



## Chepstow Transport Study WeITAG Stage 1 (Strategic Outline Case) Final Report

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(Strategic Outline Case) - Final Report

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### **Supporting Information**

Impacts Assessment Report

# Glossary of Terms

AST	Appraisal Summary Table
BCR	Benefit to Cost Ratio
CPO	Compulsory Purchase Order
DM	Do Minimum
EIA	Environmental Impact Assessment
KSI	Killed or Seriously Injured
LDP	Local Development Plan
NEC	New Engineering Contract
NYA	Not Yet Assessed
PM	Project Manager
PSSR	Preliminary Sources Study Report
PVB	Present Value of Benefits
MCC	Monmouthshire County Council
GCC	Gloucestershire County Council
FoDDC	Forest of Dean District Council
SAC	Special Area of Conservation
SINC	Site of Importance for Nature Conservation
SMART	Specific, Measureable, Achievable, Realistic, Time-based
SSSI	Site of Special Scientific Interest
TUPE	Transfer of Undertakings (Protection of Employment) Regulations
VfM	Value for Money
WBOFGA	Well-being of Future Generations (Wales) Act 2015
WebTAG	UK Transport Appraisal Guidance
WeITAG	Welsh Transport Appraisal Guidance
WTS	Wales Transport Strategy
IAR	Impacts Assessment Report
LDP	Local Development Plan
LTF	Local Transport Fund
LTN	Local Transport Network
NTP	National Transport Plan
WG	Welsh Government
WSP	Wales Spatial Plan

# 1. Introduction

## 1.1 Context

The border town of Chepstow is located within the county of Monmouthshire, in south east Wales with a population of approximately 12,350.<sup>1</sup> It is located next to the River Wye, which at this location provides a border between England and Wales. Gloucestershire lies on the English side of the River Wye.

The centre of Chepstow is located to the west of the River, and the residential areas of Tutshill and Sedbury situated to the east (see Figure 1.1 and 1.2).

Chepstow has a bus station which is served by both local and regional services and a train station which is located on the Chepstow line served by Cardiff- Cheltenham and cross-country services.

Chepstow is connected by the following key strategic highway routes:

- M48, which provides a connection to the east over the old Severn Bridge to England and key cities such as Bristol and Bath and to the west to the M4 providing access to Newport and Cardiff;
- A466 providing a north south connection from Monmouth in the north, through the Wye Valley Area of Outstanding Natural Beauty to Chepstow in the South (and onwards to the M48);
- A48 which provides an east west connection from Southwest Gloucestershire and the Forest of Dean in the east and to Newport in the west via Langstone. The A48 travels east to west through the centre of Chepstow, crossing the River Wye and travelling up Hardwick Hill connecting to the A466 (which southbound provides a connection to the M48). The A48 connects the communities of Tutshill and Sedbury with the centre of Chepstow providing an important local route but is also the key strategic route for all traffic wishing to travel from Southwest Gloucestershire / Forest of Dean to Bristol or Cardiff.

The B4228 is a minor route providing an alternative to the A48 for north-south journeys within Southwest Gloucestershire and providing access to Chepstow.

Chepstow and the wider area is currently facing a number of factors of change:

- The removal of Severn Bridge Tolls in December 2018 and increases in house prices within the Bristol region placing potential pressure on the local housing market;
- The production of new Local Development Plans (for both Monmouthshire CC and Forest of Dean District Council);
- Pressure for development within south east Monmouthshire and the Lydney area within the Forest of Dean;
- Implementation of the Cardiff City Region Regeneration plan and the associated transport aspirations including implementation of the Metro.

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<sup>1</sup> 2011 Census data

These are discussed in more detail in Chapter 2: Strategic Case.

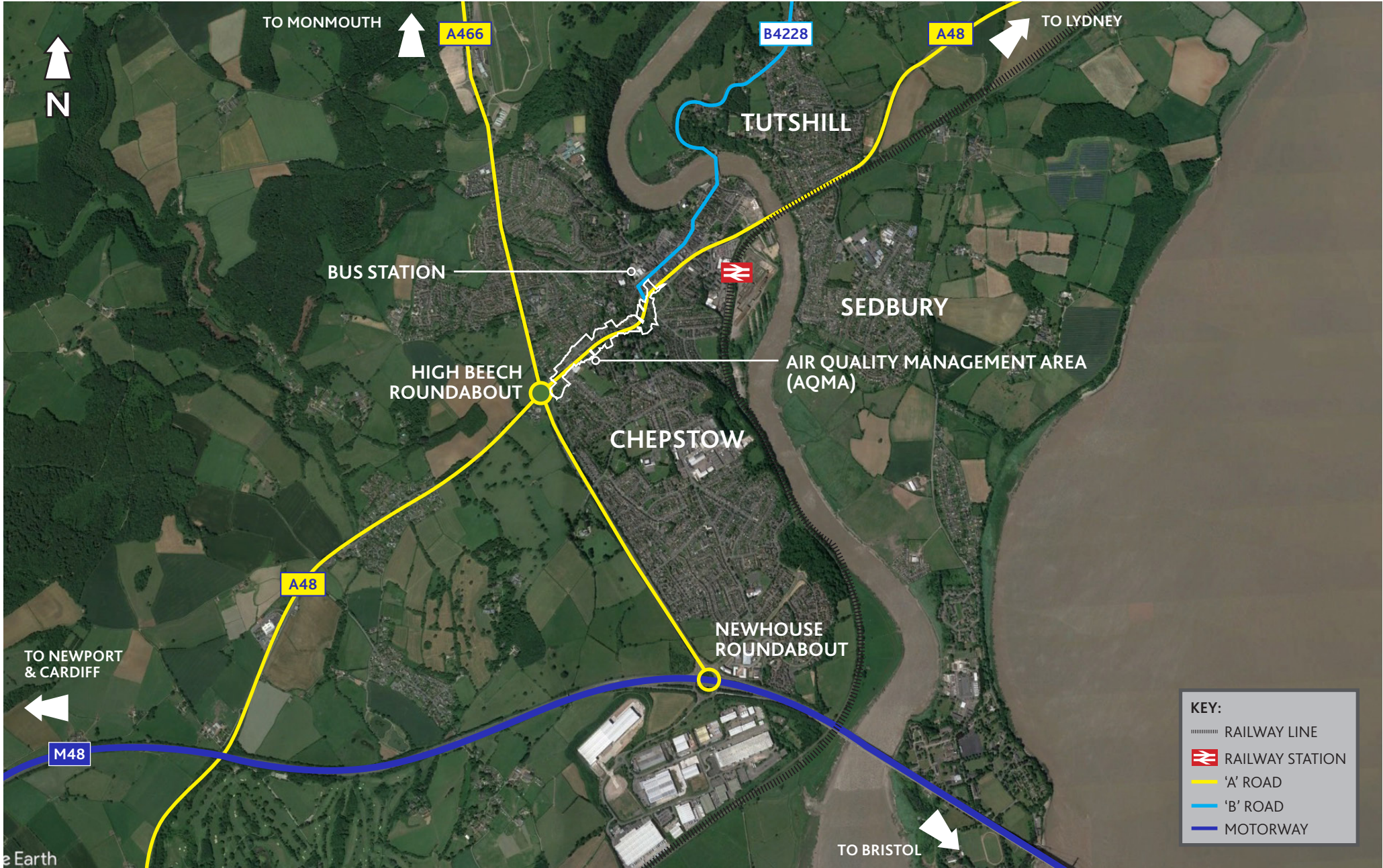
This WeITAG Stage 1 (Strategic Outline Case) study (jointly commissioned by Monmouthshire County Council and Gloucestershire County Council) has a focus of the route corridor of the A48. However, consideration has been given to the wider issues and impacts along the A48 corridor from Lydney in the east to Chepstow in the west.

***Figure 1.1 Chepstow and Regional Area***





***Figure 1.2 Chepstow Area***



## 1.2 Background

Very few journey alternatives exist for those wishing to travel eastbound from Chepstow into Southwest Gloucestershire or westbound from Southwest Gloucestershire to Bristol or Newport / Cardiff other than travelling along the A48. Due to its importance as both a strategic and local route corridor, the A48 currently suffers with congestion during peak periods, particularly at the bottleneck at Chepstow, where the A48 crosses the river Wye and travels through the centre of Chepstow. This has resulted in an Air Quality Management Area (AQMA) being implemented along Hardwick Hill (since 2007), due to the number of cars queuing along the A48 (see Figure 2.1 for a plan showing the extent of the AQMA).

Congestion within the locality of Chepstow along the A48 and along the A48 in Southwest Gloucestershire, is hampering the future growth and development of Chepstow and the wider south east Monmouthshire area and the development potential of Southwest Gloucestershire. It is problematic for local residents and businesses of Chepstow causing increased journey times and delay to local services such as public transport and school bus services.

With the removal of the Severn Bridge Tolls in December 2018, it is predicted that Chepstow (and the wider east Monmouthshire area) along with Southwest Gloucestershire will become attractive areas for residents of Bristol to relocate due to the more affordable house prices. The removal of the tolls will reduce the cost of commuting between England and Wales. Levels of congestion along the A48 are likely to increase if there is an increase in people relocating to the area, using the A48 as their key route to accessing the employment hubs of Bristol (and Newport and Cardiff).

It is therefore now timely to look into options for improving the A48 corridor and undertaking a Stage 1 WelTAG study (Strategic Outline Case).

Historically studies have been undertaken to make improvements to the A48 corridor. During the 1980s Gwent County Council investigated a number of potential improvement options including:

- A48 Hardwick Hill Improvements – These were subject to public consultation in 1988. Although the scheme was included in the Gwent Structure Plan (1991-2006), no improvement was ever provided, and the idea was abandoned by the Secretary of State in 1993/94.
- A48 Chepstow Outer Bypass (south of Chepstow): Options were considered including a crossing of the River Wye from the Thornwell estate more or less perpendicularly and continuing through the western edge of Gloucestershire to the A48 between Tutshill and Sedbury. In addition, an option was considered that followed the railway but at an elevated position on a structure directly above it. A Chepstow Outer Bypass was included in the Gwent Structure Plan (1991-2006).

A rail-based study has also been produced which has looked at the study area route corridor. The 'Chepstow Rail Corridor Option Development & Appraisal, Final WelTAG 1+ Report, April 2011' looked at options for improvements to service frequency between Chepstow and Cardiff.

Since these route options / studies were produced local residents and businesses have continued to campaign for a solution to the congestion along the A48 corridor, with many calling for a bypass option to be implemented.

Gloucestershire County Council and local residents and businesses are also keen to see a solution to relieve congestion along the A48 corridor. The Gloucestershire Local Transport Plan includes a commitment under policy LTP PD 4.1 'To liaise closely with the Welsh Assembly and Monmouthshire Council to support proposals for the development of the Chepstow Outer Bypass'<sup>2</sup>.

### 1.3 WeITAG 2017 / Five Case Model

In 2017, the Welsh Government issued updated Welsh Transport Appraisal Guidance, which is used to appraise all transport schemes in Wales. The original guidance was issued in 2008.

The guidance has been used to appraise options developed as part of this Chepstow Transport Study to ensure that:

- As part of the Strategic Outline Case (WeITAG Stage 1), the appraisal process to produce a long list of options is compliant within current guidance; and
- An 'evidence' led approach has been adopted in selecting a short-list of options for consideration at the Outline Business Case (WeITAG Stage 2).

Throughout the WeITAG process, appraisal is based on the Five Cases approach, which is used by the Welsh Government and HM Treasury in business cases for projects requiring public sector funding.

It is particularly important that the methodology adopted for the Chepstow Transport Study is compliant with the Five Case model as the study covers a cross border area with some options developed located within England. English transportation schemes need to be compliant with the HM Treasury Five Case model in order to receive funding.

The Five Cases are as follows:

- The Strategic Case;
- The Transport / Economic Case;
- The Financial Case;
- The Commercial Case; and
- The Management Case.

The level of detail that is contained within each Case is dependent upon the WeITAG stage that is being undertaken. At the Strategic Outline Case (WeITAG Stage 1), which is the subject of this report, the Strategic Case has been fully developed and the Transport Case is an initial assessment only. The other Cases are in preliminary form only and would be developed further at later stages in the WeITAG process.

At Stage 1 of the WeITAG process the purpose is to understand the issues of concern, explore the context and to present a wide list of possible solutions, sufficient to be able to decide whether there are any solutions within the transport sector that are worth pursuing and to select a short list of options for more detailed consideration.

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<sup>2</sup> Gloucestershire's Local Transport Plan (2015–2031) – Policy Document 4 – Highways, page 11

At Stage 2 further investigation is undertaken into the shortlisted options.

Each of the long list of options as part of this Stage 1 appraisal has been assessed in terms of impact, using the following 7 point likert scale:

<b>Large positive (+ + +)</b>
<b>Moderate positive (+ +)</b>
<b>Slight positive (+)</b>
<b>Neutral (0)</b>
<b>Slight negative (-)</b>
<b>Moderate negative (- -)</b>
<b>Large Negative (- - -)</b>

A statement outlining the methodology for undertaking scheme appraisal is included in Appendix A.

## 1.4 Report Structure

This report is structured as follows:

- Chapter 2 – This chapter provides the Strategic Case. It outlines the case for change, clearly demonstrating a need for intervention and the problems and issues within the study and wider area. The chapter highlights the strategic fit both locally, regionally and nationally of the options developed. An outline of the output of the stakeholder consultation undertaken to investigate problems within the study area, the development of objectives and long list of options is also detailed;
- Chapter 3 – This chapter provides the Transport / Economic Case. It outlines the results of the qualitative assessment undertaken into the economic, environmental, social and cultural impacts of the long list of options appraised.
- Chapter 4 – This chapter provides the Commercial Case. This provides a summary of the aspects that will need to be considered in procuring any future options for implementation.
- Chapter 5 – This chapter provides the Financial Case. This chapter discusses some of the revenue costs that may be associated with the long list options, as well as highlighting the potential funding sources that may be available to undertake development work and implementation of a final preferred option.
- Chapter 6 – This chapter provides the Management Case. Details are provided of the potential governance procedures that may be put in place to project manage the future appraisal process and implementation of a final preferred option. An assessment of the deliverability of each of the long list of options is provided.
- Chapter 7 – This chapter provides a summary and conclusion to the report, recommending the short list of options and packages that should be taken forward for further WeITAG assessment. An outlined of the future data that may be required to undertake further assessment is also provided.

## 2. Strategic Case

The Strategic Case describes the problems and constraints associated with Chepstow. It outlines the case for change and the strategic fit of the transport interventions that have been proposed. It appraises these against a range of national, regional, and local policy documents and other key issues that have been highlighted in the area.

It also details the objectives that have been formed for the study.

### 2.1 Case for Change

The issues and problems identified within this chapter are supported through evidence obtained at a Stage 1 WeITAG (Strategic Outline Case) Workshop held with stakeholders. Attendees included representatives from Welsh Government, Monmouthshire County Council, Gloucestershire County Council and from the Forest of Dean District Council (a workshop report is included in Appendix B in the Impacts Assessment Report).

In addition, consultation was conducted with the following who were unable to attend the Stage 1 WeITAG (Strategic Outline Case) workshop:

- Sustrans;
- Highways England;
- Gloucestershire CC officers representing Highways Development Control, Public Transport and Rail.

Wider issues within the Monmouthshire, Southwest Gloucestershire and south Wales area have also been considered.

Spreadsheets detailing the output of the Stage 1 WeITAG (Strategic Outline Case) Workshop are provided in Appendix C in the Impacts Assessment Report. These provide a full list of all the issues and problems cited for the study area, which support the case for change.

Table 2.1 provides a summary of the problems identified for the study area. Further explanation and evidence for these problems is included in the following section.

**Table 2.1** Problems and Constraints within the Study Area

<b>Problem / Constraint</b>	<b>Evidence</b>
Congestion along A48: Eastbound congestion worse in evening, Westbound congestion worse in morning.	Delays to service buses – See IAR Appendix E Highways England and Welsh Government report into Toll Removal – See IAR Appendix H South East Wales Transport Model (SEWTM) model - See IAR Appendix D
Congestion at High Beech/A466 roundabout.	Highways England and Welsh Government report into Toll Removal – See IAR Appendix H
Current rat runs in operation which utilise old Wye crossing bridge and B4228.	South East Wales Transport Model (SEWTM) model – See IAR Appendix D
Network resilience - if the A48 crossing is closed very few alternatives for crossing the Wye.	The area has a limited number of River Wye crossings with the only others in the region in addition to the crossing at Chepstow being at the old Wye Bridge (to Tutshill), Bigsweir Bridge, Brockweir and the Wye Bridge in Monmouth)
Lift share parking taking place on A466 within lay-by's causing a safety issue with high numbers of cars pulling onto highway during evening peak.	Cars parked in lay-bys. Historic Sewta Park and Share study identified car sharing in this location.
Growth in South Gloucester and Bristol placing pressure on traffic levels on A48.	Highways England and Welsh Government report into Toll Removal – See IAR Appendix H
Proposed developments around Lydney area identified in Development Plan for the Forest Of Dean District Council may be constrained by A48. Housing growth in Lydney area is likely to increase traffic movements along A48 through Chepstow.	Information provided by Highway Development Control officer from Gloucestershire County Council
AQMA - Air quality exceedance – Traffic related Nitrogen Dioxide. Air quality issues are caused by high traffic, heavy goods vehicles on a narrow road (with houses close to kerb side), a steep hill and junctions/roundabouts that increase stop/start.	Air Quality Management Area in Place since 2011
Mineral deposits could affect line of any potential alternative road routes.	MCC LDP constraints and deposits plan. WelTAG Stage 2 would include desktop preliminary sources study.
Housing growth - expanding local communities in Chepstow and wider South East Monmouthshire will place greater pressure on the existing highway network.	Consultation with MCC Planning Officers and Forest of Dean District Council Planning Manager
Lack of connectivity across the Wye and across the A48.	The area has a limited number of River Wye crossings with the only others in the region in addition to the crossing at Chepstow being at the old Wye Bridge (to Tutshill), Bigsweir Bridge, Brockweir and the Wye Bridge in Monmouth)
Toll removal could make traffic flows on A48 higher due to cheaper housing in Chepstow and South East Monmouthshire – could encourage Bristol commuters etc.	Highways England and Welsh Government report into Toll Removal – See IAR Appendix H
Chepstow severance - communities within Chepstow split by Wye River and A48.	River Wye severance feature for Tutshill and Sedbury. Many community facilities for these settlements are in Chepstow Town Centre across river Wye.



<b>Problem / Constraint</b>	<b>Evidence</b>
River Wye limits access for communities across the river.	See above.
No direct Chepstow – Bristol train. Consequently passengers have to change at Severn Tunnel Junction which can be problematic in terms of capacity and connectivity. This is a matter for the Wales and Borders and Great Western franchises as Cross Country do not stop at STJ. A direct service to the Bristol area via STJ would improve employment/leisure opportunities for residents in the Forest of Dean area. This will become more critical when the tolls on the Severn Bridge are removed as more people may move to the Chepstow area and commute to the wider Bristol area.	Timetable data presented in Appendix A
Rail – service to Bristol especially needs to improve (increase in frequency) not reduce. Maintaining/increasing stops at Lydney and Chepstow in the Wales and Borders and Cross Country franchise renewals will be crucial in encouraging more people to use public transport. May only be a couple of specified stops at Chepstow/Lydney in the Cross Country franchise with the additional stops being added by the operator subsequently. These will need to be included in the new franchise as a minimum requirement. This is a concern for GCC as the Cardiff to Nottingham service will be stopping at the new Worcester Parkway station next year and this will potentially impact on existing/additional stops at Lydney/Chepstow in terms of timetabling.	Cross Country Franchise yet to be determined.
Bus network shrinking – no rail station service.	Bus information provided in Appendix A
Lack of rail/bus alternatives.	Bus information provided in Appendix A
Buses - low frequency along A48, many are for local routes only.	Bus information provided in Appendix A
Delays for school buses serving Wyedean School in Sedbury coming south along the B4228 from St Briavels and queuing traffic at the roundabout where Coleford Road meets Gloucester Road. Reported problems about slow traffic across the A48 bridge over the Wye into Chepstow and thence into the town centre. Delays to the two buses operating routes into Chepstow (two hourly link buses 755 operated by James Bevan Coaches which run between Lydney and Chepstow calling at Sedbury and villages between the two towns, and the 761 local service that runs between Beachley, Sedbury and Chepstow). Afternoon and early evening peaks are the worst affected, though this varies from day to day.	Delays to service buses – See IAR Appendix E
Lack of alternative routes and travel options to use of private car within study area and traveling to and from study area.	See bus and Rail information provided in Appendix A.
Potential to restrict future developments due to lack of access and congestion on A48.	Highways England and Welsh Government report into Toll Removal – See IAR Appendix H
Any Chepstow scheme not identified in Welsh Government National Transport Finance Plan, therefore gaining funding for any solution may be problematic.	See National Transport Finance Plan
Development pressures on Monmouthshire and Gloucestershire side of A48. Within Monmouthshire about to start process of producing new Local Development Plan.	Consultation with MCC Planning Officers
Potential development of the Beachley camp (impact on A48 traffic levels).	Consultation with Forest of Dean District Council Planning Manager

Problem / Constraint	Evidence
As scheme cross border potential to have to secure a range of funding from a number of sources to implement a solution. This may mean meeting numerous funding conditions and priorities.	See Section 5.4
Lack of potential funding sources available at present within England or Wales to take forward a high value transport scheme e.g. highway scheme or large package of public transport improvements (bus or rail).	See Section 5.4
Different highway authorities for A48 (MCC and South Gloucestershire, plus Welsh Government and Highways England).	Cross border working will be required.
Cross border issues as A48 cross Wales and England and different local authority boundaries. These have separate agencies and priorities.	Cross border working will be required.
Poor for walking/cycling (A48 esp.).	See 'Active Travel' within section 2.1 Case for Change.
A48 Pedestrian safety - perception that unsafe to walk along A48 especially at river crossing causing a severance feature. At bridge barrier between footway and carriage way in place, however, narrow pathway and can create conflict between cyclists and pedestrians and a funnel effect (steps at end). Evidence that even experienced cyclists not using road for cycling but pathway at side.	See 'Active Travel' within section 2.1 Case for Change.
Topography - especially at Hardwick Hill area. Likely to discourage cycling to and from some trip generators / destinations in Chepstow.	See 'Active Travel' within section 2.1 Case for Change.
Area around A48 is constrained limiting the amount of new cycle infrastructure that can be implemented. Walking infrastructure and improvements maybe easier to provide.	See 'Active Travel' within section 2.1 Case for Change.

