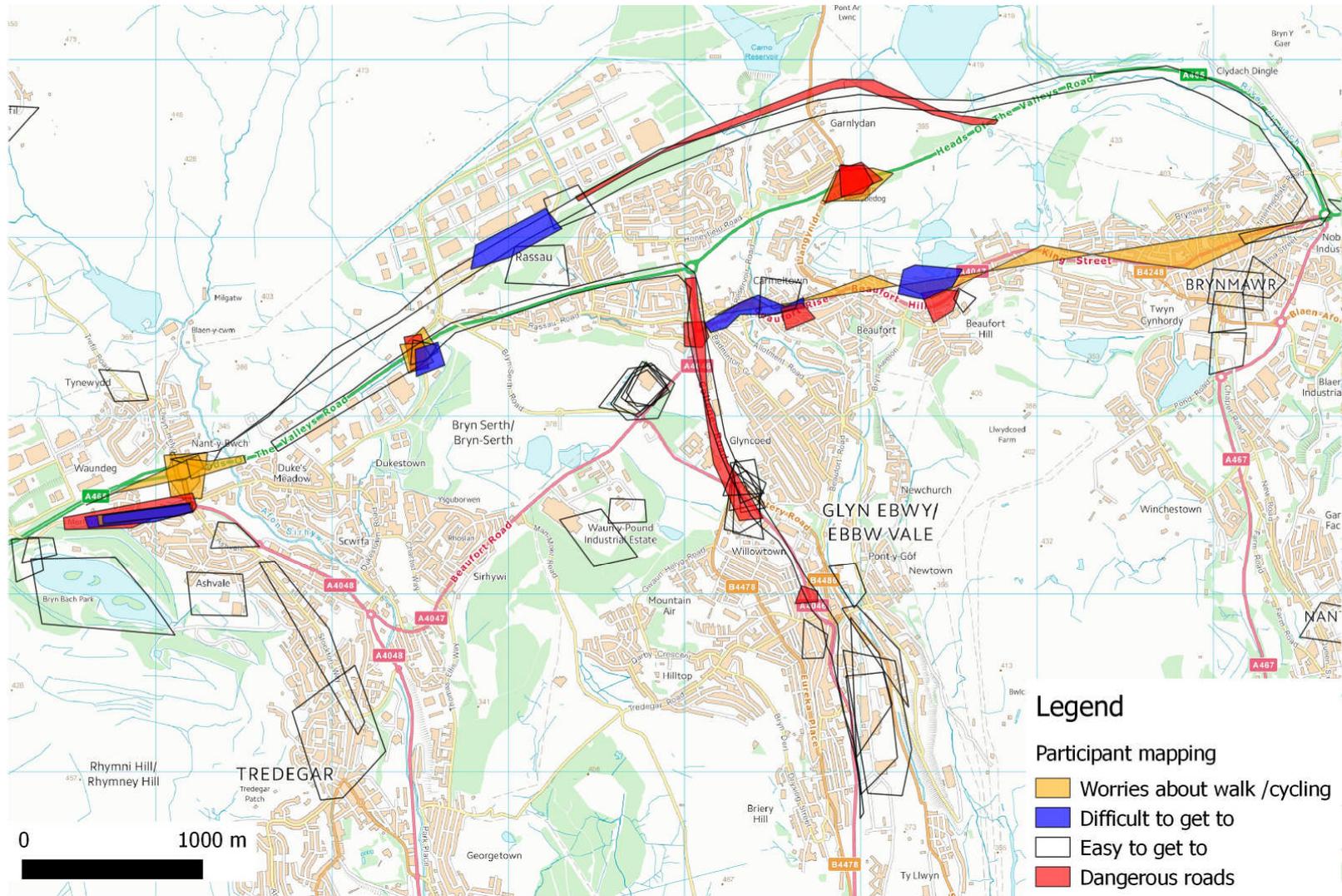


Figure 8 Locations marked by participants in post opening focus groups which relate to accessibility.