## ***Congestion & Air Quality***

Chepstow is located in a geographically challenging area, set between the River Wye and River Severn which creates a severance. There are a lack of alternatives to using the A48 route across the River Wye to connect to the communities in Southwest Gloucestershire. The A48 has high levels of traffic congestion which is worse for vehicles travelling westbound in the morning peak, and eastbound in the evening peak, which illustrates the directional demand for vehicles commuting out of the area to cities such as Bristol, Newport and Cardiff (and the wider regional area). Due to these high levels of traffic, a section of the A48 on Hardwick Hill through Chepstow is located within a designated Air Quality Management Area, and has been cited in a recent news article as one of the most polluted areas in the UK, and ranked in the top five areas for high levels of air quality pollution<sup>3</sup>.

In 2011 an Air Quality Management Plan was produced which listed a number of actions to be investigated to help to address the air quality issue. This WelTAG Stage 1 report is supportive of these actions and any final preferred option would help to implement the recommendations of the Air Quality Management Plan. The Air Quality Management area is included in Appendix A.

The communities of Tutshill and Sedbury, although located across the border from Chepstow in Gloucestershire, have Chepstow postcodes, and in order to access local services such as schools, surgeries and shops, communities are required to use the A48 for daily journeys.

Data outputs from the South East Wales Transport Model (SEWTM) model were obtained to evidence the traffic flows along the A48<sup>4</sup>. A full summary of the data is included in the Impacts Assessment Report Appendix D, but general observations are that traffic flows in the AM peak are higher travelling westbound, from Gloucestershire into Chepstow and beyond which is as expected. The highest level of traffic flows occur during the AM peak, and flows during the PM peak are similar for westbound and eastbound. Appendix A provides a summary of the flows from the model.

Additional data obtained from the SEWTM shows that there are a number of vehicles which are using Bulwark Road and Thornwell Road as a rat run to access Newhouse Roundabout and the M48 to avoid the traffic queuing to access the A48 / A466 High Beech roundabout.

## ***Public Transport***

### ***Bus Services***

There are very few public transport services to use as an alternative to the private vehicle if travelling from Southwest Gloucestershire along the A48 through Chepstow and beyond. The 755 bus service is the only main service which connects the communities of Tutshill and Sedbury across the River Wye into Chepstow, and these only run hourly at most. Figure A.2 in Appendix A illustrates the local bus services in the vicinity of Chepstow.

Table A.2 in Appendix A outlines the bus timetables and frequencies. The bus timetables and journey lengths are not conducive for commuting journeys into Bristol or Cardiff and currently do not offer a viable alternative to the private car.

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<sup>3</sup> 'UK's most polluted towns and cities revealed', 2 May 2018, BBC News online, [www.bbc.co.uk/news](http://www.bbc.co.uk/news)

<sup>4</sup> The model was able to provide current flow data but due to Chepstow being located on the model fringes could not provide reliable data regarding future predicted flows.

The congestion along the A48 impacts school buses and public transport services by increasing journey times and further limiting the services as a viable alternative. Anecdotal evidence from the public transport operators provided to Gloucestershire County Council evidences these delays for school buses serving Wyedean School in Sedbury coming south along the B4228 from St Briavels and queuing traffic at the roundabout where Coleford Road meets Gloucester Road. There are also reported problems related to slow traffic across the A48 bridge over the River Wye into Chepstow and then into the town centre. Running time information analysis of the bus times further supports these observations, and suggests delays to the two buses operating routes into Chepstow from Southwest Gloucestershire. Generally the afternoon and early evening peaks are the worst affected, although this varies from day to day. The full data is included in Appendix E of the Impacts Assessment Report.

### ***Train Services***

Similarly, the train services are also limited as there is no direct service from Chepstow to Bristol. Passengers are required to change at Severn Tunnel Junction (STJ) which often includes a wait on the platform for the connecting service and increases journey times. There are also at times issues with train capacity. Table A.3 in Appendix A outlines the current rail services between Chepstow, Lydney, Cardiff and Bristol and the average waiting times for connecting services.

Table A.3 illustrates that there are long wait times at Severn Tunnel Junction of on average 22 minutes to connect to services to Bristol from Chepstow or Lydney. Journeys with less waiting time connections are via Cheltenham Spa, however, these services are infrequent and the total journey time is significantly longer.

A passenger survey conducted in 2016 at Severn Tunnel Junction station by Monmouthshire County Council and STAG (Severn Tunnel Action Group) showed that 5% of the 421 respondents to the survey travelled from Lydney and the Forest of Dean to use the station, with 11% travelling from Chepstow (full survey data is provided in Appendix F of the Impacts Assessment Report). The split in mode of travel by passengers to Severn Tunnel Station from Lydney and Chepstow is shown in Table A.4 in Appendix A.

31 of the total 67 passengers surveyed who travelled from Chepstow and Lydney did so by road and 36 did so by rail. This indicates a demand for rail and road travel from Chepstow and Lydney using Severn Tunnel Junction Station as an interchange point. With 49% of all respondents to the survey using the station to travel to Bristol Temple Meads, improvements for rail service connections at Severn Tunnel Junction for services to Bristol travelling from Lydney and Chepstow would improve journey times for existing users. They would also potentially remove road journeys from Lydney and Chepstow along the A48 corridor to catch services directly at Severn Tunnel Junction.

Survey data contained within the Chepstow Rail Corridor Option Development & Appraisal Report undertaken by Capita Symonds (April 2011) shows that the majority of Chepstow train station users home locations are near to the station (within Chepstow). This is shown by the dark blue symbols on Figure A.3 in Appendix A.

Currently bus and rail services within Chepstow are not integrated enough to allow combined journeys which results in long wait times at the transport interchanges. This limits combined bus and rail journeys as an alternative method of transport to the private car along the A48 corridor.

An improvement in the rail services and interchange provision at both Lydney and Chepstow will make rail services more attractive as an alternative method of transport to a wide catchment of users, with more people further along the line towards Lydney likely to use the trains. This will therefore result in less people commuting by car along the A48 corridor, particularly as Lydney serves such a large geographical area as it is the only railway station located in the Forest of Dean.

Money has been made available to Monmouthshire County Council during the 2018/19 financial year via Welsh Government to investigate and undertake improvements to park and ride facilities at Chepstow Interchange. STAG (Severn Tunnel Action Group) are currently campaigning for improved interchange facilities at Severn Tunnel Junction station.

During the recent Wales and Border Franchise announcement (in operation from October 2018) it was detailed that a commitment has been made to increase services between Chepstow and Cardiff to hourly throughout the day by 2022 and that investment will be made in Chepstow station from April 2025<sup>5</sup>. This will help to improve rail as an alternative to the private car. However, to provide the full benefit to the A48 corridor it would need to be ensured that the new services also call at Lydney station and that improvements are made to Lydney and Severn Tunnel Junction stations.

### ***Active Travel***

There are currently very few opportunities for active travel along the A48, which is in part due to the topography of the area. Hardwick Hill is a very steep hill that is not conducive to cycling. The area around the A48 is constrained limiting the amount of new cycle infrastructure that can be implemented and therefore limiting the amount of cycling that can be encouraged in the area.

There is generally adequate provision for walking in the area, with the exception of the A48 at the River Wye crossing. There is a perception that walking along this route is unsafe, although there is a vehicle restraint barrier separating the footway and road. The pedestrian footway is narrow and can result in conflict between pedestrians and any cyclists using it, particularly due to the steps at the end which creates a funnel effect. It was raised at the workshop that even experienced cyclists are put off using the road due to safety concerns, and prefer to use the adjacent footway.

### ***Existing and Proposed Future Development***

Chepstow and Forest of Dean District Council Local Development Plan areas along the A48 corridor are shown on the Constraints Map (Appendix G of the Impacts Assessment Report). This illustrates the proposed developments which are detailed within existing adopted Local Development Plans.

Existing development proposals for the Southwest Gloucestershire area listed in the Forest of Dean District Council Allocations Plan 2006 to 2026 Adopted June 2018, which are likely to generate increased traffic along the A48 corridor include:

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<sup>5</sup> <http://tfw.gov.wales/whats-happening-south-east-wales> - date accessed, 2<sup>nd</sup> October 2018

- Sedbury and Tutshill – Land adjoining A48 and Bigstone Meadow, Tutshill (45 Dwellings), Land adjacent to Wyedean School, Sedbury (110 dwellings) and Land off Gloucester Road / Elm Road Tutshill (95 dwellings).

Lydney:

- AP40 - Lydney Town Centre, 1.9ha, retail and mixed use;
- AP43 - Pine End Works and Land to the North, 10.6ha, employment led mixed use;
- AP44 - Lydney Industrial Estate, 24ha, employment generating uses;
- AP47 - East of Lydney, 1684 dwellings and 25.8 ha of employment;
- AP48 - Foundry site, 5.7ha, employment generating uses
- AP49 - Mead Lane, 6.5ha, employment generating uses;
- AP50 - Mead Lane (existing employment area), 22ha, employment generating uses;
- AP51 - Railway Station Area, 2.2ha, improvements to station plus enabling development comprising employment, commercial and housing;
- AP53 - Holms Farm, 1.8ha, 27 dwellings; and
- AP54 - Augustus Way, Lydney, 6.5ha, 120 dwellings plus POS.

Within Lydney a large amount of new development is proposed. Proposals include employment, housing, leisure and retail use developments. Although some of the dwelling numbers are not yet finalised, the Housing Trajectory evidence indicates that 1319 new dwellings will be provided in Lydney between 2017 and 2027. During consultation with the Highway Development Control officer from Gloucestershire County Council, it was outlined that if a trip generation of 0.6 trips per new dwelling is assumed, 1319 new dwellings could generate 791 new traffic movements. These figures do not take account of new employment attracted trips. NOMIS data suggests that 9% of the population of Lydney work either in Wales or in Bristol, which is around the same number who work in either Gloucester or Cheltenham. The housing growth alone in Lydney is therefore likely to increase traffic flow on the A48 corridor by around 70 movements in the peak hours. This will create significant additional demand on the A48 which already evidences congestion and increased journey times in peak hours.

Existing development proposals for south east Monmouthshire listed in the Adopted Local Development Plan 2011 to 2021 which are likely to impact on traffic levels along the A48 corridor include:

- 10.95 hectares at Crick Road, Portskewett (allocated for mixed use residential and employment development) – up to 295 new dwellings;
- 16.1 hectares at Fairfield Mabey site in Chepstow for mixed use residential and employment development (around 450 units) – Planning granted;
- 11. Hectares at Rockfield Farm Undy for mixed use residential and employment, 270 new dwelling;
- 7.81 hectares at Vinegar Hill, Undy, allocated for residential development (around 225 new dwellings).

Both the Forest of Dean District Council and Monmouthshire County Council are beginning the process of producing a new Local Development Plan for their areas. Monmouthshire County Council are currently at the stage of calling for the first round of candidate site submissions (which closed in November 2018).

Both of the new local development plans area likely to include proposals to meet larger housing allocation targets than are included in the existing plans, which may result in the need for the authorities to consider more future proposals. This will create further pressure for development within Southwest Gloucestershire and within Chepstow and south east Monmouthshire. This is likely to increase traffic levels on the A48 corridor in the future if developments are undertaken, or could aid in constraining future development within these areas if capacity on the A48 is not available to meet the predicted traffic levels generated by the proposed developments.

### **Removal of Severn Bridge Tolls**

The existing Severn Bridge tolls on the M4 and M48 bridges that link England and Wales are charged in a westbound direction only:

**Table 2.2 2018 Severn Bridge Tolls**

Category/Description	Price
Category 1: Up to 9 seats	£5.60
Category 2: Small Bus up to 17 seats, Double Cab Pickup, Goods vehicles up to 3,500kg	£11.20
Category 3: 18 seats and more, Goods vehicles from 3,500kg	£16.70

These tolls will be removed for all vehicles in December 2018, saving regular users approximately £1,400 a year. With removal of the Severn Bridge tolls then connection between England and Wales will be enhanced. Whilst the move is estimated to boost South Wales' economy by £100m a year, significant changes in traffic flow are envisaged.

Whilst Monmouthshire benefits from being part of the Cardiff Capital Region, because of its geographic location, travel to neighboring areas in England, and especially to the Greater Bristol City Region is attractive. Chepstow, Caldicot, Magor and Monmouth are all closer to Bristol City Centre than Cardiff City Centre, and rail journey times from Severn Tunnel Junction are 5-10 minutes quicker.

The removal of the tolls will result in Southwest Gloucestershire, Chepstow and south east Monmouthshire being a more attractive place to live for commuters into Bristol due to the cheaper housing and cheaper commute (currently the Bristol housing market is experiencing a period of large demand leading to high house prices). This in turn will put more pressure on the A48 and increase congestion during peak times.

Data obtained from the SEWTM was unable to forecast the impact of the removal of the tolls specifically on the A48 at Chepstow due to the zone size originally included in the model. However, Highways England alongside Welsh Government in October 2018 published a report into the effect of the removal of the Severn Bridge Tolls (see appendix H of the Impacts Assessment Report). This report reviews the implications that the removal of the tolls is likely

to have on the surrounding road network and in turn identified areas that mitigation measures may be required<sup>6</sup>.

For the report, Highways England, in partnership with the Welsh Government, commissioned Arup to develop a traffic model which would provide an improved understanding of the likely impacts of toll removal on traffic conditions.

The report concludes that in the short term, moving from the current 'post concession toll' to no toll will increase traffic flows over the Severn Crossings by around 23%. By 2024, this increases to a 31% increase. It lists the A48 / A466 High Beech roundabout as one of the key priority areas for action within Wales once the tolls have been removed. Of the other key areas for action listed, all relate to the section of the M4 around Newport that would be relieved by the planned M4 Corridor around Newport (M4CaN) scheme which, if progressed, is due to open in 2024<sup>7</sup>. The A48 / A466 would not be relieved by the M4CaN scheme.

The study highlights the existing A48 and A466 queuing issues along Hardwick Hill during the peak periods and summaries that at the A48/A466 High Beech roundabout,

*'Existing congestion problems at this roundabout would be exacerbated by the removal of tolls, particularly on both A48 approaches in the AM peak with VCRs of 102% (westbound) and 104% (eastbound) in 2024. On the A466 northbound entry from the M48, PM peak queues can currently extend back to the M48 at times, and in 2024 without tolls, the VCR would reach 110%.'*<sup>8</sup>

Table 2.3 taken from the report shows the impact in terms of percentage change in flow without the tolls in 2019 and 2024.

**Table 2.3** Key Issues West of the Crossing – A48 / A466 Impact

Location A48 / A466 Chepstow Issue:	2019				2024			
	AM		PM		AM		PM	
	% change in flow	Vol/Cap Ratio (no toll)	% change in flow	Vol/Cap Ratio (no toll)	% change in flow	Vol/Cap Ratio (no toll)	% change in flow	Vol/Cap Ratio (no toll)
A48 WB entry	+4.4%	99%	+20.9%	68%	-3.6%	102%	+31.3%	92%
A48 EB entry	+17.2%	82%	+0.4%	70%	+11.5%	104%	+2.3%	78%
A466 SB entry	+6.0%	86%	-7.9%	40%	+6.2%	100%	+0.8%	42%
A466 NB entry	+27.8%	37%	+14.4%	103%	+33.0%	49%	+10.1%	110%

Source: Highways England Severn Crossing Tolls Model Build and Options Assessment Impact Assessment. 26 October 2018, page 39

<sup>6</sup> Highways England and Welsh Government: Severn Crossing Tolls Model Build and Options Assessment Impact Assessment. 26 October 2018

<sup>7</sup> Highways England and Welsh Government: Severn Crossing Tolls Model Build and Options Assessment Impact Assessment. 26 October 2018, page 45

<sup>8</sup> Highways England and Welsh Government Severn Crossing Tolls Model Build and Options Assessment Impact Assessment. 26 October 2018, page 38 & 39.



Table 2.4 shows the year in which capacity will be reached either with tolls or with no tolls. This clearly shows that capacity will be reached quicker with the removal of the Severn Bridge tolls. This provides evidence to support the need for a transport intervention within Chepstow, earlier rather than later.

**Table 2.4** Year in Which Capacity is Exceeded

Location A48 / A466 Chepstow Issue:	Year in Which Cap Exceeded				No of Years Accelerated	
	AM Peak		PM Peak		AM	PM
	With Toll	No Toll	With Toll	No Toll		
A48 WB entry	2024	2020	After 2029	2026	4	4+
A48 EB entry	After 2029	2023	After 2029	After 2029	7+	n/a
A466 SB entry	After 2029	2024	After 2029	After 2029	6+	n/a
A466 NB entry	After 2029	After 2029	2024	2019	n/a	5

Source: Highways England and Welsh Government Severn Crossing Tolls Model Build and Options Assessment Impact Assessment. 26 October 2018, page 41

To assist in alleviating traffic levels on the existing crossing and to provide better access for the community of Lydney and the surrounding area across the River Severn, proposals have been investigated for the provision of a third Severn Crossing. A recent study<sup>9</sup> undertook initial exploratory work to help determine whether a case exists for a Third Crossing of the River Severn, between Lydney and Sharpness (highway and/or rail crossing). The report discusses the impacts of another Severn Crossing on the A48, citing that it would result in a need for improvements along the A48 as another crossing will “encourage greater use of the A48 for travel through and north out of Chepstow”. Similarly, a rail option could help alleviate some of the issues with capacity at Severn Tunnel Junction, therefore improving rail access to Chepstow and surrounding areas.

***Cardiff Capital Region City Deal and Metro***

Alongside local issues within Chepstow that create a case for change, there are wider regional activities which also support the case for transport intervention within Chepstow.

The Cardiff Capital Region City Deal is a £1.28 billion programme which will achieve a 5 per cent uplift in the region’s GVA by delivering a range of programmes which will increase connectivity, improve physical and digital infrastructure, as well as regional business governance<sup>10</sup>. It covers the 10 local authorities within south east Wales including Monmouthshire.

Some of the key aspects of the deal include improvements to connectivity within the region and supporting new infrastructure. There is a commitment to spend £1.2 billion on the Capital City Region infrastructure including delivery of the South East Wales Metro.

A Regional Transport Authority has been set up to manage the implementation of this infrastructure.

<sup>9</sup> Initial Investigation, Third Severn Crossing, April 2017, Amey

<sup>10</sup> <http://www.cardiffcapitalregioncitydeal.wales/> date accessed 27<sup>th</sup> June 2018

Congestion is currently hampering the connectivity of communities within the A48 corridor in Chepstow and those communities within Southwest Gloucestershire trying to gain access to the Cardiff Capital Region. Improving connectivity and allowing access for all is key for the city deal. An intervention along the A48 corridor will support this by providing quicker and easier access to opportunities within the Cardiff Capital Region.