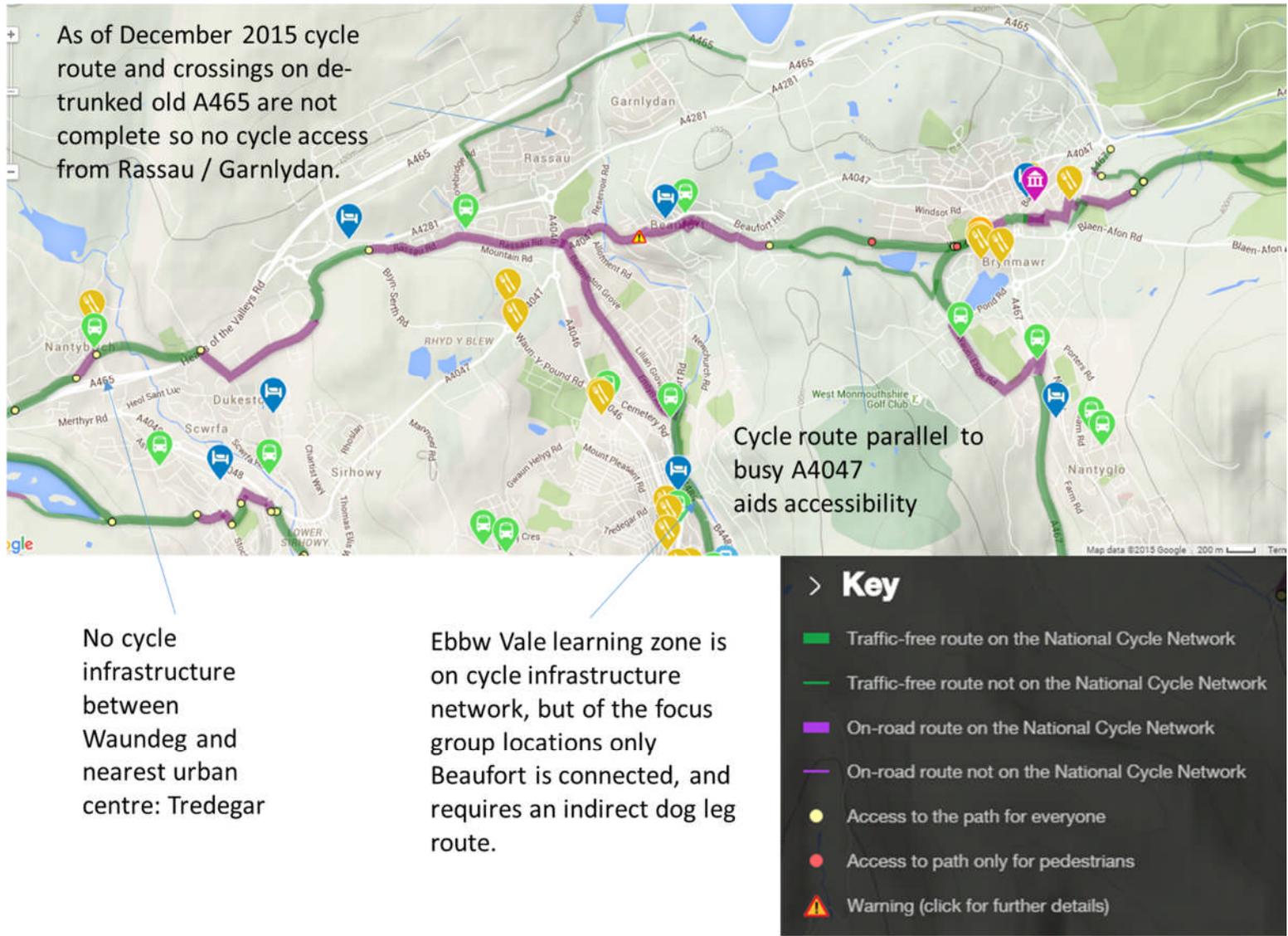


Figure 9 Cycle infrastructure Source: <http://www.sustrans.org.uk/ncn/map>

The new cycle route along Section 3 appears to encourage recreational cycling linking to other National Cycle Network trails. This route will make the journey by bicycle between Rassau and Garnlydan easier because the route has a shallower gradient than the existing route along the Prince Philip road which descends steep switch backs to cross the River Ebbw. Not all the focus group communities are connected to the cycle network and some local journeys would require a dog leg route. This is an issue that could be addressed by the local councils in future plans to encourage active travel in the area.

The focus group comments on new cycle infrastructures were mixed. Whilst participants saw the high quality surfacing of the new paths as being a positive, they also pointed to roads and links which acted as barriers to use of the cycle infrastructure. There were some examples of local people using cycle infrastructure for recreation, and a small number of utility trips. The majority of focus group responses regarded cycling as an activity mainly done by people visiting the area.

An interviewee (local planner) commented on the cycle infrastructure along Section 3 and the old A465 saying it would link to existing National Cycle Network trails and **make progress towards a more coherent network.**

Recommendation: The local district council should seek to build upon these investments to promote cycling and walking to local destinations as part of their Active Travel Plans.

5.3 Affordability

Affordability was not quantitatively assessed. These findings are derived from focus group exercises.

5.3.1 Overview of affordability impacts

- The socio-demographic profile suggests a significant proportion of households will be unable to afford to use Section 3.
- Junction placement is perceived as increasing journey time and fuel use for some local trips on Section 3.

- Regeneration which some feel may come as a result of Section 3 and the A465 corridor may not be affordable to local residents

5.3.2 Secondary data analysis on affordability

28% of local households have no car. 65% of the study area population are within the two most deprived quintiles of the Welsh Index of Multiple Deprivation. This suggests that many in the study area will struggle to afford to exploit the benefits provided by the scheme.

As mentioned in the discussion of accessibility, forecast travel time savings for car journeys, may impact on the viability of local public transport. This may impact directly on the cost and affordability of public transport or may cause other affordability issues if users are forced to switch modes. However policy interventions may mitigate any potential negative impacts, and the increased reliability of the new road could provide new opportunities for bus services.

5.3.3 Focus group findings on affordability

During the first focus groups, issues of affordability were raised as closely connected with accessibility. As has already been seen, there was a general perception that the car was the ideal mode to access local services in the area, but this was expensive and thus not affordable for a significant number of local residents (although car ownership in the area is generally high for the income profile of the communities, nearly a third of households do not have access to a car). Public transport and taxis were also considered to be expensive.

Issues of affordability emerged again in the second round of focus groups with regard to the increased distance that residents were forced to cover due to the closure of the former A465. A participant from Rassau said: “it’s not really hard to get to it’s just you’ve got to use more petrol and it takes more time”.

The question of affordability also emerged in the discussion with regard to the planned Circuit of Wales initiative: local residents said they would not be able to access and directly benefit from the new facility provided, as it will be targeted toward wealthier people outside the area, as is made clear in the words of a Rassau resident:

“To be honest an indie car track, who can afford a hundred and fifty pound a ticket for a day like? Nobody round by here”.

5.4 Safety and personal security

Safety and personal security included evaluation of appraisal documents, GIS analysis and focus group analysis

5.4.1 Overview of accidents impacts

The Initial Traffic and Collision Report⁵ forecasts accident rates one third lower on the new Section 3 than would otherwise be experienced on the old A465. The measurable impacts in this assessment stage were as follows:

New Section 3

- Accident reduction benefits will accrue to users of Section 3 who previously used the old A465.
- Study participants perceive that the greatest benefit from the new Section 3 will be a reduction in accidents on Section 3 compared to on the old A465 (pre-opening). However they also perceived a high risk of accidents at points on and close to Section 3 and the de-trunked old A465 which they believe have not been effectively addressed.
- The junction layout at Nant-y-Bwch roundabout increases the perceived risk of accidents to children and pedestrians from Waundeg
- The positioning of the Nant-y-Bwch roundabout is perceived to contribute to high levels of use by heavy goods traffic and perceptions of accident risk on Merthyr road.
- For local trips within the study area, focus group participants state they are less likely to use Section 3 and more likely to use the parallel links (old A465, A4047), due to habit and inconvenient junction placement.
- The 2015 forecast collision rate per km of road on the A4047 is more than double the 2015 forecast collision rate per km of road on Section 3.
- The greatest benefit from accident reductions will be realised by users of the new road.
- Children resident in Waundeg are perceived to have an increased accident risk at Nant-Y Bwch as are those within BrynBach Primary school catchment. These are more deprived areas.

⁵ Welsh Government, 2011. A465 DUALLING SECTION 3 BRYNMAWR TO TREDEGAR Initial Traffic and Collision Report September 2011. Arup document reference 10-7725.

- Few personal security issues were raised.

Former A465

- De-trunking of the old A465 removes some but not all of the accident hazards. There is a small speed limit reduction 60-50mph.

Cycle infrastructure and active travel

- Focus group participants raised issues of safety for pedestrians and cyclists. Segregated cycle infrastructure was perceived as a means of increasing safety where it formed part of a coherent network.

5.4.2 Accident analysis evidence from the appraisal process

The Initial Traffic and Collision Report forecasts accident rates one third lower on the new Section 3 than would otherwise be experienced on the old A465.

Specific junction layouts on the existing A465 were discussed in the Traffic and Collision Report which concluded that *“junctions on this section of the A465 (old road before Section 3 construction) have a higher collision rate than the average for the junction types and traffic volumes, particularly at Nant-y-Bwch and Garnlydan.”*

The Economic Assessment report stated the largest flow reductions are forecast to occur on the de-trunked old A465. Some localised increases in traffic flow on routes accessing the new Section 3 were forecast.

As the scheme has only just opened it is too early to examine actual accident statistics so the analysis of the impacts of the scheme on accidents can be based solely the ex-ante appraisal work and the qualitative fieldwork. The field work though only describes the situation on the ground shortly after opening.

Recommendation: A longer-term evaluation of accidents should be undertaken at 12 months and 36 months post opening in compliance with RSA Procedures. This should include a distributional analysis of the accidents according to severity, home location of the perpetrator and victims and the socio-demographics of those involved. Pedestrian and cycle accidents should also

be recorded in the context of an indicator of the level of pedestrian activity alongside the old and new sections of the road.

5.4.3 STATS 19 accident mapping

The data on accidents is held by the Transport Statistics Unit at the Welsh Government and known as STATS 19 data. Figure 10 shows accident locations, taken from STATS 19 data. This data relates to the five years before the opening of the scheme and presents the 'before' situation. In the figure the areas that focus group participants felt were a problem for walking and cycling, or were dangerous roads are also shown. The areas of main concern were the junctions on the old route of the A465 and road north of Ebbw Vale. The former A465 should experience lower traffic flows with the completion of Section 3. In the "do-something", with scheme scenario, the section of A4047 through Beaufort is forecast to have an absolute increase in traffic flow over the appraisal period. This would allow the opportunity for the local council to introduce physical measures to improve safety on these roads.

5.4.3.1 Comparing Section 3 accident rates with local A road accident rates

Table 6 shows a comparison of accident rates on the A465 pre-opening and the A4047 (a 3.9km link between the Brynmawr roundabout and the A4046). The collision rate per km of road is 61% higher on the A4047 than on the old A465 prior to the opening of the new road. The accident rate on the new Section 3 is forecast to be two-thirds of the old A465 pre-opening. The Initial Traffic and Collision Report calculates collisions per million vehicle km. The number of collisions per km of road is also a useful measure as it accounts for the longer exposure times of vehicles and pedestrians travelling along or alongside slower roads such as the A4047.

Table 6 Comparison of 2005 -2008 accident rates in the local area

Year	Number of collisions per year, A4047	Collisions per km, A4047	Number of collisions per year (old A465 Pre-opening)	Collisions per km, old A465 (Pre- opening)
2005	11	2.82	15	2.05
2006	17	4.36	10	1.37
2007	10	2.56	17	2.33
2008	7	1.79	10	1.37
Average over 4 years	11.3	2.88	13	1.78
Total over 4 years	45	11.5	52	7.12

5.4.3.2 Distribution of accident impacts

The users of the new section of the A465 are forecast to benefit from a road designed to meet the latest standards. Users of the former A465 are forecast to benefit from a reduction in the number and severity of accidents as there is a lower speed limit in force and the de-trunking of the road provides the opportunity to include more safety features by design. Study area residents will mainly be using the former A465 and local roads in preference to Section 3. Focus group respondents expressed concern at the design and speed limit on the former A465. Also our analysis of STATS19 data above suggests there is potential for displacement of exposure to accidents from Section 3 users to A4047 users.

Realisation of accident benefits for these users depends on the changes made to the de-trunked A465 and the local road network.

5.4.4 Focus group comments on safety and security

The reduction in car collisions was seen as the greatest benefit of Section 3 with several participants referring to particular accident blackspots such as the old A465 Llangynidr Road Junction at Garnlydan. There were positive comments about the

improved road design of Section 3 over the old A465. However there was also concern that changes included in the de-trunking would not fully remove the above junction hazard.

There was evidence that not all collisions in the area were related to poor design. Several respondents reported a culture of dangerous driving amongst some in the area. The view of some focus group participants was that the de-trunking design could have done more to reduce speeds and discourage dangerous driving.

5.4.4.1 Accident analysis relating to cycle infrastructure

Figure 10 shows areas where participants in the focus groups perceived walking and cycling to be dangerous. Some of these areas are related to the design of Section 3, while others relate to localised changes in traffic movements resulting from the completion of the new Section 3, de-trunking and the construction works. This suggests that the process of public engagement has in some specific instances failed, in the eyes of the public, to successfully influence the design solution. There is a perception by some focus group participants that the design team were more focussed on traffic flow and road carriageway design issues than perceived accident, severance and walking and cycling issues for non-road users.

The provision of segregated cycle infrastructure adjacent to the scheme has potential to reduce the rate of cycling related accidents in the area. There is no direct reduction of cycle accidents on the A465, as both the old A465 and Section 3 do not permit cyclists. However area benefits depend on cycling uptake as well as the bicycle level of service on the road and cycle infrastructure network in the area.