The south east Wales Metro includes proposals for improvement to the public transport network across south east Wales. As part of the recent Wales and Border Franchise announcement (the new operators KeolisAmey are being tasked with implementing the Metro proposals), it was outlined that 16 extra services per day between Cardiff and Cheltenham are to be provided. This will mean an hourly service for Chepstow train station throughout the day. This will assist in providing a more viable public transport alternative to journeys along the A48 corridor and supports the requirement for further interventions.

Table 2.10 provides the results of the assessment of how the long list of options will help to achieve the Cardiff Capital Region Strategic Objectives.

### ***Forest Economic Partnership***

A Forest Economic Partnership, a cross border group with a vision to make the Forest of Dean an attractive, vibrant and dynamic destination to live, work and do business has been set up. A dedicated transport and infrastructure sub group within the partnership has been formed.

Some of the key aims of the partnership include:

- Creating a bold vision to deliver sustainable economic growth in the Forest to 2050;
- Prioritise support for specific economic sectors in the Forest e.g. Advanced engineering, manufacturing, construction and tourism;
- Exploit the opportunity of the Severn Bridge Toll removal in 2018 and collaborate to develop a proactive inward investment marketing campaign.

An intervention to address the issues along the A48 corridor would directly support achieving these key aims. Economic growth will be stimulated and economic sectors may be attracted to invest within the study area if improved access is provided.

Furthermore, addressing the issues of congestion along with A48 corridor, will allow the maximum opportunity to be gained from the removal of the Severn Bridge toll in terms of attracting inward investment.

### ***New Technology***

In taking forward options for intervention developments in new technologies should be noted. Although it is not possible to predict what technologies may be widely adopted in the medium to long term, trends in new technologies can be identified. For example, technology is being developed to allow automotous vehicles, technology development in communication is affecting the need for travel, new technology exists to assist in network management helping to improve traffic flow and there is a growth in electric vehicles and bikes. All of these future technological developments could impact on any intervention taken forward within the A48 corridor.

### ***Consequences of a Do Minimum Approach***

Continuation with a Do Minimum approach could result in a number of negative impacts within Chepstow and the wider area.

Specifically, within Chepstow, continued use at the current levels along the A48 will lead to a further decline in the air quality along the A48 corridor within the Air Quality Management Area which will impact residents and visitors to the area. Journey times along the A48 are likely to continue to increase, particularly due to the projected rise in housing demand in the Chepstow and surrounding areas which is possible once the Severn Bridge Tolls are removed.

Wider consequences would include a lack of transport support for new developments in the Southwest Gloucestershire, Chepstow and south east Monmouthshire areas resulting in a decline in economic growth. This will not support the strategic aims of either the Cardiff Capital Region or the Forest Economic Partnership. Development constraint could also lead to failure to meet the current and future proposed local development plan housing allocations.

### ***Benefits of an Improvement to the A48***

An improvement in provision and a reduction in congestion along this stretch of the A48 will improve strategic and local access for the communities in Chepstow (including Sedbury and Tutshill) and the surrounding wider areas. It could result in a reduction in journey times for routes along the A48, benefiting local business, residents and commuters. An improvement in traffic along this section will also address the Air Quality Management Area issues and improve the environment.

If the A48 is no longer a constraint, then this will unlock development opportunities for the area and allow greater access to employment opportunities in Bristol for communities in the Forest of Dean and Southwest Gloucestershire. A transport intervention would also permit further economic development of both the Southwest Gloucestershire and south east Monmouthshire areas.

## 2.2 Option Development

A Stage 1 WeITAG (Strategic Outline Case) workshop was held with stakeholders on 24<sup>th</sup> April 2018 where the problems within the study area were defined and a long list of options to address these problems was developed (a full workshop report can be found in Appendix B in the Impacts Assessment Report).

Further options included on the long list were developed through analysis of previous studies and reports that related to the study area. A total of 20 options were developed which were then grouped together into appropriate themes to provide a final long list of options for assessment during the WeITAG Stage 1 (Strategic Outline Case) process.

The themes are as follows:

- Highway improvements (new highways);
- Public Transport;
- Park and Ride;
- Active Travel;

- Reducing the need to travel;
- Legislative;
- Maintenance.

The long list of options is detailed in Table 2.5 and included in the Impacts Assessment Report in Worksheet 4 of Appendix C.

The long list options are also shown on drawing CTS-CAP-00-XX-DR-C-0001 (PO4) in Appendix I of the Impacts Assessment Report. All of the options listed are at a conceptual stage only and no detailed drawings or route details have yet been produced.

All options that are highway focused (bypass options, new motorway junction, upgrades or improvements) although not stated specifically in the option description, would contain Active Travel provision in line with Active Travel (Wales) Act 2013 design guidance.

**Table 2.5 Long List of Options**

Ref	Option Title	Description	Source	Theme
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	<p>A bypass to the north of Chepstow will commence on the A466 at the Crossway Green Roundabout and will be approximately 2.9 kilometres in length. This roundabout already has five arms and an additional arm will require its enlargement. The bypass alignment will then pass to the north of Tutshill in Gloucestershire. The flood plain on the Gloucestershire side of the river is a Flood Zone 3 (high risk of flooding) and is approximately 30 metres below the higher wooded Monmouthshire side. A bridge and extended structure will cross the river and flood plain to minimise the impact on the flood plain. The bypass alignment will then pass around the northern edge of Tutshill, crossing the B4228 at some point and pass through agricultural land before linking to the A48 to the east. A suggested location is at the B4228 junction although if the bypass is to have priority, it will have to link to the A48 further east. At this stage, it is not known what local roads will have connections with the bypass.</p> <p>In addition to a bypass to the north of Tutshill, the A466 between Crossway Green Roundabout and Newhouse Roundabout will be upgraded to dual carriageway standard. Although the A466 corridor to the south of High Beech Roundabout may be able to accommodate such a standard, it will be extremely difficult to do this between High Beech Roundabout and Crossway Green Roundabout due to existing development adjacent to the eastern and western sides of the Wye Valley Link Road.</p>	Workshop 24/4/2018	Highway Improvements (New highways)
2	Chepstow Bypass – Beachley and Sedbury	<p>A Chepstow Outer Bypass similar to the current proposal was included in the Gwent Structure Plan (1991-2006). This proposal was considered in the late 1980s/early 1990s and would have commenced at Newhouse Roundabout, passing through the Thornwell residential estate before crossing the River Wye and connecting with the A48 in the Sedbury area of Gloucestershire</p> <p>The current option will take a similar route and although a termination point on the A48 has been assumed, there are a number of alternative locations for this. The option as described is approximately 3.75 kilometres in length. The alignment through the Thornwell area of Chepstow was determined prior to the residential and business areas being constructed in the 1980s. As a result, some of the necessary infrastructure is already in place. Although part of the alignment benefits from a wide corridor that will accommodate a higher standard road than currently exists, this is not continuous all the way from Newhouse Roundabout, possibly due to the rock in the area. This may limit the standard that can be provided. The existing roundabouts within the Thornwell area will have to be enlarged or different forms of junctions provided.</p> <p>The eastern edge of the residential development is within approximately 220 metres of the River Wye. Beyond the residential area there is dense woodland and a 30 metre (approximate height) cliff separates this from the river below. The Newport to Gloucester railway line is located just above the river on the Monmouthshire side. The river is approximately 140 metres wide at this point and the flood plain within Gloucester, which extends north east to Sedbury is a Flood Zone 3 (high risk of flooding). A bypass will have to cross the River Wye on a bridge and descend towards existing ground level over this flood risk area on an extended structure to minimise the impact of the road.</p>	Workshop 24/4/2018	Highway Improvements (New highways)

Ref	Option Title	Description	Source	Theme
		From the flood plain, the bypass will have to cross Offa's Dyke before passing to the east of Sedbury. Depending on where it is located in relation to Sedbury, it may have to cross Sedbury Lane and other minor roads, pass through agricultural land, and over the Newport to Gloucester railway line before meeting the A48 at its junction with Gloucester Road (the B4228). If the bypass was to have priority, the connection would have to be further east. At this stage, it is not known what local roads will have connections with the bypass.		
3	Chepstow Bypass – following railway alignment	Such an option was considered at the same time as a Chepstow Bypass (late 1980s/early 1990s). This will utilise the same alignment through the Thornwell area of Chepstow as Option 2 and overall, will be approximately 2.6 kilometres in length. From the eastern Thornwell roundabout, the alignment will pass through the wooded area and drop down steeply to the alignment of the Newport to Gloucester railway line. The road will be located above the railway on a structure as the existing corridor is not wide enough to provide a road adjacent to it. The structure will commence to the east of Bluebell Drive. It will continue northwards on this alignment passing over Chepstow Railway Station to a point adjacent to the Chepstow Tesco store from where it will leave the railway alignment, cross the car park and meet the A48 at a junction. The form of junction has yet to be determined although an arrangement could be provided that gave priority to the new road with access to Chepstow town centre from it. At this stage, it is not known what local roads will have connections with the bypass.	Historic Studies	Highway Improvements
4	Chepstow Bypass – Beachley and Sedbury from M48.	This option will provide a bypass to Chepstow that will be constructed fully within Gloucestershire. It will involve the reclassification of the M48 to a non-motorway Trunk Road and the provision of a grade separated junction between the bridge over the River Wye and the Severn Bridge. This will require east and west facing slip roads leading to a roundabout in Beachley. Due to the level difference between the M48 and Beachley, an elevated roundabout will be beneficial as this will reduce the slip road gradients. It will at some point merge with Beachley Road, which will be upgraded. It will then follow a similar alignment to Option 2 and will pass through agricultural land, cross Sedbury Lane and the Newport to Gloucester railway line before meeting the A48 at its junction with Gloucester Road (the B4228). If the bypass was to have priority, the connection would have to be further east. At this stage, it is not known what local roads will have connections with the bypass.	Workshop 24/4/2018	Highway Improvements
5	New M48 Junction (Possible location Hayes Gate/St. Pierre Golf Course)	This will be a new junction on the M48 with the possible suggested location being St. Pierre Golf Course. The A48 crosses the motorway at this point and the provision of east facing slip roads will enable traffic between Caldicot and surrounding areas, and the Severn Bridge (and vice versa), to avoid using the A466 and High Beech Roundabout, thus giving relief to this junction. However, it may not provide very much relief to the A48 through Chepstow itself. Other possible locations for the junction along the M48 exists, with a position further west possibly more appropriate to providing access to a range of trip generators including Severn Tunnel Junction Station and any future large scale development within this area.	Workshop 24/4/2018	Highway Improvements (New highways)

Ref	Option Title	Description	Source	Theme
6	Severn Crossing between Lydney and A38/M5	Provision of a third crossing of the River Severn at Lydney will provide direct access between the A48 and the A38/M5. Lydney is the closest main town to the River Severn and a direct link would pass to the north of Berkeley. It could either meet the A38 or continue east to the M5 where a new junction will be located between Junctions 13 and 14. The full link will be approximately 8.9 kilometres long including a 1.5 kilometre long bridge. Such a link will negate the need to travel along the A48 through Chepstow to access the M5/Gloucester via the Forest of Dean.	Workshop 24/4/2018	Highway Improvements (New highways)
7	A48 and A466 Upgrades	This option includes all the proposals that were originally considered in the 1980s. These consisted of proposals to widen the existing A48 between High Beech Roundabout and the general vicinity of the B4293 junction that provides access to Chepstow Town Centre. Minimal improvements to the roundabout were proposed as well as improvements to the Bulwark Road junction. Although not considered at the time, this option includes the upgrading of the A466. A number of options were considered for widening Newport Road, Hardwick Hill, and Mount Pleasant as well as a proposal for a new section of carriageway directly connecting Newport Road and the A48 in the vicinity of the B4293 junction. This included options for separate junctions at each end of the new road for local access as well as the extension of Bulwark Road to a new single access replacing Hardwick Hill Lane. A Public Consultation Exercise was held of the above options in 1988. The scheme was included in the Gwent Structure Plan (1991-2006) but no improvement was ever provided and the idea was abandoned by the Secretary of State in 1993/94. The A466 is currently a three lane road with two lanes on the northbound approach to High Beech Roundabout and two lanes on the southbound approach to Newhouse Roundabout. Upgrading will bring the A466 up to dual carriageway standard.	Workshop 24/4/2018	Highway Improvements
8	New Railway Stations	New railway stations provided at Tutshill and Newhouse. Provision of park and ride facilities required at each station to intercept strategic east-west traffic movements from the A48 through Chepstow.	Workshop 24/4/2018	Public Transport
9	Public Transport Integration	Implementation of fully Integrated public transport including integrated ticketing between modes.	Workshop 24/4/2018	Public Transport
10	Public Transport Upgrades (Regional)	Improved public transport network in terms of destinations served and frequency of service to more regional destinations such as a direct bus service to Bristol and Gloucester from Lydney and a Metro service to Cardiff.	Workshop 24/4/2018	Public Transport
11	Public Transport Upgrades (Local)	Improvements to local bus services to provide better Rail /Bus interchange (Chepstow) and better local bus services to reduce local trips on A48 including Wye Valley bus upgrades.	Workshop 24/4/2018	Public Transport
12	Improved Rail Services to Bristol	New rail link to Bristol direct from Chepstow / Lydney via Severn Tunnel Junction. Likely to require a turn back of the train at Severn Tunnel Junction or investment in increased frequency of services calling at Chepstow & Lydney to enable interchange at Severn Tunnel Junction with services to Bristol.	Workshop 24/4/2018	Public Transport

Ref	Option Title	Description	Source	Theme
13	Park & Ride (Bus)/ Park & Share	Park & rides / Park and Share provided at Tutshill and Chepstow Race Course. Park and Share site at Tutshill could provide ability to offer car sharing option along with Park and Ride services for commuters accessing Bristol and Cardiff.	Workshop 24/4/2018	Park and Ride
14	Park and Ride Rail	Improvement to rail based park and ride at Chepstow and Lydney railway stations, including expansion of park and ride car parking facilities and improvements to station facilities.	Workshop 24/4/2019	Park and Ride
15	Active Travel Upgrades	Active Travel upgrades to include cycle route provision to bus and rail facilities to improve interchange and improved pedestrian routes (including potential links to Severn Tunnel Junction, Chepstow Railway Station and Cadlicot Railway Station). New Active Travel bridge affixed to side of existing A48 and dedicated for pedestrians and cyclists.	Workshop 24/4/2018 / Sustrans meeting 8/5/2018	Active Travel
16	Active Travel Additions	If by pass of existing A48 corridor implemented, existing A48 road bridge section converted to narrow highway lanes, to include dedicated wider walking and cycling facilities.	Sustrans meeting 8/5/2018	Active Travel
17	Reducing the need to travel	Planning controls to link housing to employment and flexible working practices / working from home etc. to reduce the need to travel. School travel plans to be updated for all schools in Chepstow /bus/catchments enforced. Adoption of future technologies which may reduce the need to travel or better manage the network.	Workshop 24/4/2018	Reducing Need to Travel
18	Containment of Settlements	Encouraging Tutshill / Sedbury to be new centres / self-contained settlements to reduce need for local trips along A48 to access services of Chepstow town centre.	Workshop 24/4/2018	Reducing Need to Travel
19	Congestion Charge	Congestion charge implemented for users of A48	Workshop 24/4/2018	Legislative
20	Do Minimum	Undertaking no dedicated further improvements along the A48 corridor except from routine maintenance as and when required to keep route operational.	Workshop 24/4/2018	Maintenance



## 2.3 Strategic Fit

The options in the long list have been appraised against the relevant National, Regional and Local policy documents, as well as against a comprehensive list of scheme specific objectives.

### 2.3.1 National Policy

#### ***Prosperity for All: The National Strategy, 2017***

Prosperity for All – The National Strategy sets out four key themes (Table 2.6)

**Table 2.6** Key Themes

Key Themes	Objectives
Prosperous and Secure	<ul style="list-style-type: none"> <li>• Support people and businesses to drive prosperity;</li> <li>• Tackle regional inequality and promote fair work; and</li> <li>• Drive sustainable growth and combat climate change.</li> </ul>
Healthy and Active	<ul style="list-style-type: none"> <li>• Deliver quality health and care services fit for the future;</li> <li>• Promote good health and well-being for everyone; and</li> <li>• Build healthier communities and better environments.</li> </ul>
Ambitious and Learning	<ul style="list-style-type: none"> <li>• Support young people to make the most of their potential;</li> <li>• Build ambition and encourage learning for life; and</li> <li>• Equip everyone with the right skills for a changing world.</li> </ul>
United and Connected	<ul style="list-style-type: none"> <li>• Build resilient communities, culture, and language;</li> <li>• Deliver modern and connected infrastructure; and</li> <li>• Promote and protect Wales' place in the world</li> </ul>

Improvements to the A48 corridor would enable modern and connected infrastructure to be implemented (objective with the theme of 'United and Connected'). Through improving the A48 corridor, this will enhance access to Monmouthshire, surrounding authorities and the Gloucestershire / south-west England regions.

The delivery of improvements to the A48 corridor would also have benefits that will support and deliver two of the three objectives within the Prosperous and Secure key theme (support people and businesses to drive prosperity and drive sustainable growth and combat climate change). The National Strategy is underpinned by an Economic Action Plan (2017).

#### ***Prosperity for All: Economic Action Plan: 2017***

This document produced by the Welsh Government seeks to grow economy inclusively, spread opportunity and promote well-being within Wales. It contains actions that will work to grow the economy and reduce inequality. The vision of the plan is 'inclusive growth, built on strong foundations, supercharged industries of the future and productive regions'.

The plan is focused around the following areas:

- Support people and businesses to drive prosperity;
- Tackle regional inequality and promote fair work;
- Drive sustainable growth and combat climate change;
- Build ambition and encourage learning for life;

- Equip everyone with the right skills for a changing world;
- Deliver modern and connected infrastructure;
- Promote and protect Wales' place in the world.

Any intervention implemented within Chepstow would be supportive of the Economic Action Plan, through providing better access to existing developments and potential new development opportunities (both within south east Wales and Southwest Gloucestershire). It would provide improved access (including to new employment opportunities) for the communities of south east Monmouthshire and Southwest Gloucestershire, which will assist in tackling regional inequality. An intervention at Chepstow would also assist in delivering modern and connected infrastructure.

### ***Emerging Wales Transport Strategy***

A two-tier approach to the replacement of the existing 2008 Wales Transport Strategy is proposed, comprising an overarching policy statement supported by a number of thematic policy statements.

The overarching policy statement will set out how transport will work to deliver the four key themes in Taking Wales Forward and deliver against the Priority areas set out in Prosperity for All.

The overarching policy statement is underpinned by a suite of thematic policy statements which together form a new Wales Transport Strategy. This would in turn, would sit under the Economic Action Plan and the National Strategy.

This WelTAG study for the A48 Corridor considers the existing Wales Transport Strategy (see below). However, the study acknowledges that there is an emerging Wales Transport Strategy being developed and will likely be of consideration for WelTAG Stage 2.

### ***One Wales: Connecting the Nation (Wales, Transport Strategy, 2006)***

The goal of One Wales: Connecting the Nation is, 'to promote sustainable transport networks that safeguard the environment while strengthening the country's economic and social life'.

The Wales Transport Strategy (WTS) identifies a series of high-level outcomes which will need to be achieved in order to help deliver 'Connecting the Nation'.

Table 2.7 shows the impact of the options in the long list against the outcomes of the Wales Transport Strategy. This is taken from Worksheet 5 in Appendix J of the Impacts Assessment Report.

The options have been scored using the seven point Likert scale, using a qualitative assessment approach using existing known data.

All options generally perform well against the criteria, with the exception of the Do Minimum approach. However, the best performing options in line with the Wales Transport Strategy are the public transport and active travel options.