The area where most concern was raised over potential accidents was at Nant-y-Bwch, where the issue was a dominant concern raised in two of the focus groups. The subway under the old A465 between Waundeg and BrynBach was discussed in relation to personal security issues. It was seen as not ideal. However based on focus group analysis the fear of harm to pedestrians in road traffic collisions appeared to be greater than the level of personal security concerns. The interpretation of whether local residents felt accidents or personal security was the issue of greatest magnitude contributed to the severance and accidents issues at Nant-y-Bwch discussed elsewhere in this report.

Recommendation: *Welsh Government should undertake further close monitoring of the severance and pedestrian safety impacts should be taken forward at the roundabout and remedial action taken in collaboration with the local district authority if necessary.*

5.5 Air Quality

The Environmental Assessment concludes that, overall there will be an increase in emissions due to increased vehicle km, and that there will be some displacement of emissions. The measurable impacts in this assessment stage were as follows:

5.5.1 Overview of air quality impacts

- There will be some localised displacement of poorer air quality towards the new Section 3 route. In some cases the displacement is from less deprived areas into more deprived areas.
- The reduction of traffic flows along the route of the old A65 should result in some local air quality benefits.
- Overall Section 3 is predicted to result in an increase in total emissions of NO_x, PM₁₀, Carbon, CO and THC as a result of increased total vehicle kilometres driven.
- Up to 20% of the study area population (mostly in more deprived areas) may potentially be negatively affected by the changes in air quality, whilst the other 80% are likely to benefit.

5.5.1.1 Analysis of air quality derived from appraisal documents

Table 7 below summarises the anticipated distribution of the impacts of the changes in air quality. Columns 3-5 summarise the population potentially at risk of being negatively impacted by air quality based on population groups using the LSOA level of spatial resolution. The percentage of the study area population potentially benefiting from air quality change is shown in the final column.

Table 7 Summary of distribution of air quality impacts within the study area

Social group indicators			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)	% population beneficially impacted by air quality changes(6)
Resident population in the impact area	Income distribution quintiles WIMD quintile	1	15532	45%	3000	19%	10%	71%
		2	7169	20%	1473	21%	5%	74%
		3	7467	21%	1482	20%	5%	75%
		4	4480	13%	0	0%	0%	100%
		5	0	0	0	0%	0%	100%
	Children (<16)		5376	18%	602	11%	2%	87%
	Young people(Age 16-24)		3584	12%	374	10%	1%	89%
	Older people		5675	19%	479	8%	2%	90%
	People with a disability(Health greatly affects day to day life)		4779	16%	521	11%	2%	87%
	Black Minority Ethnic		NA	0%	0	0%	0%	NA
No car households		8363	28%	440	5%	1%	94%	
Households with dependent children		8961	29%	391	4%	1%	95%	

5.5.2 Mapping local displacement of vehicle emissions

The areas where the appraisal work predicts changes in air quality are shown in Figure 11 below. The pink layer shows areas where air quality is forecast to decrease between the situation in 2009 and the forecast air quality with the scheme in 2015. It shows a reduction in pollution in the less deprived “bottom Rassau” area. In the more deprived “Top Rassau” the line of the new road may increase pollution for some residents. It should be noted that the size of zones used in the appraisal work to represent deprivation, groups together housing estates which, on the ground, are actually quite different.

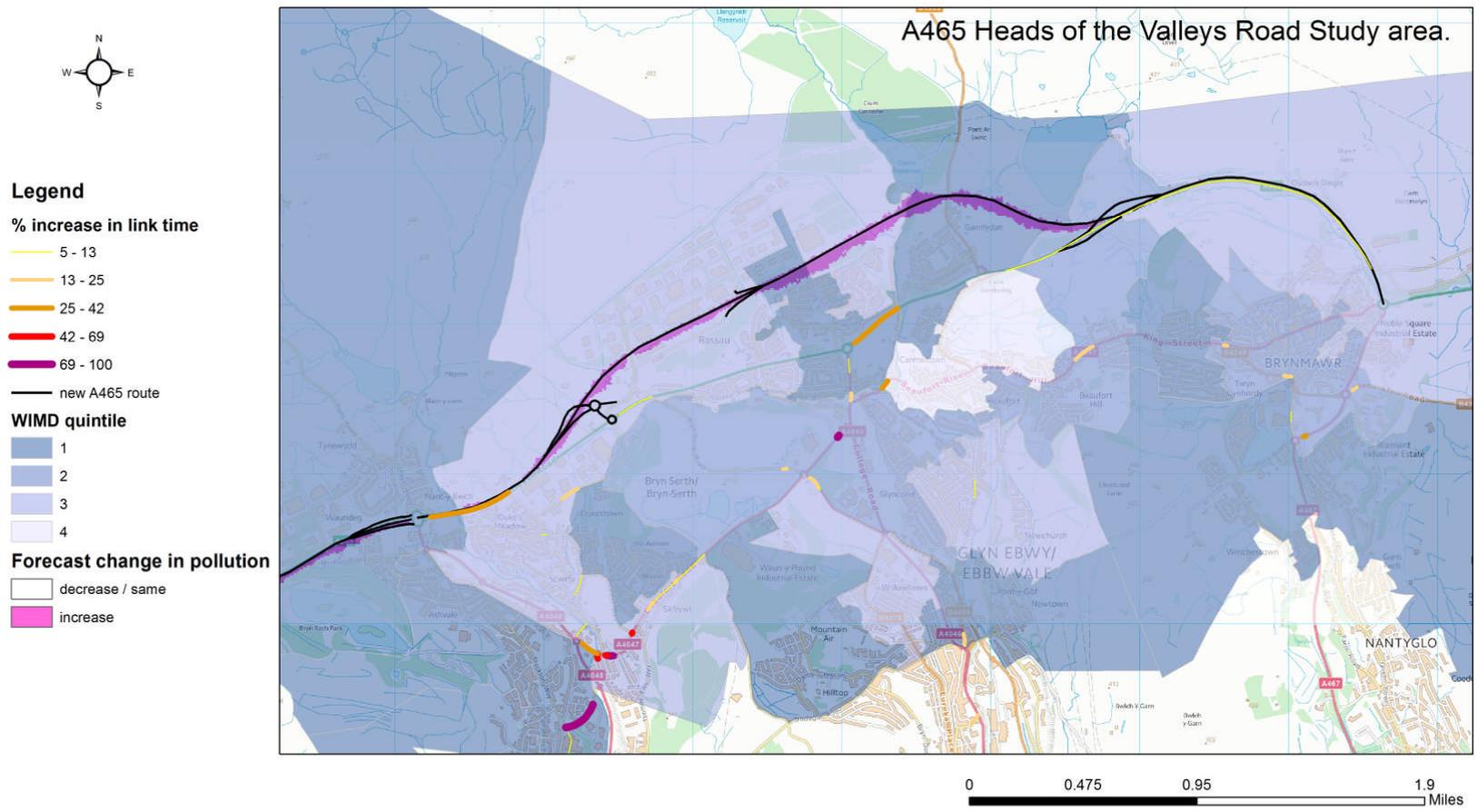


Figure 11 Change in emissions and areas of potential congestion overlain on LSOA deprivation (Quintile 1 is the most deprived. Pollutant described is NO_x).

5.6 Noise

Data used in this analysis is taken from the forecasting work carried out as part of the scheme appraisal based on modelling reported in the Environmental Statement⁶ A465 Dualling Section 3 Brynmawr to Tredegar Environmental Statement Volume 1.

5.6.1 Overview of noise impacts

- There is some local displacement of noise towards the new route of the A465. In some cases the displacement is from less deprived areas into more deprived areas.
- There is a reduction in noise along the former A465.

5.6.2 Analysis of noise derived from appraisal documents

The summary of noise impacts for Section 3 allowed for the implementation of mitigation measures. Rassau and Garnlydan were both forecast to have major beneficial and major adverse impacts as a result of the movement of the Heads of the Valleys road from the south to the north of these neighbourhoods. Nant-y-Bwch (Waundeg) and Dukestown were forecast minor adverse to moderate beneficial impacts. The differences in Brynmawr were forecast to be negligible.

5.6.3 Focus group findings on noise

Residents in all the focus group locations find the new road quieter than expected: “I wouldn't say it's any noisier than it was before” (Bryn Bach FG2). This may be due to the selection of road surfacing materials on the new road. Parts of the old road were closed at the time the focus groups were conducted so the whilst the old road should be quieter when it is re-opened as the traffic levels will be lower than before, the participants were not in a position to comment on the noise levels on the old road.

Some focus group respondents commented on the noise from Rassau industrial estate being greater than noise from the road.

Respondents in the Garnlydan focus group noted the displacement of noise from south to north, from the former A465 to the new Section 3, but the level of the noise

⁶ Welsh Government, 2012, A465 Dualling Section 3 Brynmawr to Tredegar Environmental Statement Volume 1

on the old road could not be properly gauged until the de-trunking works were complete.

Recommendation: *Noise levels should be monitored once the de-trunking works are completed and again when Section 2 work is complete and regional traffic is making use of the A465.*

5.7 Severance

Severance was measured by calculating the changes in pedestrian walk distances between home location and key destinations, such as local centres and schools. Perceptions of community severance were recorded using focus group data.

5.7.1 Overview of severance impacts

- Reduction in speed limit from 60 to 50mph on the de-trunked old A465 will have little significant influence on severance.
- Until the former A465 re-opens it is uncertain what the impact on severance will be of lower traffic levels on the old road.
- There is a perception of localised severance disbenefits for which mitigation measures may have been possible if more evidence had been gathered on social impacts at the design stage.
- Focus group evidence suggests children from the most deprived communities experience the greatest severance disbenefits.
- This assessment work raises the issue as to how severance is monetized in scheme appraisal and how assessment is made of the value for money of mitigation measures for severance impacts e.g. the value of including a high quality well lit underpass or over bridge to link communities.

5.7.2 Evidence on severance derived from appraisal documents

5.7.2.1 Traffic forecasting report.

The largest forecast reductions in traffic flow are along the de-trunked old A465. This suggests the potential for reduced severance in the design of the de-trunking scheme for the road. The reduction in the speed limit from 60-50mph will, in itself,

have negligible effects on severance but the if additional crossing points are introduced this could reduce the severance caused by the road.

5.7.3 Micro level analysis of severance at the Nant-y-Bwch roundabout

Figure 12 summarises severance issues identified during the study.

Figure 13 highlights the importance of verifying desktop assessments with qualitative research. The new route to the school (Y in Figure 13) from Waundeg (X in Figure 13) is shown in the purple. This route is shorter than the old route shown in orange. However the fieldwork shows that the crossing is dangerous and this is a cause of worry for the parents of the children who have to use it. This means that the severance caused by the road may be greater than anticipated in the appraisal process.