Table 2.7 Long List of Options Impact on WTS Outcomes

Option No.	Option	Wales Transport Strategy Outcomes																
		Social					Economy						Environment					
		Improve access to healthcare	Improve access to education, training and lifelong learning	Improve access to shopping and leisure facilities	Encourage healthy lifestyles	Improve the actual and perceived safety of travel	Improve access to employment opportunities	Improve connectivity within Wales and internationally	Improve the efficient, reliable and sustainable movement of people	Improve the efficient, reliable and sustainable movement of freight	Improve access to visitor attractions	Increase the use of more sustainable materials	Reduce the contribution of transport to greenhouse gas emissions	Adapt to the impacts of climate change	Reduce the contribution of transport to air pollution and other harmful emissions	Improve the impact of transport on the local Environment	Improve the impact of transport on our heritage	Improve the impact of transport on biodiversity
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	+	+	+	-	+	+	+	+	+	+	+	0	0	0	-	-	-
2	Chepstow Bypass – Beachley and Sedbury	+	+	+	-	+	+	+	+	+	+	+	0	0	+	-	-	-
3	Chepstow Bypass - following the alignment of the railway	+	+	+	-	+	+	0	0	+	+	+	0	0	+	-	0	-
4	Chepstow Bypass - Beachley and Sedbury direct from M48 #	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	New M48 Junction (Possible Location Hayes Gate/St. Pierre Golf Course)	+	+	+	-	+	+	+	+	+	+	+	0	0	0	0	0	0
6	Severn Crossing between Lydney and A38/M5 #	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	A48 and A466 Upgrades	+	+	+	0	+	+	+	+	+	+	+	-	-	-	-	-	0
8	New Railway Stations	+	+	+	+	+	+	+	++	+	0	+	+	+	+	+	0	-
9	Public Transport Integration	+	+	+	+	+	+	+	++	+	0	0	+	+	+	+	0	0
10	Public Transport Upgrades (Regional)	+	+	+	+	+	+	+	++	+	0	0	+	+	+	+	0	0
11	Public Transport Upgrades (Local)	+	+	+	+	+	+	+	++	+	0	0	+	+	+	+	0	0
12	Improved Rail Services to Bristol	+	+	+	+	+	+	+	++	+	0	+	+	+	+	+	0	-
13	Park & Ride (Bus) / Park and Share	0	0	0	+	+	+	+	++	+	0	0	+	+	+	+	0	-
14	Park & Ride (Rail)	+	+	+	+	+	+	+	++	0	0	0	+	+	+	+	0	-
15	Active Travel Upgrades	+	+	+	++	+	+	+	++	0	0	+	+	+	+	+	0	+
16	Active Travel Additions	+	+	+	++	+	+	+	++	0	0	+	+	+	+	+	0	+
17	Reducing the need to travel	0	0	0	+	+	0	0	0	0	0	0	+	+	+	+	0	+
18	Containment of Settlements	+	0	+	+	0	0	0	0	0	0	0	+	+	+	+	0	-
19	Congestion Charge on A48	-	-	-	+	0	-	0	-	-	-	0	+	+	+	+	0	+
20	Do Minimum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Key

Large positive (+++)
Moderate positive (++)
Slight positive (+)
Neutral (0)

Slight negative (-)
Moderate negative (- -)
Large negative (- - -)

# As the outcomes of the Wales Transport Strategy only apply to projects in Wales, Options 4 and 6 do not apply as they are contained wholly in England.

**National Development Framework (Anticipated Publication – 2020)**

The Planning Directorate is working on the production of a National Development Framework which will set out a 20-year land use framework for Wales and will replace the current Wales Spatial Plan.

The National Development Framework will:

- Set out where nationally important growth and infrastructure is needed and how the planning system - nationally, regionally and locally - can deliver it;
- Provide direction for Strategic and Local Development Plans and support the determination of Developments of National Significance;
- Sit alongside Planning Policy Wales, which sets out the Welsh Government’s planning policies and will continue to provide the context for land use planning; and
- Support national economic, transport, environmental, housing, energy and cultural strategies and ensure they can be delivered through the planning system.

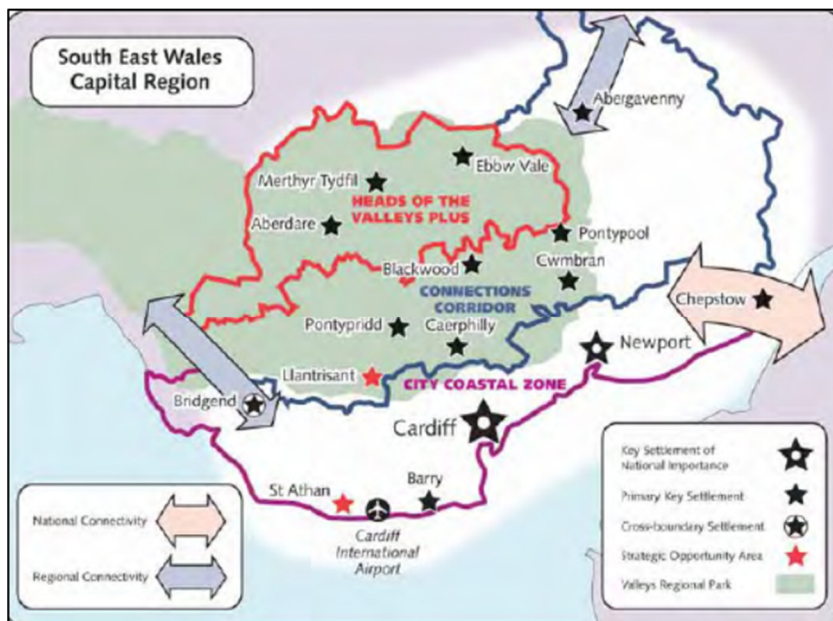
While at the draft stage, the emerging document is likely to support the implementation of an intervention along the A48 corridor that would help to improve access and address issues of congestion, which may hamper future economic development.

**Wales Spatial Plan, 2008**

The 2008 version of the Wales Spatial Plan provides an update to the document originally adopted in 2004, to bring the documents in line with the Wales Transport Strategy (2008).

The Wales Spatial Plan is the overarching framework for Wales and provides an important context for a range of matters.

**Figure 2.1 - The South East Wales Region**



Chepstow falls into South East Wales (Capital Network), which has the following set vision:

‘An innovative skilled area offering a high quality of life – international yet distinctly Welsh. It will compete internationally by increasing its global visibility through stronger links between the Valleys and the Coast and with the UK and the rest of Europe, helping to spread prosperity within the area and benefiting other parts of Wales.’

There are three priorities for the Capital Network:

- The area will function as a networked city region, on a scale to realise its international potential, its national role and to reduce inequalities;
- A fully integrated high quality transport system is necessary for this to happen. Over the 20 year horizon of the Wales Spatial Plan, all the Area’s key settlements should be linked to Cardiff or Newport by suitable high capacity public transport;
- The success of the area relies on Cardiff developing its Capital functions, together with strong and distinctive roles of other towns and cities.

An improvement to the A48 corridor in Chepstow would help to achieve these priorities through reducing inequalities by improving links between Sedbury, Tutshill and Chepstow and wider to Bristol, Southwest Gloucestershire and south Wales. The improvements will also improve the role of Chepstow and contribute towards making a more networked city region.

### ***National Transport Finance Plan, Updated 2017***

The Plan sets out the investment for transport infrastructure and services for 2015 to 2020 and beyond. It recognises that Transport has a critical role to play in improving Wales’ economic competitiveness and access to jobs and services. However, it does state that it is not a policy document, nor does it seek to prioritise schemes to be taken forward.

The Plan acknowledges that the maximum benefits from transport will be experienced if excellent national/international connections exist, enabling access to markets, employment, education and services.

The National Transport Finance Plan (2017) does not reference the A48 Chepstow corridor.

### ***Planning Policy Wales (Edition 10, Dec 2018)***

Planning Policy Wales Edition 10 (2018) has been developed to consider the Well-being of Future Generations (Wales) Act 2015. The objectives of which are the central thread running through the document.

To support the delivery of the Well-being of Future Generation (Wales) Act 2015 goals, Planning Policy Wales Edition 10 focuses on the new, multi-faceted concept of Placemaking. The four key themes that contribute to Placemaking are available in Table 2.8.

**Table 2.8** Four Key Themes and Deliverables

Key Theme	Deliverables
Strategic & Spatial Choices	<ul style="list-style-type: none"> <li>• Good Design</li> <li>• Promoting Healthier Places</li> <li>• The Welsh Language</li> <li>• Sustainable Management of Natural Resources</li> <li>• Strategic Planning</li> <li>• Placemaking in Rural Areas</li> <li>• Managing Settlement Form</li> </ul>
Active & Social Places	<ul style="list-style-type: none"> <li>• Transport</li> <li>• Housing</li> <li>• Retail &amp; Commercial Centres</li> <li>• Community Facilities</li> <li>• Recreational Spaces</li> </ul>
Productive & Enterprising Places	<ul style="list-style-type: none"> <li>• Economic Development</li> <li>• Tourism</li> <li>• The Rural Economy</li> <li>• Transport Infrastructure</li> <li>• Telecommunications</li> <li>• Energy</li> <li>• Minerals</li> <li>• Waste</li> </ul>
Distinctive & Natural Places	<ul style="list-style-type: none"> <li>• Landscape</li> <li>• Coastal Areas</li> <li>• Historic Environment</li> <li>• Green Infrastructure</li> <li>• Biodiversity</li> <li>• Water, Air, Soundscape and Light</li> <li>• Flooding</li> <li>• De-risking</li> </ul>

The following four outcomes provide a framework which should be the optimal for any proposal:

- Creating and Sustaining Communities;
- Growing Our Economy in a Sustainable Manner;
- Making Best Use of Resources;
- Maximising Environmental Protection and Limiting Environmental Impact; and
- Facilitating Accessible and Healthy Environments.

These outcomes, whilst highlighting the sustainable features should be the starting point for plan makers and decision takers and be considered at the earliest possible opportunity. In accordance with Planning Policy Wales Edition 10, this WelTAG Study considers the transport hierarchy and appraises several options. Options taken forward for the A48 corridor will be reflective of future wellbeing, and therefore help to achieve the key themes and objectives of Planning Policy Wales Edition 10. In particular, an intervention undertaken to address existing congestion could assist in growing the economy in a sustainable manner.

### ***Active Travel (Wales) Act (2013)***

The Active Travel (Wales) Act was passed by the National Assembly of Wales and seeks to secure new and enhanced active travel routes and facilities, improving provision for walkers and cyclists across Wales. The Act requires Local Authorities to map existing active travel routes and regularly monitor active travel facilities / routes to review where improvements and/or new routes are required. Part of this process requires Local Authorities to record annual reports regarding how much routes are used.

The Council's integrated network map and existing route map are approved by Welsh Government. Investment in delivering developments to the A48 would enable scope for improvements to the Active Travel network.

### ***Well-being of Future Generations (Wales) Act 2015***

The Well-being of Future Generations (Wales) Act is about improving the social, economic, environmental and cultural well-being of Wales. The Act puts in place seven well-being goals:

- (1) A globally responsible Wales;
- (2) A Wales of vibrant culture and thriving Welsh Language;
- (3) A Wales of cohesive Communities;
- (4) A more equal Wales;
- (5) A healthier Wales;
- (6) A resilient Wales;
- (7) A prosperous Wales.

Table 2.9 shows the impact of the long list of options against the goals of the Well-Being of Future Generations (Wales) Act 2015. This is taken from Worksheet 6 in Appendix J of the Impacts Assessment Report.

The highway options within the long list appraised in Table 2.9 against the WBoFGA goals are mostly neutral, however, the public transport and active travel options positively address the WBoFGA goals.

The Well-being of Future Generations (Wales) Act also details five ways of working to enable the act. These have been considered in appraising options. These are:

- Long Term – any intervention chosen as a preferred option within Chepstow would address long term aims through appraisal of options against future trends and wider issues. For example the impact of the future removal of the Severn Bridge toll and the new Local Development Plans for the study area have been considered as have future technologies that may be widely adopted;
- Prevention – any intervention chosen would aim to address any problems getting worse or occurring. Problems for the study area have been defined and the objectives and interventions formed are specifically related to addressing these problems. Each intervention has been assessed in terms of its ability to address the problems highlighted.

- Integration – At this stage, the wider issues have been considered and how interventions may impact upon this, including consideration of Monmouthshire County Council Wellbeing Objectives. At a Stage 2 WelTAG (Outline Business Case) other organisations’ wellbeing objectives and the impacts upon these would be considered.
- Collaboration – Stakeholders from a range of different bodies have been engaged as part of this Stage 1 WelTAG (Strategic Outline Case) process to ensure that collaboration on addressing the identified problems is achieved and any intervention addresses a range of stakeholders needs.
- Involvement – Stakeholders have been engaged at an early stage both in identify problems within the study area and identifying potential solutions. Stakeholders and the public will be engaged at future WelTAG stages to provide feedback on short listed options.

**Table 2.9 Long List Options Impact on Well-Being of Future Generation (Wales) Act 2015 Goals**

Option No.	Option	A globally responsible Wales	A Wales of vibrant culture and thriving Welsh language	A Wales of cohesive communities	A more equal Wales	A healthier Wales	A resilient Wales	A prosperous Wales
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	0	0	0	0	0	+	+
2	Chepstow Bypass – Beachley and Sedbury	0	0	0	0	0	+	+
3	Chepstow Bypass - following the alignment of the railway	0	0	0	0	0	0	+
4	Chepstow Bypass - Beachley and Sedbury direct from M48 #	0	0	0	0	0	0	0
5	New M48 Junction (Possible Location Hayes Gate/St. Pierre Golf Course)	0	0	0	0	0	0	+
6	Severn Crossing between Lydney and A38/M5 #	0	0	0	0	0	0	0
7	A48 and A466 Upgrades	0	0	0	0	0	0	+
8	New Railway Stations	+	0	+	+	+	+	+
9	Public Transport Integration	+	0	+	+	+	+	+
10	Public Transport Upgrades (Regional)	+	0	+	+	+	+	+
11	Public Transport Upgrades (Local)	+	0	+	+	+	+	0
12	Improved Rail Services to Bristol	+	0	+	+	+	+	+
13	Park & Ride (Bus) / Park and Share	+	0	0	+	+	+	0
14	Park & Ride (Rail)	+	0	+	+	+	+	0
15	Active Travel Upgrades	+	0	+	+	+	0	0



Option No.	Option	A globally responsible Wales	A Wales of vibrant culture and thriving Welsh language	A Wales of cohesive communities	A more equal Wales	A healthier Wales	A resilient Wales	A prosperous Wales
16	Active Travel Additions	+	0	+	+	+	0	0
17	Reducing the need to travel	+	0	+	+	+	0	0
18	Containment of Settlements	+	0	+	+	+	0	0
19	Congestion Charge on A48	+	0	0	0	+	0	0
20	Do Minimum	0	0	0	0	0	0	0

Notes: # As the goals of the Well-being of Future Generations (Wales) Act only apply to projects in Wales, Options 4 and 6 do not apply as they are contained wholly in England.

2.3.2 Regional Policy

Table 2.10 includes an assessment of the options against relevant regional objectives from the Monmouthshire Local Transport Plan (LTP), the Gloucestershire LTP and the Cardiff Capital Region Regeneration Plan (this is also included in Worksheet 7 in Appendix J of the Impacts Assessment Report).

The Monmouthshire LTP covers the period from 2015 until 2020, and the objectives contained within the plan are those adopted from the Regional Transport Plan (RTP).

Similarly, the Gloucestershire LTP covers the period from 2015 until 2031. The LTP is based around four objectives which are included in Table 2.6.

Only those highways-based options that straddle Monmouthshire and Gloucestershire have been appraised against the objectives of the two LTPs and the Cardiff Capital Region. Options wholly contained within Monmouthshire (marked # in the table) have only been appraised against the objectives of the Monmouthshire LTP and the Cardiff City Region. Options contained wholly within Gloucestershire (marked ## in the table) have only been appraised against the objectives of the Gloucestershire LTP. All the non-highways based options have been assumed as being related to the two LTPs and the Cardiff Capital Region Strategic Objectives in some way.

The highway options from the long list, such as the alignments for a new bypass, or creating a new crossing across the River Severn are mostly neutral when assessed against the Monmouthshire LTP objectives with the exception of having a small to large positive impact on ‘improve the quality, efficiency and reliability of the transport system’ and ‘To reduce traffic growth, traffic congestion and to make better use of the existing road system’.

The public transport and active travel options are more positive, particularly Option 8: New Railway Stations, Option 9: Public Transport Integration, and Option 12: Improved Rail

Services to Bristol when assessed against both the Monmouthshire and Gloucestershire LTPs.

Most of the long list of options will have a neutral impact against the Cardiff Capital Region Strategic Objectives as some objectives are not related to transport developments. Those objectives that most interventions within Chepstow are likely to positively impact include:

- Providing the right infrastructure including connectivity by means of good transport links and high speed broadband;
- Access to employment and economic opportunities;
- Participation in the labour market for all members of society;
- Access to education and training to develop skills;
- Access to social and recreational opportunities.

Active travel options and Public transport options are also likely to have a positive impact on:

- Respect, protect and support our rural and natural environment and use it to promote economic and social outcomes;
- Develop and promote our world-class cultural and recreational opportunities utilising the regions natural beauty and historic areas; and
- Demonstrate our commitment to a sustainable future and acknowledge our global responsibility.

Table 2.10 Long List Options Impact on Regional Policy Objectives

Option Ref.	Option	Local Transport Plan Objectives												Cardiff Capital Region Strategic Objectives																						
		Monmouthshire LTP *						Gloucestershire LTP						Prosperity & Opportunity							Inclusion & Equality				Culture, Community & Sustainability											
		To improve interchange within and between modes of transport	To improve the quality, efficiency and reliability of the transport system	To improve awareness of public transport and active travel opportunities	To reduce traffic growth, traffic congestion and to make better use of the existing road system.	To achieve a modal shift towards more sustainable forms of transport for moving both people and freight.	To promote sustainable integrated travel and to make the public more aware of the consequences of their travel choices on climate, the environment and health	To ensure developments in South East Wales are accessible by sustainable transport	To make sustainable transport and travel planning an integral component of regeneration schemes.	Support sustainable economic growth	Enable community connectivity	Conserve the environment	Improve community health and wellbeing	Building the capacity of individuals, households, public sector & businesses to meet the challenges & grasp opportunity creating a more productive economy	Providing the right infrastructure including connectivity by means of good transport links and highspeed broadband	Encouraging a culture of innovation and entrepreneurship by providing the right skills, opportunities and support to engender a confidence to be creative	Ensuring that the city-regions labour market is equipped with the skills that businesses need	Improving public sector efficiency and effectiveness	Supporting all businesses to become more productive, from small retail to large advanced manufacturers	Enhancing the business climate for emerging sectors, enterprises and innovation	Encourage and promote research and development and entrepreneurial enterprise	A vibrant and sustainable economy which contributes to the well-being and quality of life of people and communities now and in the future	Access to employment and economic opportunities	Participation in the labour market for all members of society	Access to a range of housing, including affordable	Access to education and training to develop skills	Access to social and recreational opportunities	Forging a clear identity and strong reputation as a City-Region for trade, innovation, and quality of life	Ensure our urban centres are vibrant and vital with unique identities which all of the regions residents can use and be proud of	Respect, protect and support our rural and natural environment and use it to promote economic and social outcomes	Develop and promote our world-class cultural and recreational opportunities utilising the regions natural beauty and historic areas	Provide a quality environment across the whole region including existing and new development that attracts businesses and talented people	Demonstrate our commitment to a sustainable future and acknowledge our global responsibility	Work with political and commercial partners, at a national, regional and local level to coordinate the promotion of the region		
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	0	++	0	++	0	0	0	0	++	0	--	0	0	+	0	0	0	0	0	0	0	+	+	0	+	+	0	0	0	--	0	+	0	0	
2	Chepstow Bypass - Beachley and Sedbury	0	+++	0	+++	0	0	0	0	+++	0	--	0	0	+	0	0	0	0	0	0	0	+	+	0	+	+	0	0	0	-	0	+	0	0	
3	Chepstow Bypass - following the alignment of the railway #	0	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	0	+	+	0	0	0	-	0	+	0	0	
4	Chepstow Bypass - Beachley and Sedbury direct from M48 ##	0	0	0	0	0	0	0	0	++	0	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	New M48 Junction (Possible Location Hayes Gate/St. Pierre Golf Course) #	0	+	0	+	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	+	0	0	+	+	0	0	0	0	0	0	0	0	
6	Severn Crossing between Lydney and A38/M5 ##	0	0	0	0	0	0	0	0	+	0	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	A48 and A466 Upgrades #	0	+	0	+	0	0	0	0	0	-	-	-	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8	New Railway Stations	++	+	+	+	++	++	+	0	+	+	+	+	0	++	0	0	0	0	0	0	0	+	+	0	+	+	0	0	0	+	+	0	+	0	
9	Public Transport Integration	++	+	+	0	++	++	0	0	+	+	+	+	0	+	0	0	0	0	0	0	0	+	+	0	+	+	0	0	0	0	0	0	+	0	
10	Public Transport Upgrades (Regional)	+	+	+	+	+	+	+	0	+	+	+	+	0	+	0	0	0	0	0	0	0	+	+	0	+	+	0	0	0	0	0	0	+	0	
11	Public Transport Upgrades (Local)	+	+	+	+	+	+	+	0	+	+	+	+	0	+	0	0	0	0	0	0	0	+	+	0	+	+	0	0	0	0	0	0	+	0	
12	Improved Rail Services to Bristol	++	++	+	+	++	++	+	0	++	+	+	+	0	++	0	0	0	0	0	0	0	+	+	0	+	+	0	0	0	0	0	+	0	0	
13	Park & Ride/Share	++	+	+	+	+	+	+	0	+	+	+	0	0	+	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	+	0	0	
14	Park & Ride (Rail)	++	+	+	+	+	+	+	0	+	+	+	+	0	++	0	0	0	0	0	0	0	+	+	0	+	+	0	0	0	0	0	+	0	0	
15	Active Travel Upgrades	+	+	++	+	+	+	+	0	+	+	++	0	+	0	0	0	0	0	0	0	0	+	+	0	+	0	0	0	0	0	0	+	0	0	
16	Active Travel Additions	+	+	++	+	+	+	+	0	+	+	++	0	+	0	0	0	0	0	0	0	0	+	+	0	+	0	0	0	0	0	0	+	0	0	
17	Reducing the need to travel	0	0	++	+	0	++	+	0	0	+	+	++	0	0	0	0	0	0	0	0	0	+	+	0	0	0	0	0	0	0	0	+	0	0	
18	Containment of Settlements	0	0	0	+	0	+	++	+	+	+	+	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	
19	Congestion Charge on A48	0	+	+	+	+	+	0	0	-	-	+	-	0	0	0	0	0	0	0	0	0	-	0	-	-	-	0	0	0	0	0	0	0	+	0
20	Do Minimum	0	-	0	-	0	0	0	0	-	-	-	-	0	-	0	0	0	0	0	0	0	-	-	0	-	-	0	0	0	-	-	-	-	0	

Notes

\* Monmouthshire LTP Objectives are those adopted from the Regional Transport Plan.