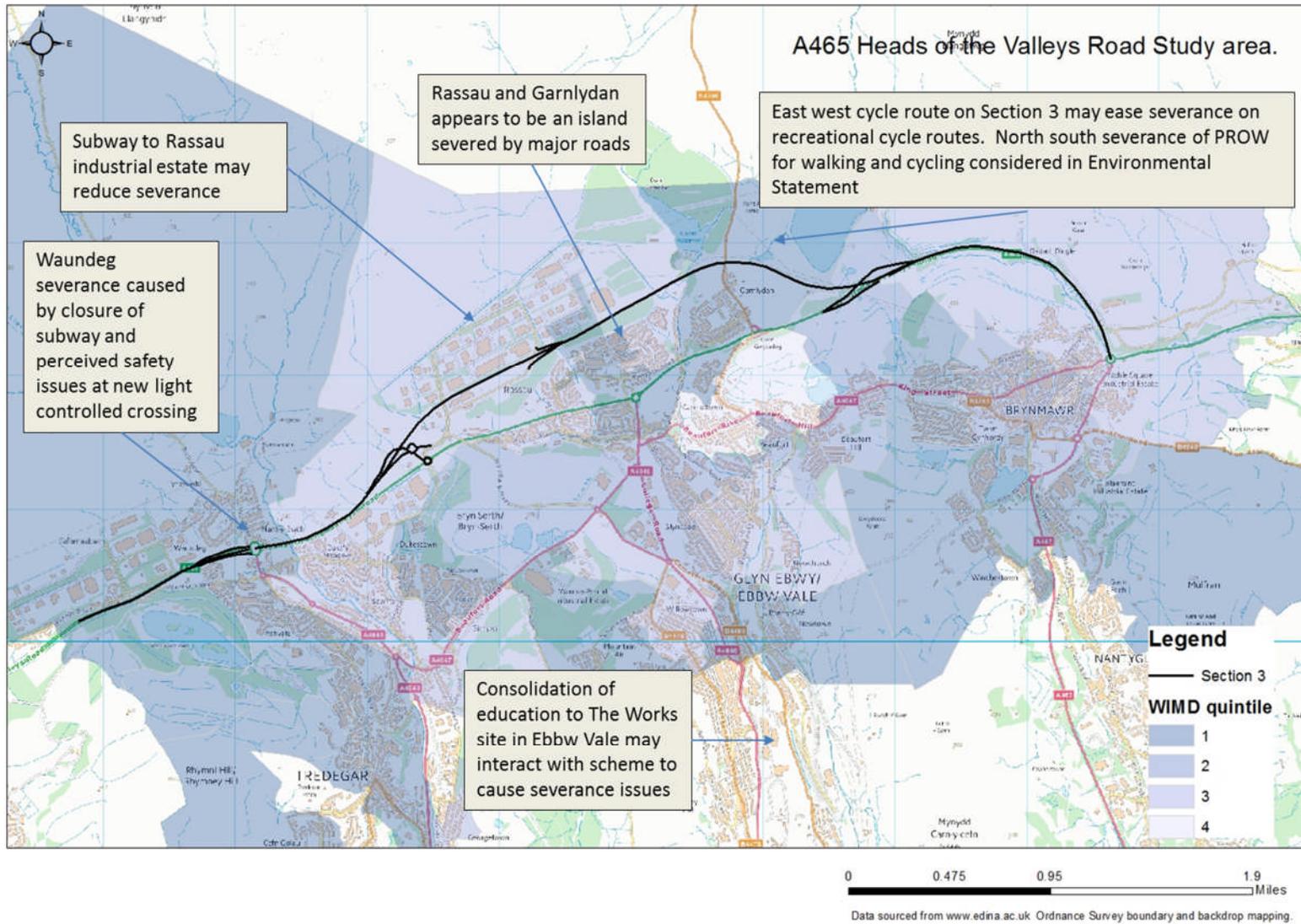


Figure 12 Location of potential severance impacts

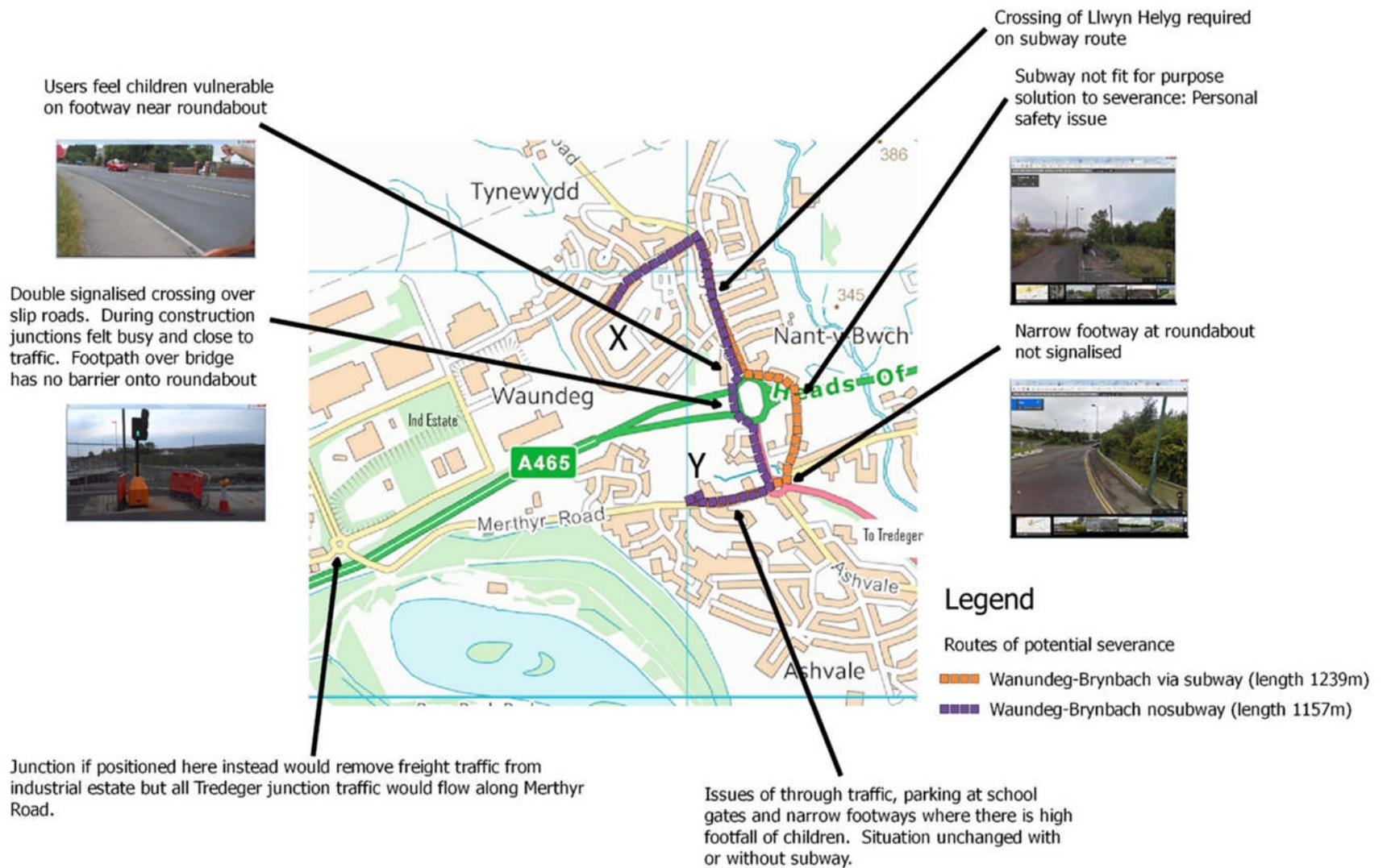


Figure 13 Severance assessment for Waundeg – Bryn Bach School

5.7.3.1 Focus group findings on severance

Waundeg has experienced increased severance due to the design of Section 3. There was a general local perception that attempts to mitigate these severance impacts had been extremely limited and short term.