# Only those highways-based options that straddle Monmouthshire and Gloucestershire have been appraised against the objectives of the two LTPs and the Cardiff Capital Region. Options wholly contained within Monmouthshire (#) have only been appraised against the objectives of the Monmouthshire LTP and the Cardiff City Region. Options contained wholly within Gloucestershire (##) have only been appraised against the objectives of the Gloucestershire LTP. All the non-highways-based options have been assumed as being related to the two LTPs and the Cardiff Capital Region Strategic Objectives in some way.

To avoid double counting in appraisal process only those objectives which are not covered in the AST assessment or WTS assessment are included.

### 2.3.3 Local Policy

#### ***Monmouthshire Local Development Plan***

The Monmouthshire Local Development Plan (LDP) is currently under review to identify the next areas for development, as the existing Plan covers the period 2011 – 2021.

The existing plan highlights Chepstow as a key settlement and a key area for strategic development. The Plan also recognises the A48 as an important strategic route to connect the area, and identifies the A48 by-pass scheme as one that needs to be protected. The Plan identifies a number of proposals within and surrounding Chepstow, such as a strategic mixed-use site is located to the west of Chepstow train station, which is located within close proximity to the A48, as well as:

- 10.95 hectares at Crick Road, Portskewett (allocated for mixed use residential and employment development) – up to 295 new dwellings
- 16.1 hectares at Fairfield Mabey site in Chepstow for missed use residential and employment development (around 450 units) – Planning granted
- 11 hectares at Rockfield Farm Undy for mixed use residential and employment, 270 new dwelling
- 7.81 hectares at Vinegar Hill, Undy, allocated for residential development (around 225 new dwellings).

As the A48 sits within an Air Quality Management Area (AQMA), this is highlighted within the LDP as a key constraint to development in Chepstow. Current and future developments are likely to result in increased pressure on the A48.

The Chepstow and Severnside area is under pressure to allow more development to meet current Plan housing allocations and with more growth for the next Plan period there is likely to be greater demand for housing within that area into the future. This will generate increased traffic movements and thus add to the case for change regarding the need for an intervention in Chepstow.

#### ***Forest of Dean Local Development Plan***

The Forest of Dean Local Development Plan (LDP) covers the period 2006 – 2026 and identifies that the greatest opportunities for new development are in Lydney. The District Council are starting the process for producing a new Allocations Plan – this would go until 2041.

The existing plan acknowledges that given the close proximity of Lydney to Chepstow, significant development in Lydney could have an adverse impact on Chepstow in terms of increased traffic generation on the A48 which would affect the AQMA in the town. Allocations in the existing LDP highlight housing and mixed use developments in the area surrounding Lydney, as well as residential allocations in Sedbury and Tutshill.

The current Adopted Allocations Plan contains the following allocations which are likely to impact upon traffic movements on the A48 corridor through Chepstow:

Sedbury and Tutshill:

- Land adjoining A48 and Bigstone Meadow, Tutshill (45 Dwellings);
- Land adjacent to Wyedean School, Sedbury (110 dwellings); and
- Land off Gloucester Road / Elm Road Tutshill (95 dwellings).

Lydney:

- AP40 - Lydney Town Centre, 1.9ha, retail and mixed use;
- AP43 - Pine End Works and Land to the North, 10.6ha, employment led mixed use;
- AP44 - Lydney Industrial Estate, 24ha, employment generating uses;
- AP47 - East of Lydney, 1684 dwellings and 25.8ha of employment;
- AP48 - Foundry site, 5.7ha, employment generating uses
- AP49 - Mead Lane, 6.5ha, employment generating uses;
- AP50 - Mead Lane (existing employment area), 22ha, employment generating uses;
- AP51 - Railway Station Area, 2.2ha, improvements to station plus enabling development comprising employment, commercial and housing;
- AP53 - Holms Farm, 1.8ha, 27 dwellings; and
- AP54 - Augustus Way, Lydney, 6.5ha, 120 dwellings plus POS.

Beachley camp is outlined in a recent Defence review as closing before 2027, therefore the next allocations plan will need to take account of possible redevelopment of this site. Housing might be an option but as the site is reasonably isolated it may be difficult to attract the size of development needed to ensure the required infrastructure is also provided.

All of these developments will place additional pressures on the A48, which could constrain the developments if improvements are not made.

### ***Monmouthshire Corporate Business Plan 2017 – 2022***

The Corporate Business Plan sets out the organisational goals which the Council commit to action. The themes that will guide the Council until 2022 include:

- The best possible start in life;
- Thriving and well-connected County;
- Maximise the potential of the natural and built environment;
- Lifelong well-being;
- Future focused Council.

An improvement in the A48 would contribute to meeting one of these goals, to create a thriving and well-connected community by improving connections and alleviating transport issues along the A48. The improvement in air quality along the section of the A48 through Chepstow would also help to meet the goal of maximising the potential of the natural and built environment, by improving the environment for residents.

**Monmouthshire Public Service Board Well Being Plan (2018)**

Monmouthshire County Council’s Well Being Plan sets out a series of objectives that aim to contribute toward achieving the steps as set out by Welsh Government in the WBoFGA.

The Well-Being Plan was developed following completion of the well-being assessment completed by the Public Service Board (PSB). The well-being plan sets out four objectives and the steps required to deliver the objectives. Table 2.11 outlines the objectives and how the well-being plan aims to deliver them.

**Table 2.11** Well Being Plan Objectives and Delivery Methods

Well-being Objective	Delivering the Well-being Objectives
1. Provide children and young people with the best possible start in life	Supporting the resilience of children and young people in relation to their mental health and emotional wellbeing. Working to ensure that schools and services for children focus on well-being and a more rounded approach than purely academic results. Working to tackle physical inactivity and obesity in order to increase the health and well-being of future generations Tackling the causes of Adverse Childhood Experiences and the perpetuation of generational problems in families.
2. Respond to the challenges associated with demographic change	Developing networks for all ages that support people’s well-being in their local communities, including social prescribing (see above for explanation). Developing a model of care built on well-being and looking after each other rather than through formal care provision Promoting active citizenship through volunteering, time-banking, person to person skill swap and corporate social responsibility Learning from good practice elsewhere to explore potential for intergenerational living, now and for the future Readdressing the supply and mix of housing stock to ensure suitable and affordable housing is available to all demographic groups
3. Protect and enhance the resilience of our natural environment whilst mitigating and adapting to the impact of climate change	Improving the resilience of ecosystems by working at a larger scale (landscape) to manage biodiversity and maximise benefits such as natural flood risk management Ensuring design and planning policy supports strong, vibrant and healthy communities that are good for people and the environment. Enabling renewable energy schemes, especially community-owned schemes, and developing new solutions including storage, smart energy, heat and local supply. Enabling active travel and sustainable transport to improve air quality and give other health benefits. Working with children and young people to improve their awareness, understanding and action for sustainable development and make them responsible global citizens of the future.
4. Develop opportunities for communities and businesses to be part of an economically thriving and well-connected county.	Maximising opportunities for Monmouthshire as part of the City Deal Better understanding the future of work and ensure training and education links with business to identify the skills needed in the Monmouthshire workforce now and in the future Developing new technologies for improving rural transport Facilitate better business networking to share knowledge and access to technology and regional opportunities to enable businesses to grow Exploring the potential for specialist centres of excellence in Monmouthshire e.g. food/hospitality, agriculture, tourism and technology

The PSB Well Being Plan recognises the need to address rural transport, by looking at promoting active travel and sustainable transport and using technology to improve rural transport. Improvements to the A48 will enable improved connectivity within the County, including rural transport. Enhancements to the A48 present an opportunity to use technology to deliver a sustainable transport network as well as provide improved Active Travel links and access to the Public Transport network. Furthermore, improvements to the A48 will support regional opportunities to enable businesses to grow.

## 2.4 Objectives for Intervention

A workshop was held with stakeholders in order to identify existing transport problems and issues and develop objectives for proposals for improvement to be appraised against.

These objectives were then grouped by theme and appraised for their ability to address identified problems (see Appendix B and worksheet 3, Appendix C of the Impacts Assessment Report) and their fit with Wales Transport Strategy Objectives and Well-being of Future Generations Act goals (see Appendix B).

The Objectives have been agreed with Monmouthshire CC and Gloucestershire CC and are:

- O1: To reduce congestion along the A48 during the peak periods, improving journey times and journey time reliability for users;
- O2: To improve network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through the provision of viable journey alternatives for all users;
- O3: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilising the A48 corridor, and reducing the need to travel;
- O4: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucestershire and Monmouthshire;
- O5: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48;
- O6: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor.

Table 2.12 shows the appraisal of the long list of options against the objectives (this is also included in Worksheet 8, Appendix J of the Impacts Assessment Report).

Table 2.12 Appraisal of Scheme Options against the Scheme Objectives

Option No.	Option	Objectives					
		O1: To reduce congestion along the A48 during the peak periods, improving journey times and journey time reliability for users	O2: To improve network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through the provision of viable journey alternatives for all users.	O3: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilising the A48 corridor, and reducing the need to travel.	O4: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucestershire and Monmouthshire.	O5: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	O6: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor.
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	+	++	0	0	++	+
2	Chepstow Bypass – Beachley and Sedbury	+++	+++	0	0	+++	+++
3	Chepstow Bypass - following the alignment of the railway	+	+	0	0	++	+
4	Chepstow Bypass - Beachley and Sedbury direct from M48	++	+	0	0	++	++
5	New M48 Junction (Possible Location Hayes Gate/St. Pierre Golf Course)	+	0	0	0	+	+
6	Severn Crossing between Lydney and A38/M5	+	+	0	0	0	0
7	A48 and A466 Upgrades	+	-	-	0	+	+
8	New Railway Stations	+	+	++	++	+	0
9	Public Transport Integration	+	0	+	+	+	0
10	Public Transport Upgrades (Regional)	+	+	0	++	+	0
11	Public Transport Upgrades (Local)	+	+	+	+	0	0
12	Improved Rail Services to Bristol	++	+	+	+	++	+
13	Park & Ride (Bus) / Park and Share	+	+	++	++	+	0
14	Park & Ride (Rail)	+	+	+	++	+	0
15	Active Travel Upgrades	+	+	++	0	0	0
16	Active Travel Additions	+	+	++	0	0	0
17	Reducing the need to travel	+	0	+	0	+	0
18	Containment of Settlements	+	0	+	0	+	0
19	Congestion Charge on A48	+	0	+	0	0	--
20	Do Minimum	--	--	-	-	-	0



## 2.5 Addressing Problems

Along with assessing the strategic fit of each of the long list of options, an exercise has been undertaken to assess how each of the long list of options addresses the identified problems for the study area. This is to ensure that any option taken forward addresses the specific issues for the study area and takes account of wider issues.

Appendix K in the Impacts Assessment Report provides a detailed discussion of how each option addresses each of the problem categories identified, with Table 2.13 providing a summary. The following is of note:

- Options such as the 'Containment of settlements' (Option 18) and 'a congestion charge' (Option 19) will do little to address many of the identified problems for the study area;
- Highway based options will on the whole help to address issues such as:
  - Congestion;
  - Network resilience;
  - Opening up new land for development or helping to permit access to proposed existing development sites;
  - Helping to improve air quality along the A48 corridor;
  - Improving connectivity between communities along the A48 corridor to more regional areas such as south east Wales and Bristol.
- Rail based public transport options may have the ability to improve links with Bristol for the communities along the A48 corridor, to help improve connectivity to wider regional areas. They may also offer the potential for modal shift for existing road users to free up capacity along the A48 helping to address issues of congestion.
- Bus based public transport options may not offer the same level of congestion relief to the A48 that highway or rail based public transport options may, however, they offer the ability particularly through local route improvements to address the issue of severance of the communities of Sedbury and Tutshill with Chepstow, helping to encourage more local trips to be undertaken by sustainable means. Active travel improvements would also provide this benefit, by reducing the severance feature of the River Wye for communities of Sedbury and Tutshill and allow more local journeys along the A48 corridor to be undertaken by sustainable means.

**Table 2.13 Summary of Problems that Options will Address**

Option Number	Option	Tackling Identified Problems <sup>11</sup>	Appraisal
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	<ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Network Resilience</li> <li>• Future Development</li> <li>• Air Quality</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> <li>• Development Restrictions</li> <li>• Active Travel</li> </ul>	+ +
2	Chepstow Bypass – Beachley and Sedbury	<ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Network Resilience</li> <li>• Future Development</li> <li>• Air Quality</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> <li>• Development Restrictions</li> <li>• Active Travel</li> </ul>	+ +
3	New highway Route following line of Railway	<ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Network Resilience</li> <li>• Future Development</li> <li>• Air Quality</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> <li>• Development Restrictions</li> <li>• Active Travel</li> </ul>	+
4	New Bypass utilising junction from M48	<ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Network Resilience</li> <li>• Future Development</li> <li>• Air Quality</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> <li>• Development Restrictions</li> <li>• Active Travel</li> </ul>	+
5	New M48 Junction at Hayes Gate/St. Pierre Golf Course	<ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Future Development</li> </ul>	0
6	Severn Crossing between Lydney and A38/M5	<ul style="list-style-type: none"> <li>• A48 Congestion</li> </ul>	- -
7	A48 and A466 Upgrades	<ul style="list-style-type: none"> <li>• Increase in A48 Traffic</li> </ul>	- -
8	Option 8: New Railway Stations	<ul style="list-style-type: none"> <li>• Network Resilience</li> <li>• Air Quality</li> </ul>	-

<sup>11</sup> The Problems Identified are from Worksheet 1 (Appendix C Impacts Assessment Report)

Option Number	Option	Tackling Identified Problems <sup>11</sup>	Appraisal
9	Public Transport Integration	<ul style="list-style-type: none"> <li>Severance / Connectivity / Access</li> </ul>	+
10	Public Transport Upgrades (Regional)	<ul style="list-style-type: none"> <li>Bus Services / School Transport</li> <li>Severance / Connectivity / Access</li> </ul>	0
11	Public Transport Upgrades (Local)	<ul style="list-style-type: none"> <li>A48 Congestion</li> <li>Rat-running</li> <li>Future Development</li> <li>Severance / Connectivity / Access</li> <li>Increase in A48 Traffic</li> <li>Bus Services / School Transport</li> <li>Parking</li> </ul>	+
12	Improved Rail Services to Bristol	<ul style="list-style-type: none"> <li>A48 Congestion</li> <li>Rat-running</li> <li>Future Development</li> <li>Air Quality</li> <li>Development Restrictions</li> </ul>	+
13	Park & Ride / Share	<ul style="list-style-type: none"> <li>Rat-running</li> <li>Lift sharing</li> <li>Air quality</li> <li>Bus services</li> <li>Parking</li> </ul>	+
14	Park & Ride (Rail)	<ul style="list-style-type: none"> <li>A48 Congestion</li> <li>Rat running</li> <li>Network Resilience</li> <li>Lift-sharing</li> <li>Air quality</li> <li>Increase in A48 Traffic</li> <li>Rail links</li> <li>Development restrictions</li> <li>Parking</li> </ul>	+
15	Active Travel Upgrades	<ul style="list-style-type: none"> <li>Air quality</li> <li>Increase in A48 traffic</li> <li>Bus services / school transport</li> <li>Severance / Connectivity / Access</li> <li>Active Travel</li> <li>Parking</li> </ul>	+
16	Active Travel Additions	<ul style="list-style-type: none"> <li>A48 Congestion</li> <li>Network resilience</li> <li>Future development</li> <li>Increase in A48 traffic</li> <li>Bus services / school transport</li> <li>Severance / Connectivity / Access</li> <li>Active travel and safety</li> <li>Parking</li> </ul>	+
17	Reducing the need to travel	<ul style="list-style-type: none"> <li>A48 Congestion</li> <li>Air quality</li> </ul>	0
18	Containment of Settlements	<ul style="list-style-type: none"> <li>Rat running</li> <li>Parking</li> <li>A48 Congestion</li> <li>Air quality</li> </ul>	0
19	Congestion Charge on A48	N/A	0

## 2.6 Summary of Strategic Case

The Strategic Case has outlined a clear need for intervention for the A48 corridor to reduce congestion, and improve air quality and connectivity in Chepstow and the wider region. Continuation with a Do Minimum approach could result in a continued decline in air quality alongside the A48 and constrain future development. It may also inhibit the ability of both Monmouthshire and Southwest Gloucestershire to adapt and capitalise from future changes outlined for the wider region.

The problems have been identified and a long list of options developed which have been appraised against a number of national, regional and local policy objectives to assess their suitability and strategic fit as solutions. Each option has also been assessed against its ability to address identified problems.

Table 2.14 provides a summary of the results of the various appraisals, with additional summary tables by scheme provided in Appendix C.

Most options perform well against the higher level appraisal criteria e.g. the Wales Transport Strategy and the Well-being of Future Generations Act (Wales). In particular, the following options are assessed as likely to have a mostly positive impact on Wales Transport Strategy outcomes and Well-being of Future Generations Act (Wales) goals:

- Option 8: New Railway Stations;
- Option 9: Public Transport Integration;
- Option 10: Public Transport Upgrades (regional);
- Option 11: Public Transport Upgrades (local); and
- Option 12: Improved Rail Services to Bristol;
- Option 13: Park and Ride / Share;
- Option 14: Park and Ride (Rail);
- Option 15: Active Travel Upgrades; and
- Option 16: Active Travel Additions.

These options are all based around improvements to public transport and Active Travel and also perform well when appraised against local and regional transport policy objectives.

The option that could be summarised as performing collectively the best against scheme specific objectives is Option 2: Chepstow Bypass – Beachley and Sedbury. Other options that also perform well against objectives include:

- Option 1: Chepstow Bypass - Land north of Tutshill including upgrading the A466
- Option 4: New Bypass utilising junction from M48;
- Option 8: New Railway Stations;
- Option 10: Public Transport Upgrades (Regional);
- Option 12: Improved Rail Services to Bristol;
- Option 13: Park & Ride/Share;

- Option 14: Park & Ride (Rail);
- Option 15: Active Travel Upgrades;
- Option 16: Active Travel Additions.

Options which will best address identified problems within the study area include:

- Option 1: Chepstow Bypass - Land north of Tutshill including upgrading the A466
- Option 2: Chepstow Bypass – Beachley and Sedbury;
- Option 3: New highway Route following line of Railway;
- Option 4: New Bypass utilising junction from M48;
- Option 9: Public Transport Integration;
- Option 10: Public Transport Upgrades (Regional);
- Option 11: Public Transport Upgrades (local);
- Option 12: Improved Rail Services to Bristol;
- Option 13: Park & Ride/Share; and
- Option 14: Park & Ride (Rail).