Severance and perception of severance has increased since the closure of the old A465 for de-trunking works. In particular participants from Tredegar feel “cut off” or “ostracised”. Rassau residents perceive increased severance and unease to access other locations. The closure of the old A465 has generally created confusion in the local communities that are finding more difficulties, temporarily, in moving around the area and have often had to change their travel patterns.

5.8 Additional social issues which emerged during the qualitative fieldwork relevant to assessment of social impacts

5.8.1 Local user benefits of the A465 corridor once complete

The local user benefits of the A465 road once completed in its entirety was considered. The long construction period of the whole corridor has caused local user dis-benefits in terms of increased travel times and disruption over a long period. The nature of disruption is changeable causing further issues.

5.8.2 Local regeneration benefits of the A465 corridor once complete

Some participants commented on the ‘bypassing’ effect of Section 3. It has not been possible in this study to establish whether that this may be exacerbated once all sections are complete.

It must also be borne in mind that the A465 corridor improvements will reduce travel times for other settlements along and connected to the route. It is possible that agglomeration effects around settlements with for example more successful retail, commercial, leisure and tourism functions combined with shortened journey times along the corridor may create a further challenge to the viability of local businesses and services.

5.8.3 Local community engagement process.

Local community engagement and the interpretation of information gathered has propensity to exacerbate or mitigate impacts. Most participants reported a general satisfaction with the engagement process carried out by Carillion. However, this positive response needs to be contextualized within a fairly low level of expectation among residents with a feeling of resignation towards the possibility of not being *effectively heard*. This attitude of low expectation and resignation was found with respect to several aspects of the road construction: for example noise displacement and disruption due to the construction phase.

We found some examples of greater engagement which led to changes in construction details. The Garnlydan football ground represented one positive example. After a consultation, the original construction plan was modified to accommodate the needs of the local football club. There were however negative experiences around Bryn Bach and Waundeg, especially with regard to safety. The constructor's ability to satisfy local needs varied between areas and, possibly, costs of the intervention required. There were also issues around the timing of the engagement, participants in most of the communities felt engagement was only done after decisions were already taken. Local councillors appeared to be reactive rather than pro-active; they passed on information they had if asked. Some participants did not tend to engage with their local councillors and so do not feel 'kept in the loop' via this means of communication. Neither do they tend to search council websites and similar electronic media for information pertaining to their local area.

It is important to note however that Carrillion have gone much further than would normally be the case to engage locals and respond to community needs but nevertheless there are hard to reach groups that fall outside this process but can be captured using our social research methods.

5.8.4 Construction disruption

Carillion were appointed in 2010 to deliver the scheme. The principal work on site started in January 2013 and was completed in 2015. The scheme was officially opened in September 2015. Many residents have experienced severe disruption from the previous stage of construction on Section 1 of the A465 corridor and will continue to

do so from the Section 2 construction , which is directly to the east of the study area is scheduled for completion in 2018 (<http://a465gilwern2brynmawr.co.uk/scheme-plans/>). The social (and economic and environmental) impacts of this disruption is not currently assessed anywhere within scheme appraisal in the UK, but can have a serious detrimental effect on local people's quality of life and accessibility, as was noted within the focus groups. Although some efforts were made to mitigate some of these direct effects, issues such as increased dust, machinery noise, heavy-plant vehicular access nuisance on small side roads and most importantly general traffic displacement onto other roads was generally considered to have been poorly managed. Also the cost of increased journey times for this long period of construction disruption is not included within any cost benefit analysis.

6 Conclusions and recommendations of the study

6.1 Conclusions of the social assessment

The vast majority of the study participants described the new road as generally a good thing, especially in terms of supporting the local economy. In particular, people noted that without the scheme there would be no opportunity for local regeneration, whereas with it there is potential to attract new businesses and homes to the area. There was general consensus amongst focus group participants and interviewees that the proposed Circuit of Wales motor track site could not have been negotiated without the new road.

Once completed in its entirety, the new road will significantly improve car journey times to the two key Swansea and strategic centres to the east of Abergavenny. It will also reduce road traffic collisions, which were unanimously seen as a problem of this section of the old A465 road. People were largely unable to comment on the benefits of the de-trunked sections of the old A465, as it had not fully re-opened at the time of the study.

The study also identified some negative, but highly localised and design specific perceived impacts of the scheme. In most instances, people felt that these issues could have been resolved during the design phase of the development had a full ex ante social assessment been undertaken.

By moving away from the most commonly utilised “the average person” perspective this social assessment has been able to highlight where the significant localised dis-benefits from the scheme occurred. They most often affected the most deprived residents living in the study area and particularly those households without cars, who would also reap none of the journey time saving benefits of the scheme.

The detailed observations from the study are:

- The new A465 will allow quicker journey times along a strategic route and will provide access to more employment opportunities for local people with access to a car. In particular, the opening up of new employment opportunities in Swansea and Merthyr Tydfil was noted, as well as the potential to access the major shopping centres in these destinations. Faster car-based journeys to the

local hospital and shops in Abergavenny were also seen as positive benefits of the new road, once Section 2 is completed.

- For the households without a car, which accounts for 28% of all households in the study area, there will be no noticeable improvement in their accessibility to employment or other key activities. The population segments which are less likely to have car access (e.g. non car households, children, young people, and the elderly) are less likely to benefit from travel time savings compared to those in the segments of the population with access to a car.
- Local residents generally feel that the noise mitigation measures have worked. There were also no local concerns about air quality impacts from the scheme. Approximately 80% of all households will benefit from the improvements in air quality, with a maximum of 20% likely to suffer from increased exposures. It is unlikely that these levels will exceed World Health Organisation recommendations.
- GIS analysis suggests that there will be some localised displacement of poorer air quality towards the new Section 3 route and in one case the displacement is from less deprived areas into more deprived areas at the north end of the Rassau estate. This displacement effect could only have been avoided at the design stage of the project if the route had been taken further north above the industrial estate. It is unlikely that such a proposition would have succeeded past the appraisal stage of the project due to the cost and environmental sensitivities of this alternative route.
- By far the main negative local concern about the Section 3 of the A465 came from local residents of the Waundeg estate and concerned the roundabout design and pedestrian facilities at the Nant-Y-Bwch junction. Waundeg is particularly deprived and also has the highest reliance on walking in the study area due to low car ownership levels within households. This has been an on-going issue of local public concern during project construction and a number of interim measures have been made by Carillion to mitigate the problem during the construction phase. New Toucan crossings are now in place on the two slip roads at the roundabout but these are perceived by local residents and the headmaster of the local school to be inadequate for guaranteeing pedestrian safety. The local community has suggested several alternative measures,

including the introduction of a pedestrian underpass or a pedestrian footbridge. Both would be difficult to construct given the alignment of the road. Other non-technical solutions include the introduction of a school bus, a school traffic warden, or more integrated public transport services into Tredegar. These measures are outside of the jurisdiction Welsh Government to enact and remain the responsibility of the local authority, which says it is unable to intervene due to budgetary constraints.

- The A465 corridor upgrade as a whole could potentially bring significant regeneration benefits to the local area, if properly coordinated with other local planning and policy measures. The links between the scheme and local authority regeneration activity were not always apparent. This represents an opportunity for the future. Despite regular interaction between the Welsh Government Highways Department and the Blaenau Gwent District Council during the construction phase of the scheme there seems little thought within the local authority on how to maximise the potential of the new road or the traffic-calmed old road and new cycle ways to deliver local community benefits. Construction disruption has long term impacts on accessibility which are not currently assessed anywhere within scheme appraisal in the UK, but can have a serious detrimental effect on local people's quality of life and accessibility, as noted in the focus groups.

6.2 Policy recommendations

1. When the last section of the A465 corridor is completed an assessment of cumulative social impacts of the corridor should be undertaken. This is because many local area effects will not be fully established until this time.
2. It has been recommended to Welsh Government that further close monitoring of the severance and pedestrian safety impacts should be taken forward at the roundabout and remedial action taken in collaboration with the local district authority if necessary.
3. It is recommended that the local district council should seek to build upon these investments to promote cycling and walking to local destinations as part of their Active Travel Plans.
4. It is recommended that a longer-term evaluation of accidents should be undertaken at 12 months and 36 months post opening in compliance with RSA Procedures. This

should include a distributional analysis of the accidents according to severity, home location of the perpetrator and victims and the socio-demographics of those involved. Pedestrian and cycle accidents should also be recorded in the context of an indicator of the level of pedestrian activity alongside the old and new sections of the road.

5. Noise levels should be monitored once the de-trunking works are completed and again when Section 2 work is complete and regional traffic is making use of the A465.

6.3 Methodological recommendations on the new approach to social assessment

1. In future, a full social assessment of a transport scheme should be undertaken as an integral part of the scheme appraisal. Local policymakers can then consider the social impacts of projects in equal balance with environmental and economic considerations.
2. A social assessment should be conducted during both the ex-ante appraisal and ex-post evaluation of schemes and feedback loops developed to improve the overall design of schemes.
3. Assessment and ex-post evaluation should be staged to consider the effects of each phase of a multi-part scheme (such as the A465 corridor). Assessment should also be carried out following full completion of any ancillary works, which may be sometime after the official opening of the new scheme. Social impacts often do not become apparent until after this settling in period.
4. In a similar way to which a 5-year after care arrangement is in place to consider environmental issues, a similar arrangement could be put in place to consider the longer-term effects of negative social impacts, such as accidents and severance.
5. Combining fieldwork results with GIS analysis allows quantified results to be checked against other evidence, verifying results and highlighting particular locations where trusting aggregate quantitative data alone could produce misleading conclusions. The desktop mapping exercise should be supplemented by field visits to uncover any particular local variations within these areas that could be relevant.

6. For social impact analysis, data is needed for the trips made by affected groups, regardless of mode, and for active travel trips. The analysis of bus ticket data including concessionary bus travel and household travel diaries would provide information on the full range of trips undertaken in an area. Accessibility analyses should consider the impact of a scheme on *short as well as longer distance* trips.
7. A data archive protocol and storage facility should be set up for all transport appraisal and evaluation projects. Local fieldwork exercises with communities can increase the chance of engaging with hard to reach groups who are most likely to experience social impacts but least likely to engage with even the most sensitively designed and responsive public engagement exercises. The use of simple recruitment protocols with local stakeholders and the design of focus group activities can make the fieldwork more practicable.
8. Qualitative work, based on interviews with community workers, may also assist in the identification of particular vulnerable groups. Focus groups would assist in understanding the local context, akin to field studies, undertaken for environmental assessment.
9. It is a recommendation that social assessments are incorporated into WeITAG guidance on the design of all such future projects.

6.4 Links to broader policy agenda and further development of social assessment

Social assessment has been an underdeveloped and underutilised afterthought in economically dominated transport appraisal frameworks such as WebTAG.

However this study and its related reports note that:

- The impacts of transport planning and scheme assessment are closely linked to regeneration planning and active travel legislation.
- There is at present no practical framework for considering wellbeing in transport planning and scheme assessment. Developments of such a framework could enhance SDI/ social assessment methods.
- Adding social assessment to WeITAG places social issues at the heart of a more learning based appraisal and evaluation process. The methodology used in this study is in line with this approach.

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).

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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