Table 2.14 Long List of Options Appraisal Summary

Option Ref	Option	Wales Transport Strategy (Outcomes)			WBOFGA (Goals)	Local Transport Plan Objectives		Cardiff Capital Region Strategic Objectives	Objectives					
		Soc.	Econ.	Env.		MCC	GCC		O1	O2	O3	O4	O5	O6
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	+	+	-	0	+	0	0	+	++	0	0	++	+
2	Chepstow Bypass – Beachley and Sedbury	+	+	-	0	+	+	0	+++	+++	0	0	+++	+++
3	New highway Route following line of Railway	+	+	0	0	0	0	0	+	+	0	0	++	+
4	New By pass utilising junction from M48.	0	0	0	0	0	0	0	++	+	0	0	++	++
5	New M48 Junction (Possible Location Hayes Gate/St. Pierre Golf Course)	+	+	0	0	0	0	0	+	0	0	0	+	+
6	Severn Crossing between Lydney and A38/M5	0	0	0	0	0	0	0	+	+	0	0	0	0
7	A48 and A466 Upgrades	+	+	-	0	0	-	0	+	-	-	0	+	+
8	New Railway Stations	+	+	+	+	++	+	+	+	+	++	++	+	0
9	Public Transport Integration	+	+	+	+	+	+	0	+	0	+	+	+	0
10	Public Transport Upgrades (Regional)	+	+	+	+	+	+	+	+	+	0	++	+	0
11	Public Transport Upgrades (Local)	+	+	+	+	+	+	+	+	+	+	+	0	0
12	Improved Rail Services to Bristol	+	+	+	+	++	+	+	++	+	+	+	++	+
13	Park & Ride/Share	0	+	+	+	+	+	+	+	+	++	++	+	0
14	Park & Ride (Rail)	+	+	+	+	+	+	+	+	+	+	++	+	0
15	Active Travel Upgrades	+	+	+	+	+	+	+	+	+	++	0	0	0
16	Active Travel Additions	+	+	+	+	+	+	+	+	+	++	0	0	0
17	Reducing the need to travel	0	0	+	+	+	+	0	+	0	+	0	+	0
18	Containment of Settlements	+	0	+	+	+	+	0	+	0	+	0	+	0
19	Congestion Charge on A48	-	-	+	0	+	-	0	+	0	+	0	0	--
20	Do Minimum	-	-	-	0	-	-	-	--	--	-	-	-	0

Key

Large positive (+ + +)	Slight negative (-)
Moderate positive (+ +)	Moderate negative (- -)
Slight positive (+)	Large negative (- - -)
Neutral (0)	

## 3. Transport Case

### 3.1 Introduction

This Transport Case provides an initial assessment of the expected impacts of the long list of options developed in Chapter 2 on the criteria of Economy, Environment, and Social for tackling the associated problems and constraints that have been identified. The assessment is based on currently available evidence, and where necessary, recommendations are provided on the required additional evidence base for WelTAG Stage 2 (Outline Business Case).

### 3.2 Monetised Benefits

At this WelTAG Stage 1 (Strategic Outline Case), cost bandings have been produced for the long list of options (see Table 3.1 and Section 5.2). However, options are not yet developed to a level whereby a full estimated cost can be provided and a Value for Money assessment can be undertaken.

As part of a Value for Money assessment, the types of benefits that may be able to be monetarised at WelTAG Stage 2 (Outline Business Case) include:

- Journey time savings;
- Accident savings;
- Vehicle operating costs;
- Revenues;
- Environmental benefits (noise, air quality etc); and
- Physical activity.

In order to provide the relevant detail required to provide monetarised benefits, a traffic model of the Chepstow area and the A48 into Gloucestershire would need to be produced at further stages of appraisal.<sup>12</sup> In addition, it is likely that for any rail based public transport options that may be taken forward, timetable studies may need to be undertaken and survey data collected to feed into a Value for Money appraisal.

### 3.3 Costs

Each of the long list of options have been placed within a cost band. This is to provide an idea of the level of cost of an option and is a high level estimate only. The cost of the short-listed options would be estimated in more detail at Stage 2 to feed into a Value for Money appraisal. It is very likely that cost boundaries may change when further information is

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<sup>12</sup> The South East Wales Transport Model does include the Chepstow area. However as it is on the edge of the model, it has been confirmed by the consultant operating the model that it is not suited to test the Chepstow area in future scenario's due to zoning issues to the east of the A48. Further work would therefore be required to develop the model in this area.

available as an option is developed. The cost bandings provided should therefore not be treated as a final confirmed cost, but an indication only of possible indicative cost.

**Table 3.1 Long List Options Cost Bandings**

Option No.	Option	Cost Band *
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	£100m plus
2	Chepstow Bypass – Beachley and Sedbury	£100m plus
3	Chepstow Bypass - following the alignment of the railway	£100m plus
4	Chepstow Bypass - Beachley and Sedbury direct from M48	£50m - £100m
5	New M48 Junction (Possible location Hayes Gate/St. Pierre Golf Course)	£10m - £15m
6	Severn Crossing between Lydney and A38/M5	£100m plus
7	A48 and A466 Upgrades	£25m - £50m
8	New Railway Stations	£5-10 million (per station, no costs for operating services to stop included)
9	Public Transport Integration	£100m plus (for all Wales scheme)
10	Public Transport Upgrades (Regional)	£1-5 million (per annum operating costs)
11	Public Transport Upgrades (Local)	£1-5 million (per annum operating costs)
12	Improved Rail Services to Bristol	£10-15 million (without cost of relief line upgrades. Includes annual costs for operating service) Estimated cost with relief line upgrades unknown
13	Park & Ride (Bus) / Park and Share	£5-10 million (with approx. £2.5 million per annum of this operating costs to service)
14	Park & Ride (Rail)	£1-5 million (excluding cost of any additional rail services)
15	Active Travel Upgrades	< £1 million
16	Active Travel Additions	< £1 million
17	Reducing the need to travel	N/A
18	Containment of Settlements	N/A
19	Congestion Charge on A48	N/A
20	Do Minimum	N/A

Notes \* - These are high level estimates, not based on any feasibility work / design and may change at further stages of appraisal.



### 3.4 Non-Monetarised Benefits

A qualitative appraisal has been undertaken of all long list options against Economic, Environmental, Cultural and Social criteria. A summary of the results of this appraisal are presented in Table 3.2 (also provided in Worksheet 9 Appendix J in the Impacts Assessment Report).

Where an impact is yet to be assessed NYA (Not Yet Assessed) is added to the table. The appraisal provided for each option will be reviewed at WelTAG stage 2 (Outline Business Case), when further quantitative information may be available.

Table 3.2 Appraisal Summary Table Results (Economic, Environmental and Social)

Criteria	Qualitative Assessment (Options)																			
	Option 1 Bypass - Land north of Tutshill	Option 2 Bypass - Beachley and Sedbury	Option 3 Bypass - following alignment of railway	Option 4 Bypass - Beachley & Sedbury direct from M48	Option 5 - New M48 junction	Option 6 - Severn Crossing between Lydney and A38/M5	Option 7 - A48 and A466 upgrades	Option 8 - New Railway Stations	Option 9 - Public Transport Integration	Option 10 - Public Transport Upgrades (Regional)	Option 11 - Public Transport Upgrades (Local)	Option 12 - Improved Rail Services to Bristol	Option 13 - Park & Ride (Bus)/Park & Share	Option 14 - Park & Ride (Rail)	Option 15 - Active Travel Upgrades	Option 16 - Active Travel Additions	Option 17 - Reducing the need to travel	Option 18 - Containment of Settlements	Option 19 - Congestion Charge on A48	Option 20 - Do Minimum
<b>Economic</b>																				
Business Users & Reliability Impact	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA
Regeneration	+	+++	+	+++	0	+	+	+	0	+	0	++	0	+	0	+	+	+	--	-
Wider Impacts	++	+++	+	+++	+	++	+	+	+	+	0	++	+	+	+	+	+	0	--	-
<b>Environment</b>																				
Noise	0	+	-	+	0	-	--	-	0	0	0	-	0	0	0	0	+	+	+	-
Air Quality	0	+	+	+	0	0	-	+	+	+	+	+	0	+	+	0	+	+	+	-
Greenhouse Gases	0	0	0	0	0	0	-	+	+	+	+	+	0	+	+	0	+	+	+	-
Landscape	---	---	---	---	-	---	0	-	0	0	0	-	-	-	0	-	0	-	0	0
Townscape	+	+	--	+	0	--	---	-	0	0	0	0	0	0	0	0	0	-	0	-
Historic Landscape	---	-	---	-	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0
Cultural Heritage	--	-	--	-	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-
Biodiversity	--	--	--	--	-	--	0	-	0	0	0	-	-	-	+	0	+	-	0	-
Water Environment	---	---	0	0	0	---	0	0	0	0	0	0	0	0	-	-	0	0	0	0
<b>Social</b>																				
Commuting and Other Users	+	+++	+	+++	+	+++	++	++	+	+	+	+++	+	++	+	+	+	+	-	-
Reliability Impact on Commuting and Other Users	+	+++	+	+++	+	+++	++	++	0	+	+	+++	+	+	+	+	+	+	-	-
Physical Activity	-	-	-	-	-	-	0	+	+	+	+	+	0	0	++	++	+	+	0	0
Journey Quality	+	++	++	++	0	++	0	+	+	+	+	++	+	++	+	+	0	0	-	-
Accidents	++	++	++	++	0	+	+	0	0	0	0	0	0	0	0	0	+	+	0	-
Security	0	0	0	0	0	+	0	+	0	+	+	+	+	+	+	+	0	0	0	0
Access to Services	++	+++	+	+++	-	+++	+	+	0	+	+	++	+	+	+	+	+	+	-	-

Criteria	Qualitative Assessment (Options)																			
	Option 1 Bypass - Land north of Tutshill	Option 2 Bypass - Beachley and Sedbury	Option 3 Bypass - following alignment of railway	Option 4 Bypass - Beachley & Sedbury direct from M48	Option 5 - New M48 junction	Option 6 - Severn Crossing between Lydney and A38/M5	Option 7 - A48 and A466 upgrades	Option 8 - New Railway Stations	Option 9 - Public Transport Integration	Option 10 - Public Transport Upgrades (Regional)	Option 11 - Public Transport Upgrades (Local)	Option 12 - Improved Rail Services to Bristol	Option 13 - Park & Ride (Bus)/Park & Share	Option 14 - Park & Ride (Rail)	Option 15 - Active Travel Upgrades	Option 16 - Active Travel Additions	Option 17 - Reducing the need to travel	Option 18 - Containment of Settlements	Option 19 - Congestion Charge on A48	Option 20 - Do Minimum
Affordability (Value for Money) #	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	0
Severance	++	+++	+++	++	+	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Option Values	0	0	0	0	0	0	0	+	++	+	+	++	+	+	0	0	0	0	0	0
<b>Public Accounts</b>																				
Cost to Broad Transport Budget	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA
Indirect Tax Revenues	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA
<b>Occurrence of Impacts # #</b>																				
When and where impacts will occur (positive and negative)	During construction and operational stage, in vicinity of route.	During construction and operational stage, in vicinity of route.	During construction and operational stage, in vicinity of route.	During construction and operational stage, in vicinity of route.	During construction and operational stage, in vicinity of route.	During construction and operational stage, in vicinity of route.	During construction and operational stage, in vicinity of route.	During construction and operation. Communities of New House / Tutshill and wider Chepstow area	Post option implementation for local bus network in Chepstow	Post option implementation for regional bus network in Chepstow	Post option implementation for local bus network in Chepstow	Poss. during construction if mainline works. Users of local rail network may face disruption during works.	Poss. during construction	Poss. during construction to local residents of Chepstow and Lydney Station	Poss. during construction to local residents. Benefits to users and local communities	Operational stage	N/A	N/A	Operational stage	N/A
Who or what will experience the impacts	Wye Valley users, users of A48 and residents of northern Tutshill	Residents of Thornwell and Sedbury, users of Offa's Dyke and River Wye, users of A48	Residents of Thornwell and central Chepstow, and rail network/ Chepstow railway station. Users of A48	Residents of parts of Beachley (if camp closes) and Sedbury. Users of A48	Users of M48 and A48 and local dwellings/ businesses	Residents of Berkeley and communities/ dwellings/ businesses in vicinity of the route.	Residents and businesses on the A48 and A466 and users of the roads.	Users of the rail network	Users of local public transport network	Users of regional public transport network	Users of local public transport network	Users of the rail network	Users of local public transport network	Users of local public transport network	Beneficial impacts for pedestrians and cyclists	Beneficial impacts for pedestrians and cyclists	N/A	N/A	Users that will be subject to congestion charge	N/A

**Notes**

# Although Affordability (Value for Money) has yet to be assessed in terms of a numerical Benefit to Cost Ratio, Options Deliverability includes an assessment as to how each option may be able to generate benefits, in qualitative terms (see Table 3.3).

# # Occurrence of impacts text is preliminary only.

### 3.5 Public Accounts

At this stage the impact on public accounts has not been calculated for any specific option. Elements that might be appraised in further appraisal work as part of assessing the impact on public accounts include the affect on tax revenues. For example, some of the options proposed could result in differences in fuel and revenues from public transport fares for users which may therefore result in a change in indirect tax revenues.

As part of undertaking the WeITAG Stage 2 (Outline Business Case) assessment, impacts on public accounts will be calculated for the short-listed options.

### 3.6 Value for Money

At present no quantitative Value for Money assessment has been undertaken for any of the options.

A Benefit Cost Ratio (BCR) will be produced for the short-listed options as part of a WeITAG Stage 2 (Outline Business Case) assessment.

In order to produce a BCR for short-listed options, data would be required to be able to place monetarised values on the following:

- Noise;
- Air quality;
- Greenhouse gas emissions;
- Journey quality;
- Physical activity;
- Accidents; and
- Journey times.

Data to provide monetised values to the above would come from traffic modelling data and for any rail based public transport options from timetable studies and possible passenger survey data. As previously outlined, this would mean producing a new multi-modal model of the Chepstow area including collecting survey data.

Capital cost and also any ongoing costs to options e.g. maintenance costs would need to be calculated to produce BCRs.

As part of this WeITAG Stage 1 (Strategic Outline Case) appraisal comment has been made on some of the benefits that options may generate (see Worksheet 10, Appendix J in the Impacts Assessment Report, and Table 3.3). This is not based on any quantitative figures and is indicative only of the likely benefits that may or may not be generated that would feed into a future Value for Money assessment. These assessments may therefore change as part of any further appraisal undertaken at WeITAG Stage 2 (Outline Business Case).

**Table 3.3 Qualitative Benefits Comments**

Option No.	Option	Likely Benefits
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	The location of this option may not be attractive to all A48 through traffic, as it will be a longer route to/from the M48, which will limit the journey time savings and other associated benefits. Large benefits would need to be generated to offset anticipated large capital costs.
2	Chepstow Bypass – Beachley and Sedbury	This option will provide a direct link between the A48 to the east of Chepstow and the M48. Its ability to attract Tutshill traffic is seen as important in terms of benefits to local roads. Linking into an existing M48 junction that directly serves Chepstow gives flexibility in terms of the motorway corridor and will maximise its use and associated benefits. Large benefits would need to be generated to offset anticipated large capital costs.
3	New highway Route following line of Railway	This option will provide a direct link between the A48 in eastern Chepstow and the M48. Linking into an existing M48 junction that directly serves Chepstow gives flexibility in terms of the motorway corridor and will maximise its use and associated benefits. However, it will not address existing congestion issues at Wye Bridge (a large disbenefit). It will also require close working with Network Rail to alleviate any of their potential objections. Large benefits would need to be generated to offset anticipated large capital costs.
4	New Bypass – Beachley & Sedbury direct from M48	This option will provide a direct link between the A48 to the east of Chepstow and the M48. Its ability to attract Tutshill traffic is seen as important in terms of benefits to local roads. The location of the M48 junction is not best placed for flexibility in terms of the motorway corridor and attractiveness to all users although it could benefit the redevelopment of the Beachley area. Large benefits would need to be generated to offset anticipated large capital costs.
5	New M48 Junction (Possible location Hayes Gate/St. Pierre Golf Course)	This option will only give relief to High Beech Roundabout, which will allow slightly improved access into and out of Chepstow. Greater benefits are likely if this option is also associated with access into future development sites in SE Monmouthshire although for this, a location further west would be more appropriate.
6	Severn Crossing between Lydney and A38/M5	Other than providing an additional crossing of the River Severn, the wider benefits of this option are largely unknown. Large benefits would need to be generated to offset anticipated large capital costs.
7	A48 and A466 Upgrades	This option will continue to carry existing traffic flows along the existing A48 with marginal gains in economic benefits and many non-monetised disbenefits.
8	New Railway Stations	May not generate journey time savings if no increase in line frequency, or increased connection to Bristol services. More train stops leads to journey time increases. Catchments for new station users could be limited due to proximity to existing Chepstow station.
9	Public Transport Integration	Large capital cost. May not generate traditional benefits which could be monetarised.
10	Public Transport Upgrades (Regional)	Catchment area, population density and journey time of service likely to impact benefits. Congestion at end destinations to services will impact benefits.
11	Public Transport Upgrades (Local)	Increase in frequency may lead to benefits for local journeys.

Option No.	Option	Likely Benefits
12	Improved Rail Services to Bristol	Improved frequency, linkages and a reduction in waiting time for connections will create journey time benefits as well as increased patronage.
13	Park & Ride/Share	Unlikely to generate significant journey time benefits, or create a substantial mode shift.
14	Park & Ride (Rail)	Accompanied with service frequency enhancements and better connection with Bristol services at Severn Tunnel Junction could lead to increase in patronage.
15	Active Travel Upgrades	Could lead to safety benefits as well as public health improvement benefits
16	Active Travel Additions	Could lead to safety benefits as well as public health improvement benefits
17	Reducing the need to travel	N/A
18	Containment of Settlements	N/A
19	Congestion Charge on A48	N/A
20	Do Minimum	N/A

### 3.7 Summary of Transport Case

At this stage much of the information required to produce a full transport case is not available. However, a qualitative assessment of the economic, environmental and social impacts of the long list of options has been undertaken with the results presented in this chapter.

## 4. Commercial Case

### 4.1 Introduction

The commercial case provides an outline of the procurement methods that could be used to implement a chosen option and evidence that a best value approach will be taken.

At this stage with no chosen preferred option it is not possible to provide an outline of the final procurement methodology that will be followed.

This chapter provides an outline of the standard tendering and procurement procedures followed by Monmouthshire County Council, which will likely form the basis of the methodology for procuring services to undertake further feasibility works to develop a final preferred option. Implementation of any final preferred option is likely to be more diverse in terms of procurement as it may be cross-border in nature, therefore involving a complex delivery model encompassing a range of parties.

### 4.2 Procurement method

Monmouthshire County Council are likely to lead on the procurement of any further feasibility work undertaken on the recommended short-list of options (WeITAG Stage 2 (Outline Business Case)). This will be based around their standing orders, utilising the framework available to them for procuring transportation studies.

For implementation of the final preferred option, the procurement methodology adopted will vary based on a number of factors including:

- Whether a highway or public transport based scheme is taken forward - any of the rail options would require interaction with Network Rail and the new franchise supplier for Wales and Border (Keolis/Amey) to ensure that their processes and procedures were followed;
- The value of the scheme – high value options require different processes to be followed;
- Whether the option is cross border in nature – this may require a more complex procurement methodology involving a number of parties from both England and Wales;
- How the final preferred option is financed – for example any compliance with grant funding procurement rules or if the scheme is funded through a PFI.

The type of contract and / or the delivery model used can only be defined once the short-list of options or the final preferred option is known.

### 4.3 TUPE / HR implications

It is difficult to confirm for certain whether there will be any TUPE or HR implications until the final preferred option is known. However, some options such as increasing rail or bus frequencies or implementing new park and ride services could result in HR implications, with potential additional staff required to operate the additional services.

The highways based schemes are likely to result in an increase in employment, if only temporarily, during construction.

#### 4.4 Summary of Commercial Case

This chapter has highlighted some of the issues that may need to be considered when procuring the final preferred option. Until the final preferred option is known, details regarding procurement methodology and contract types are difficult to define.

It is likely that Monmouthshire County Council's standing orders will be followed for the procurement of any further feasibility or option development work.



## 5. Financial Case

### 5.1 Introduction

The Financial Case concentrates on the affordability of a proposal, its funding arrangements and technical accounting issues (its value for money is scrutinised in the Transport Case). As no preferred option has been chosen, the financial case is difficult to develop at this stage.

This chapter highlights the data that will be required in order to produce the financial case and provides a summary of the potential funding that maybe available to take forward any of the recommended options.

### 5.2 Capital Costs

Each of the long list of options have been placed within a cost banding (see Table 3.1). This is to provide an indication only of the level of cost of an option. It is very likely that this could change when further information is available and an option is developed as part of any WelTAG Stage 2 (Outline Business Case) work.

### 5.3 Ongoing Costs

Consideration will need to be given at Stage 2 of the WelTAG process (Outline Business Case) to the ongoing costs of the short list of options. This may include aspects such as ongoing maintenance costs and any other revenue costs.

For the majority of highway based interventions that are included on the long list of options, there would be an increase in maintenance costs as a new section of highway is being provided. However, it would be hoped that these would be kept to a minimum through the use of materials which will likely have a greater life span, and installing long life assets.

Public transport options can have high operational costs, due to the ongoing revenue that is required to operate services. Options such as Park and Ride, increases in local bus services and increasing rail service frequencies are all likely to have ongoing annual operating costs that would need to be covered either through generated revenue or providers.

### 5.4 Potential Funding

Some of the options included on the long list require large amounts of capital funding. At present, there is no single identified pot for taking forward high value capital schemes within either Wales or England.

Securing funding to take forward any cross border solutions will likely require funding from a range of sources and coordination between funding bodies in terms of implementation and meeting funding conditions.

During the WelTAG Stage 1 (Strategic Outline case) workshop, funding sources for implementation of a final preferred option and for further feasibility and option development work were discussed.

The following could provide potential sources for scheme implementation (it is likely that a variety of pots of funding may be required due to the level that would be required for some of the options):

- Section 106 / Community Infrastructure Levy (CIL) – The Community Infrastructure Levy (CIL) is a planning charge, introduced by the Planning Act 2008 as a tool for local authorities in England and Wales to help deliver infrastructure to support the development of their area. Section 106 agreements can also be used to leverage funds from new developments to allow infrastructure improvements. The levels of 106 funding and CIL that could be raised by local developments within Chepstow / Gloucestershire is unlikely to be high enough to cover the cost of some of the highway options. CIL / Section 106 could be used to fund or contribute towards some of the proposed smaller scale highway improvements, active travel or small scale public transport infrastructure improvements.
- Welsh Government – Local Transport Fund – Welsh Government provides capital funding to Local Authorities as part of an annual bidding programme to invest in transport schemes. The preferred maximum allocation available per scheme is £1.5m (In total there is £10.0m available for applications for existing schemes and for applications for active travel schemes and £5.0m for existing schemes that started before 2017/18. An additional £60 million has been made available for Active Travel schemes for the next three years from 2018/19). The Local Transport Fund is unlikely to be of the scale required to implement the majority of the options included on the long list. However, it could be used to fund some of the proposed smaller scale highway improvements, Active Travel or small scale public transport infrastructure improvements.
- Welsh Government – Local Transport Network Fund - Welsh Government capital funding available to Local Authorities as part of an annual bidding programme. The Local Transport Network Fund is a separate pot (£4 million in total was available in 2018/19) for local authorities to fund schemes to improve the local transport network in terms of improving public transport journey times and reliability, connecting communities and enabling access to economic opportunities and improving air quality. This fund is unlikely to be of the scale required to implement the majority of public transport-based options included within the long list. It may be able to be used to fund some small scale options that address connectivity e.g. between Chepstow and Tutshill / Sedbury.
- Cardiff Capital Region City Deal – Applications for funding for key transport schemes can be made via the Regional Transport Authority. The majority of the city deal current transport spend commitment is based on delivering the South Wales Metro. Those proposed options that tie in with the Metro network may be more likely to gain RTA funding.
- Private Finance Initiatives (PFI) - PFI is a method of providing funds for major capital investments where private firms are contracted to complete and manage public projects. Under a private finance initiative, the private company, instead of the government, handles the up-front costs with the public body repaying the funds over time. This could be an option for financing some of the proposed long list options, particularly the large value highway options. Welsh Government are currently looking at this funding option to implement further upgrades to sections of the A465. However, with some of the A48 highway proposals being cross-border this may add a layer of complexity to a traditional PFI model.
- DCLG - Housing Infrastructure Fund: Forward Funding Government capital grant programme: Up to £250 million (can be bid for by upper most tier of English Local

Authorities). This can be used to bid for strategic and high-impact infrastructure schemes which gives the market confidence to provide further investment and make more land available for development and future homes. The Fund is available over four years from 2017/18 to 2020/21. Some of the highway schemes proposed could be applicable for this funding, especially those where a case can be made that land is being made available for development and future homes. However, it is unlikely that any of the highway schemes on the list would be developed to a sufficient level to meet the funding deadlines of 2020/21 for this grant.

- Highways England – Growth and Housing Fund – £5 to £10 million viable to bid for by the Local Enterprise Partnerships and the Combined Authorities. To be used to mobilise development sites that require / promote investment on or near the Strategic Road Network to allow them to progress quickly. For a scheme to be eligible under the fund it must first be demonstrated that the intervention would be complementary to and not a replacement for the other funds, from private to public sources. It may be possible for some of the highway options could be applicable for this funding source, if it could be demonstrated that no alternative funding would be available and would promote investment near the Strategic Road Network. However, all of the highway options are of a value well above this Fund allowance and therefore, could only ever be used as a part funding source.
- Department for Transport – National Road Fund – Funding for Major Road Network. The A48 is included in the Major Road Network within Gloucestershire. As part of the new Transport Investment Strategy a share of the annual National Road Fund, funded by Vehicle Excise Duty (VED), would be given to local authorities to improve or replace the most important A-roads under their management. The value of the majority of the highway options proposed are likely to be above the value of this fund and therefore could only form part of the funding profile required.

The following could provide potential sources of funding for further option development and appraisal work:

- Regional Transport Authority – Development Fund – Awards made to take forward further development / feasibility works on schemes.
- Monmouthshire CC & Gloucestershire CC internal budgets – Any funding available from the internal council transport budget.
- Local Transport Fund – Monies can be used from this budget to undertake scheme pre works. The next round of funding will be available in 2019/20 financial year. Monmouthshire CC are eligible to apply for this funding.

At this stage it is difficult to specifically pinpoint which of the proposed options may have a greater chance of securing one particular type of funding grant.

## 5.5 Summary of Financial Case

The Financial Case concentrates on the affordability of a proposal, its funding arrangements and technical accounting issues. As no final preferred option is yet defined, it is difficult to provide a complete assessment of the affordability of proposals (this will be undertaken as part of any future WeITAG stages). Comment has been provided on potential funding sources for a final preferred option and for taking forward further feasibility study work.

## 6. Management Case

### 6.1 Introduction

The Management Case assesses whether a proposal is deliverable. It should consider the project planning, governance structure, risk management, communications and stakeholder management, benefits realisation and assurance.

There should be a clear and agreed understanding of what needs to be done, why, when and how, with measures in place to identify and manage any risks. The Management Case sets out a plan to ensure that the benefits set out in the Transport Case are realised and will include measures to assess and evaluate this.

At WelTAG Stage 1 (Strategic Outline Case) with no preferred option selected it will be difficult to define exact parameters for the management case. However, this chapter provides a summary of the types of governance and stakeholder management that may be undertaken and the benefits that may be realised by interventions undertaken within the Chepstow study area. It also provides an outline assessment of the deliverability of the long list of options, highlighting some of the risks to potential implementation.

### 6.2 Scheme Development and Legal Powers

At present no formal design work has been undertaken on any of options included within the long list. For each of the short-listed options design work would need to be conducted to a concept / outline design level, and in parallel with the WelTAG Stage 2 (Outline Business Case) appraisal.

Until a final preferred option is developed, it is difficult to outline the exact statutory procedures that would need to be followed. Listed below is a high level summary of the types of statutory procedures that might need to be completed if a highway based scheme is taken forward:

- Planning permission with all associated processes such as EIA, FCA would need to be completed;
- Environmental and ecological processes;
- Compulsory Purchase Orders may need to be issued in order to purchase the required land to allow the desired route alignment;
- Some of the large scale interventions are likely to be subject to a public enquiry;
- Liaison with statutory bodies and service providers.

In terms of public transport based schemes on the long list, some of the statutory procedures that might need to be completed include:

- Planning permission (for any railway station changes if rail Park and Ride is taken forward or Park and Ride / Share sites);
- Environmental and ecological processes;

- Liaison with Network Rail for relevant GRIP approvals to any designs or changes to the rail network and application for any possessions that may be needed for any railway work;
- Liaison with Welsh Government and the rail franchise providers;
- Liaison with bus operators and local authorities for changes to services.

This list is not exhaustive and will be developed further at future WeITAG stages as options are rationalised and a final preferred option chosen. As a final preferred option may be cross border in nature this may mean that there are additional statutory procedures and legal process to follow for scheme implementation.

## 6.3 Governance

### 6.3.1 *Governance Structure*

The WeITAG Stage 1 work has been project managed by officer representatives from Monmouthshire County Council and Gloucestershire County Council. As the project develops towards a Stage 2 WeITAG, further project governance structures will be put in place as required e.g. the setting up of a Project Board.

### 6.3.2 *Programme Management and Reporting*

The Stage 1 WeITAG (Strategic Outline Case) study was commissioned jointly by Monmouthshire County Council and Gloucestershire County Council. They have both appointed a client lead to manage the production of the study (Paul Keeble, Monmouthshire County Council and Luisa Senft-Hayward, Gloucestershire County Council).

In line with WeITAG 2017 guidance an independent Review Group was set up to review the Stage 1 output (WeITAG Stage 1 (Strategic Outline Case) Report and Impacts Assessment Report).

### 6.3.3 *Communication and Stakeholder Management (Governance)*

Monmouthshire County Council and Gloucestershire County Council are taking the lead on the communication and stakeholder management aspects related to the Stage 1 study.

### 6.3.4 *Risk Management Strategy*

A Risk Management Strategy will be produced at WeITAG Stage 2 (Outline Business Case) for the short list of options appraised.

### 6.3.5 *Benefits Realisation and Monitoring and Evaluation Plan*

A Benefits Realisation and Monitoring and Evaluation Plan will be produced for a final preferred option at WeITAG Stage 3 (Final Business Case). This will outline the process of what monitoring will be undertaken to ensure that scheme objectives are achieved and benefits are realised. At that stage a record of lessons learnt will also be captured in order to share best practice.

## 6.4 Communication and Stakeholder Management

### 6.4.1 Consultation Undertaken

The following consultation activities have been undertaken to date:

- Stage 1 WelTAG (Strategic Outline Case) Workshop – A workshop was held to engage a range of stakeholders, to define the problems, objectives and potential solutions for the study area. The output of this workshop has been detailed within this report, with a workshop report included in Appendix B of the Impacts Assessment Report.
- Email and phone consultation with those stakeholders who could not attend the Stage 1 WelTAG (Strategic Outline Case) workshop. This included parties such as Highways England and Gloucestershire CC officers from Highway Development Control and Public Transport departments;
- Meeting with Sustrans (Gwyn Smith) to discuss active travel issues within the study area and potential active travel solutions for appraisal;
- Presentation to the Monmouthshire CC Strategic Transport Group (officers and members) to provide an outline of the Stage 1 study and its agreed outputs;
- Members briefing note produced to issue to Gloucestershire CC officers to provide an outline of the Stage 1 study and its agreed outputs.

### 6.4.2 Proposed Consultation

At WelTAG Stage 2 (Outline Business Case) it would be envisaged that further stakeholder consultation would be undertaken, including consultation with the public regarding the short-listed options.

## 6.5 Project Plan

Timescales for the progression of further stages of appraisal are yet to be defined and agreed. The next stage of feasibility would be to progress to WelTAG Stage 2 (Outline Business Case) and then Stage 3 (Final Business Case), as which point a final preferred option would be developed to a level where funding could be sort for scheme implementation.

## 6.6 Project Risks

A full project risk register will be developed at WelTAG stage 3 (Final Business Case) when a single preferred option is chosen.

Some of the general high level risks to delivering an intervention (not an exhaustive list) within the study area include:

- Funding availability or being withdrawn;
- Change in political governance (change of priorities);
- Public Inquiry;
- Reaching agreements within Network Rail.

## 6.7 Project Constraints

There follows a list of possible physical constraints (not exhaustive) that will have to be taken into account as part of ongoing options development work. These are taken from the existing information that is available on the area:

- Presence of a Railway line;
  - Presence of River Wye;
  - Topography and geology within the study area;
  - Urban environments;
  - Sedbury community;
  - Farmland.
- Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;
- Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);
- Woodland areas between railway and Thornwell area/The Bulwarks – Park Redding and Warren Slade;
  - The Bulwarks iron age hillfort;
  - Footpath on river side of railway with underpasses – Warren Slade and Park Redding;
  - Railway cutting within the Gloucestershire part of the study area;
  - Recreational path through Park Redding (from roundabout) – pedestrians only;
  - Offa's Dyke National Trail passes east/west through southern Sedbury;
  - Footpaths in northern Sedbury.
- Wales Coast Path (Option 2).

A Constraints Map included in Appendix G of the Impacts Assessment Report illustrates some of the constraints listed. Many of these are likely to have an impact on the deliverability of options. Information on how constraints will impact each option within the long list is detailed within the summary tables presented in Appendix C.

## 6.8 Deliverability

At this WeITAG Stage 1 (Strategic Outline Case), high level consideration of option deliverability has been undertaken as part of the appraisal process. Worksheet 10 in Appendix J of the Impacts Assessment Report provides the output of this work. This has been undertaken whilst taking into account some of the risk and constraints listed in sections 6.6 and 6.7.

Any large projects such as those proposed will always have major risks associated, all of which are not possible to quantify at the present time. Therefore, those items highlighted represent those known from the existing information that is available. Further feasibility work would be required to identify all risks before any option was implemented.

Table 6.1 provides a summary of the deliverability issues highlighted for all the options in the long list.

From Table 6.1 it can be seen that many of the options have a negative score for deliverability as nearly all come with issues and risks to implementation. The exceptions are the Active Travel Improvement options (15 & 16). These could be provided relatively simply (some risks for construction of an additional bridge adjacent to the Wye Bridge would exist). However, they are reliant on the implementation of other options such as the provision of a bypass in order to achieve maximum benefit.

Those schemes with particular deliverability issues include:

- **Chepstow Bypass – Land north of Tutshill including upgrading the A466 (Option 1)** - Carriageway gradients, due to the topography and the Flood Zone (flood plains) at this location, will make gradients challenging and likely require structures to raise any proposed carriageway levels to the eastern approach. The eastern half of the bypass alignment will pass to the north of Tutshill passing through farmland and introducing severance before meeting the A48 in the vicinity of the B4228 junction (travelling north to bypass Chepstow could also prove unpopular with some users who would see this as a longer route to the existing A48 through the town centre to access southwest Gloucestershire). The necessary upgrading of the A466 will be difficult particularly between High Beech Roundabout and Crossway Green Roundabout due to frontage development.
- **Chepstow Bypass – Beachley and Sedbury (Option 2)** - The topography of this route would see a sharp descent from the west towards the existing railway, where a bridge would need to satisfy Network Rail clearances (both vertical and lateral). The feasibility of this route would be highly dependent on overcoming these two issues (steep descent and rail clearances) prior to any meaningful progress. Once the route has crossed over the railway, a river crossing will be required. Flood plains to the east of the river will need to be considered during the feasibility stage. It is envisaged that an elevated carriageway would need to be included. The visual appearance of the river and flood plain crossing, although not part of the Wye Valley ANOB, is likely to be considerable. There is likely to be a degree of unacceptability due to the need to pass through a residential area (Thornwell) although this was planned in the knowledge that a future Chepstow Bypass may pass through the area and it is the only option that the public are generally aware of.
- **Chepstow Bypass - following the alignment of the railway (Option 3)** - This route would follow the existing Newport to Gloucester railway line. The proposal would be located in an elevated position above the line, if ground levels can be achieved, given the steep embankments in this area. A new retaining wall along the length of the railway would be very difficult to construct, especially as it is likely to be over a length in the region of 1800 metres. A flyover type structure may be the only solution, with supports that would straddle the existing railway. A route past or over the existing railway station will also be challenging for both design and construction. In addition, a historical Iron Age hill fort (the Bulwarks) will need to be avoided. It is unlikely that the public would be supportive of this option.
- **Chepstow Bypass – Beachley and Sedbury direct from M48 (Option 4)** - This route would require a junction off the existing M48 structure that links the motorway bridge over the River Wye and the Severn Bridge. This crosses over Beachley at a high level approximately 16 metres above the surrounding land. Construction of a new junction will



be difficult and would be very close to the existing one at Newhouse. It would require slip roads from the motorway leading down to a (possibly elevated) roundabout, which will require a considerable amount of land. The footprint of this option north from Beachley will be considerable and it is likely that it could only be considered along with the closure of Beachley MOD Barracks (likely to be prior to 2027) and redevelopment of the Beachley peninsula. The procurement process is likely to be lengthy, given that it will have to be acceptable to Highways England and possibly the Welsh Government due to its location close to their geographical boundary. It is, however, located entirely within Gloucestershire/ England.

- **Severn Crossing between Lydney and A38 / M5 ( Option 6)** - A very large scale structure will be required for this option, as the distance across the River Severn at this location is in the region of 1.5 kilometres (For a comparison, the distance between riverbanks will be similar to that of the M48 Severn Bridge). Timescales are likely to be very long and risks are likely to be large.
- **New Railway Stations (Option 8)** - Location for new station at Tutshill is constrained by tunnel located at 140 miles and 59 chain which is 328 meters in length. This would be best location for station to allow access from A48 and local settlements but would not be possible due to the tunnel. Location of new station at Newhouse is constrained by curvature of line at this location (no sufficient straight section to locate station). There is a level crossing within approximately 1 mile off the Newhouse location (located at 143 miles & 15 chains), which may mean that a station at this location would affect striking points. Feasibility of stopping services at two new stations near each other – unlikely to be timetable space for both. As Tutshill and Newhouse would be 1 mile from existing Chepstow Station (Chepstow station located at 141 miles and 33 chains). Unlikely to be benefit in having new stations so near to existing station at Chepstow, likely to take demand from Chepstow rather than generate new demand. To ensure demand for the new stations service frequency improvements and better links to Bristol services would be required.
- **Public Transport Integration (Option 9)** - Achieving integrating ticketing would be dependent on national all Wales developments, and at Chepstow cross border issues would require integration with English public transport services. This would be very difficult to achieve. Progress implementing all Wales ticketing has been very slow. Better connection with local bus services calling at Chepstow train station etc., may reduce local trips on A48 and may be achievable.
- **Public Transport Upgrades (Regional) (Option 10)** - A service leaving Lydney and calling at Chepstow to travel to Bristol or Cardiff may not provide any journey time benefits to persuade users out of their car. Likely to face delays into Bristol and Cardiff for bus service. Also unlikely to provide journey time saving as route travels along A48 from Gloucestershire into Chepstow and would be caught in congestion at this location unless numbers transferring to alternative modes was significant.
- **Park & Ride (Bus) / Park & Share (Option 13)** - A bus Park & Ride site at Lydney may be too far a journey to encourage modal shift for commuters using A48 to Cardiff / Bristol or Gloucestershire. Express Park & Ride services would be required from Tutshill location to give viable journey time and viable journey alternative to commuting by car. May still be too far from final destination (Bristol or Cardiff) to encourage modal shift from car to park and ride. Not likely to be volume of users from local community of Sedbury and Tutshill for journeys into Chepstow to make service viable. Further data would be required

on origin and destination of A48 users to establish where park & ride services could be located and what areas could be served. Park & Ride at Chepstow Race Course very unlikely to provide any relief to the A48 if it served either a local purpose into Chepstow or more strategic to Bristol or Cardiff. Volume of trips from this corridor to these areas unlikely to warrant a park & ride service.

- **Reducing the Need to Travel (Option 17)** - Likely to be a long term option, where reliant on future developments being designed to reduce the need to travel. As Chepstow is already a well formed town, may be lack of ability to influence how the town centre and suburbs are planned in terms of access to services to reduce need to travel. Reviewing all local school travel plans could be achievable and could help to reduce some of the more local journeys by car undertaken using the A48 corridor.
- **Containment of Settlements (Option 18)** - This option is dependent on the development of local services within the communities of Tutshill and Sedbury. If not partly funded then could be reliant on private suppliers of services to contain settlements which may be difficult to achieve unless service providers can remain profitable. Likely to be public opposition from residents who see Chepstow as their local service centre.
- **Congestion Charge on A48 (Option 19)** - Extremely difficult option to implement with large public opposition. Unlikely to adequately address the issue of congestion along corridor and could cause future economic issues for the area. Congestion charging schemes are better suited to urban environments with high public transport frequencies and availability.
- **Do Minimum (Option 20)** - If no further improvements are made to the A48 corridor then congestion levels are likely to rise (particularly with the removal of the Severn bridge tolls in December 2018). This could lead to the risks of decreasing air quality, reduced journey times and a lack of ability to develop and achieve targets set within the Local Development Plans for Monmouthshire, Gloucestershire and the Forest of Dean. Economic growth could be slowed.

Table 6.1 Option Deliverability

Option No.	Option	Feasibility	Acceptability	Timescales	Risks	Comments
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	--	-	--	---	The River Wye channel at this location will require a structure approximately 170 metres in length. This could be achieved by either a large single span structure (e.g. bow-string arch), or more likely, a multi-span structure, as existing river crossings take this form (e.g. the A48 Chepstow Road Bridge is a 5 span structure). Carriageway gradients, due to the topography and the Flood Zone (flood plains) at this location, will make gradients challenging and likely require structures to raise any proposed carriageway levels to the eastern approach. This would be estimated to be in the region of 150 metres in length of supported carriageway. The eastern half of the bypass alignment will pass to the north of Tutshill passing through farmland and introducing severance before meeting the A48 in the vicinity of the B4228 junction. The necessary upgrading of the A466 will be difficult particularly between High Beech Roundabout and Crossway Green Roundabout due to frontage development. It is likely that such an option will result in a degree of unacceptability due to its location within the Wye Valley AONB, its impact on farmland, and the A466 corridor. In addition, it is likely that procurement would be lengthy given the cross county and country interests. Any large project such as this will always have major risks associated with it, which are not possible to quantify at the present time. Scheme would pass near to Piercefield Park which has Grade 1 status.
2	Chepstow Bypass – Beachley and Sedbury	--	+	--	---	A structure at this location will need to cross both the River Wye and the Newport to Gloucester Railway Line, a distance of approximately 200 metres. This option will suit a multi-span structure, one to cross the railway and a three/four span bridge across the river channel. The topography of this route would see a sharp descent from the west towards the existing railway, where a bridge would need to satisfy Network Rail clearances (both vertical and lateral). The feasibility of this route would be highly dependent on overcoming these two issues (steep descent and rail clearances) prior to any meaningful progress. Once the route has crossed over the railway, a river crossing will be required. Flood plains to the east of the river will need to be considered during the feasibility stage. It is envisaged that an elevated carriageway would need to be included. The length for this could be in the region of 200 metres. The visual appearance of the river and flood plain crossing, although not part of the Wye Valley ANOB, is likely to be considerable. There is likely to be a degree of unacceptability due to the need to pass through a residential area (Thornwell) although this was planned in the knowledge that a future Chepstow Bypass may pass through the area and it is the only option that the public are generally aware

Option No.	Option	Feasibility	Acceptability	Timescales	Risks	Comments
						of. Procurement of this option may well be lengthy given the cross county and cross country interests. Any large project such as this will have major risks associated with it, which are not possible to quantify at the present time.
3	New highway Route following line of Railway	---	---	---	---	This route would follow the existing Newport to Gloucester railway line. The proposal would be located in an elevated position above the line, if ground levels can be achieved, given the steep embankments in this area. A new retaining wall along the length of the railway would be very difficult to construct, especially as it is likely to be over a length in the region of 1800 metres. A flyover type structure may be the only solution, with supports that would straddle the existing railway. A route past or over the existing railway station will also be challenging for both design and construction. In addition, a historical Iron Age hill fort (the Bulwarks) will need to be avoided. Given the necessary location of this option, it is extremely unlikely that it would be acceptable despite it partially following an alignment that has been known about for many years. Procurement is likely to be very lengthy even though it is located entirely within Monmouthshire/Wales. The scheme would need the consent of Network Rail which would be very unlikely to be granted on safety grounds of building and operating a highway over an operational railway line. Any large project such as this will have major risks associated with it, which are not possible to quantify at the present time.
4	Bypass – Beachley & Sedbury direct from M48	--	--	---	---	This route would require a junction off the existing M48 structure that links the motorway bridge over the River Wye and the Severn Bridge. This crosses over Beachley at a high level approximately 16 metres above the surrounding land. Construction of a new junction will be difficult and would be very close to the existing one at Newhouse. It would require slip roads from the motorway leading down to a (possibly elevated ) roundabout, which will require a considerable amount of land. The footprint of this option north from Beachley will be considerable and it is likely that it could only be considered along with the closure of Beachley MOD Barracks (likely to be prior to 2027) and redevelopment of the Beachley peninsula. The procurement process is likely to be lengthy, given that it will have to be acceptable to Highways England and possibly the Welsh Government due to its location close to their geographical boundary. It is, however, located entirely within Gloucestershire/ England. Any large project such as this will have major risks associated with it, which are not possible to quantify at the present time.
5	New M48 Junction	+	+	+	--	This option will require a new junction off the existing M48 and onto the B4245 at Hayes Gate/St. Pierre Golf Course. Land acquisition to provide this option could be the source of objections.

Option No.	Option	Feasibility	Acceptability	Timescales	Risks	Comments
	(Possible Location Hayes Gate/St. Pierre Golf Course)					However, with the proposal being for east facing slip roads only, this would avoid land take from Hayes Gate Farm and St. Pierre Golf Club. Acceptable design standards may be difficult to achieve given the likely need for a compact layout. Given its location close to the Newhouse M48 junction, this option may not be acceptable by the Welsh Government. In terms of timescales, this will largely depend on the Welsh Government's acceptance (or not) of this option. However, if there are proposed developments in SE Monmouthshire as a result of the abolition of Severn Bridge tolls, there could be calls for such an option to improve access to the motorway network although a more westerly location is likely to be more beneficial. In theory, timescales could be relatively short due to the size of the scheme. There may well be some risks associated with this option, which are not possible to quantify at the present time. The location for a new M48 junction would be investigated and decided during future appraisal stages.
6	Severn Crossing between Lydney and A38/M5	-	--	---	---	A very large scale structure will be required for this option, as the distance across the River Severn at this location is in the region of 1.5 kilometres. This option would suit a suspension bridge or a multi-span structure, with headroom clearances for navigable vessels to pass beneath. For a comparison, the distance between riverbanks will be similar to that of the M48 Severn Bridge, which has a structural form of a suspension bridge (the M4 Second Severn Crossing has a length of approximately 4.5 kilometres). The approach from the A38/M5 direction will cross farmland. In terms of feasibility, although it would be a major project, the principles would be the same as many others of a similar type and will therefore be generally well known. The support for such a major proposal is likely to be mixed. Timescales are likely to be very long and risks are likely to be large despite the 'conventional' nature of the proposal.
7	A48 and A466 Upgrades	+	--	+	-	A48 and A466 upgrades will not require any large scale structures. Carriageway improvements by way of road widening or dual carriageways appear possible without excessive construction work/costs. However, there will be a social impact due to highway works being within residential areas. Buildability is likely to be difficult for the same reason although upgrading the A466 is likely to be more straightforward as some of the highway corridor is already wide. On-line improvements of the A48 were proposed in the 1980s as a way of improving the A48 through Chepstow and were the subject of a public consultation exercise. It is likely that now, just as then, gaining acceptability of this option given the air quality issues that exist within this corridor, will be difficult. Timescales may not be too great although there may well be considerable risks due to the urban location that this option passes through. However, these are unable to be quantified at the present time.

Option No.	Option	Feasibility	Acceptability	Timescales	Risks	Comments
8	New Railway Stations	---	+	---	--	<ul style="list-style-type: none"> <li>• Location for new station at Tutshill is constrained by tunnel located at 140 miles and 59 chain which is 328 meters in length. This would be best location for station to allow access from A48 and local settlements but would not be possible due to tunnel. New station would need to be north of the tunnel however, within 2 miles of the tunnel is a level crossing (need to ensure new station would not be located where could affect striking points of the level crossing). Locating station north of the tunnel would mean the station would be further from settlements of Sedbury and Tutshill to capture local population walking to station. North of the tunnel the railway line is also lower than the A48, causing difficulty for access to station, which would be needed to capture strategic journeys. Permanent way works could be required.</li> <li>• Location of new station at Newhouse is constrained by curvature of line at this location (no sufficient straight section to locate station). There is a level crossing within approximately 1 mile of Newhouse location (located at 143 miles &amp; 15 chains), which may mean that a station at this location would affect striking points.</li> <li>• Feasibility of stopping services at two new stations near each other – unlikely to be timetable space for both. As Tutshill and Newhouse would be 1 mile from existing Chepstow Station (Chepstow station located at 141 miles and 33 chains). Unlikely to be benefit in having new stations so near to existing station at Chepstow, likely to take demand from Chepstow rather than generate new demand.</li> <li>• Frequency of service in peaks would be needed in order to provide a viable alternative to car travel for access to Cardiff / Newport and Bristol. This may require additional investment.</li> <li>• Service tie in for access to Bristol with Cross Country and Severn Tunnel junction services. Without seamless interchange at STJ commuters will not use to access to Bristol from Southwest Gloucestershire area.</li> </ul>
9	Public Transport Integration	--	++	---	--	<ul style="list-style-type: none"> <li>• Achieving integrating ticketing would be dependent on national all Wales developments, and at Chepstow cross border issues would require integration with English public transport services. This would be very difficult to achieve. Progress implementing all wales ticketing has been very slow.</li> <li>• Better connection with local bus services calling at Chepstow train station etc., may reduce local trips on A48 and may be achievable (evidence in the ‘Chepstow Rail Corridor Option Development &amp; Appraisal, Final WelTAG 1+ Report, April 2011’ from passenger survey data showed origin data indicating a local catchment for Chepstow station, which could benefit from</li> </ul>

Option No.	Option	Feasibility	Acceptability	Timescales	Risks	Comments
						good local bus connections from surrounding suburb areas including Tutshill and Sedbury – reducing journeys using A48 into Chepstow)
10	Public Transport Upgrades (Regional)	+	+	--	--	<ul style="list-style-type: none"> <li>• A service leaving Lydney and calling at Chepstow to travel to Bristol or Cardiff may not provide any JT benefits to persuade users out of their car. Likely to face delays into Bristol and Cardiff for bus service. Also unlikely to provide JT saving as travels along A48 from Gloucestershire into Chepstow and would be caught in congestion at this location unless numbers transferring to alternative modes was significant.</li> <li>- Potential for high running costs to service, particularly to achieve the required frequency to give a viable alternative to the car.</li> <li>- Risk of low user numbers if the service did not provide a consistent and good journey time benefit to transferring from car.</li> </ul>
11	Public Transport Upgrades (Local)	+	++	+	-	<ul style="list-style-type: none"> <li>- Potential to improve local bus services, particularly for those communities of Tutshill and Sedbury to decrease the number of single car journeys made into and out of Chepstow using the A48. Services providing access to train station and to local schools and other key trip generators during morning and evening peaks could assist in reducing congestion on A48.</li> <li>- Further work would be required to establish which services to improve and the specific origin and destination of services to provide most traffic relief to the A48.</li> <li>- Could be high operational costs to services if number of passengers are not achieved to make services viable.</li> </ul>
12	Improved Rail Services to Bristol	-	+++	--	--	<p>Any increase in services calling at Lydney, Chepstow and then STJ railway stations could provide the required frequency to have regular connections at STJ to direct Bristol services.</p> <ul style="list-style-type: none"> <li>• A previous report 'Chepstow Rail Corridor Option Development &amp; Appraisal, Final WelTAG 1+ Report, April 2011' looked at frequency enhancements. It concludes that it is relatively simple to increase the service to hourly in the off peak gaps as path's are available at XX.12 from Cardiff and XX.45 from Cheltenham throughout the off peak period. There would be no direct infrastructure requirements associated with this option, the estimated operational costs for an additional unit was £2.5m per annum.</li> <li>• The report outlines that an additional trains per hour to facilitate a half-hourly service (either an additional Cardiff to Chepstow service or extension of Ebbw Vale – Newport Services to Chepstow) is particularly difficult if just the main lines are utilised. An additional service would need to use relief lines and use of platform 1 at Newport (relief line upgrades required). The option also requires a turn back facility at Chepstow. The report estimates the turnaround at</li> </ul>

Option No.	Option	Feasibility	Acceptability	Timescales	Risks	Comments
						<p>£7.1m. An operational cost of £5.3 million per annum is also estimated by the report. Only taking a service to Chepstow would not give the required benefits to the A48 – services would need to go as far as Lydney. Feasibility of whether a service could go as far as Lydney would need to be investigated at further stages of appraisal (WelTAG stage 2).</p> <ul style="list-style-type: none"> <li>Any assessment of improving frequencies would need to consider freight movements on the line.</li> <li>The 2011 report outlines that although there are crossovers at both Chepstow and Lydney it is not possible to turn round trains at those points except in an emergency when staff have to be provided to supervise the movements. However, there is potential to upgrade the infrastructure so that turn rounds can take place on a regular basis at these locations.</li> </ul> <p>The new wales and border franchise due to operate from oct 2018 includes a commitment for a hourly service between Cheltenham and Chepstow. Direct Train to Bristol (via STJ)</p> <ul style="list-style-type: none"> <li>Would require infrastructure at STJ to allow turnaround of the service.</li> <li>Would need timetable analysis to see if the service could fit in-between existing services on Chepstow line and within the operational arrangements of STJ also to establish whether capacity on the mainline and at Bristol temple meads. Tunnel may not have capacity for any extra services.</li> <li>If service travelling just between STJ and Lydney in a loop would need turn back infrastructure at Lydney.</li> </ul>
13	Park & Ride/Share	--	-	-	--	<ul style="list-style-type: none"> <li>A Park and Ride at Lydney by bus may be too far a journey to encourage modal shift for commuters using A48 to Cardiff / Bristol or Gloucestershire.</li> <li>Location for a park and ride / share site in Tutshill could be field to East of Beachley Road (access from A48 to catch strategic journeys). However, this likely to be greenbelt so could be difficult to develop – near residential area so may face local opposition.</li> <li>Express Park and Ride services would be required from Tutshill location to give viable journey time and viable journey alternative to commuting by car. May still be too far from final destination (of Bristol or Cardiff) to encourage modal shift from car to park and ride. Not likely to be volume of users from local community of Sedbury and Tutshill for journeys into Chepstow to make service viable. Further data would be required on origin and destination of A48 users to establish where park and ride services could be located and what areas could be served.</li> <li>Park and Ride at Chepstow race course very unlikely to provide any relief to the A48 if it served</li> </ul>



Option No.	Option	Feasibility	Acceptability	Timescales	Risks	Comments
						either a local purpose into Chepstow or more strategic to Bristol or Cardiff. Volume of trips from this corridor to these areas unlikely to warrant a park and ride service.
14	Park & Ride (Rail)	-	+	-	-	<ul style="list-style-type: none"> <li>• Potential to expand park and ride facilities at Lydney railway station – however, would probably need to increase existing rail services to make this a viable option for commuting to Cardiff or Bristol.(approx. hourly service at present in morning peak from Lydney to Cardiff with about 1 hour JT – links to Bristol more sporadic with some services requiring changes at STJ others at Newport). Demand at the station would need to be further investigated to establish viability of expansion.</li> <li>- Land availability at Chepstow could affect implementation. To maximise benefit of investment require increase in service frequency or direct service to Bristol, along with station improvements at Chepstow, Lydney (footbridge) and STJ. The New Wales and Border Franchise due to operate from October 2015 includes a commitment to make improvements to Chepstow Station.</li> <li>- Without service frequency enhancement may not result in modal shift and traffic relief on A48.</li> </ul>
15	Active Travel Upgrades	+	++	+	-	<ul style="list-style-type: none"> <li>- Upgrades to active travel link such as an additional structure attached to the A48 Wye Bridge could be feasible and would give greatly improved links between Chepstow town centre and the communities of Tutshill, Sedbury, and Beachley.</li> <li>- Not likely to provide a viable mode for more strategic journeys that currently utilising the A48 e.g. access to M48 for Cardiff and Bristol for communities within the area of Gloucestershire east of the River Wye and the Forest of Dean unless proposals were combined with an expansion of the National Cycle Network into these areas. There are currently no sections of the NCN in these parts of Gloucestershire and the Forest of Dean.</li> </ul>
16	Active Travel Additions	+	++	+	-	<ul style="list-style-type: none"> <li>- This option is reliant on the implementation of one of the bypass options for the A48 to be downgraded and improvements made to increase road space for active travel. It would involve reallocating road space to pedestrians and cyclists.</li> </ul>
17	Reducing the need to travel	--	+	--	-	<ul style="list-style-type: none"> <li>- Likely to be a long term option, where reliant on future developments being designed to reduce the need to travel. As Chepstow is already a well formed town, may be lack of ability to influence how the town centre and suburbs are planned in terms of access to services to reduce need to travel.</li> <li>- Reviewing all local school travel plans could be achievable and could help to reduce some of the more local journeys by car undertaken using the A48 corridor.</li> </ul>
18	Containment of Settlements	--	-	---	-	<ul style="list-style-type: none"> <li>- This option is dependent on the development of local services within the communities of Tutshill and Sedbury. If not partly funded then could be reliant on private suppliers of services to</li> </ul>

Option No.	Option	Feasibility	Acceptability	Timescales	Risks	Comments
						<p>contain settlements which may be difficult to achieve unless service providers can remain profitable.</p> <ul style="list-style-type: none"> <li>- Would take time to develop required services to contain the settlements.</li> <li>- Likely to be public opposition from residents who see Chepstow as their local service centre.</li> </ul>
19	Congestion Charge on A48	-	---	--	--	<ul style="list-style-type: none"> <li>- Extremely difficult option to implement with large public opposition.</li> <li>- Unlikely to raise enough revenue to fund operational costs of the scheme.</li> <li>- Unlikely to adequately address the issue of congestion along corridor and could cause future economic issues for the area.</li> <li>- Congestion charging schemes are better suited to urban environments with high public transport frequencies and availability.</li> </ul>
20	Do Minimum	-	--	-	-	<p>If no further improvements are made to the A48 corridor then congestion levels are likely to rise (particularly with the removal of the sever bridge tolls later in 2018). This could lead to the risks of decreasing air quality, reduced journey times and a lack of ability to develop and achieve targets set within the Local Development Plans for Monmouthshire, Gloucestershire and the Forest of Dean. Economic growth could be slowed.</p>

## 6.9 Equality Impact Assessment

An Equality Impact Assessment will be undertaken on the final preferred option.

## 6.10 Summary of the Management Case

The management case has presented an overview of the governance and project management that is in place to implement any potential improvements within Chepstow. A review of the activities completed so far in scheme development have been provided along with comment on the consultation activities completed and those planned for the future. General risks for implementing any major transport intervention within Chepstow have been detailed and scheme specific deliverability issues (as known at this present time) have been highlighted.

# 7. Conclusion and Recommendations

## 7.1 Summary and Conclusion

This WeITAG Stage 1 (Strategic Outline Case) has undertaken appraisal of a large number of options to address problems defined within the study area of the A48 corridor within Chepstow. Consideration has been given to the wider issues and impacts for the A48 corridor from Lydney in the east to Chepstow in the west.

Chepstow and the wider area are currently facing a number of factors of change:

- The removal of Severn Bridge Tolls in December 2018 and increases in house prices within the Bristol region placing potential pressure on the local housing market;
- The production of new Local Development Plans (for both Monmouthshire CC and Forest of Dean District Council);
- Pressure for development within south east Monmouthshire and the Lydney area within the Forest of Dean,
- Implementation of the Cardiff City Region Regeneration plan and the associated transport aspirations including implementation of the Metro.

These have been discussed and a case for change with regards to a future intervention within Chepstow outlined (See Chapter 2: Strategic Case).

Key problems defined for the study area include:

- Congestion – The A48 has high levels of traffic congestion which appears to be worse for vehicles travelling westbound in the morning peak, and eastbound in the evening peak, illustrating the directional demand for vehicles commuting out of the area to cities such as Bristol, Newport and Cardiff (and the wider regional area). Congestion is leading to traffic queuing (on both the Chepstow side of the A48 and Gloucestershire side) and journey time delays;
- Air Quality – the A48 on Hardwick Hill through Chepstow is located within a designated Air Quality Management Area, with queuing traffic along with A48 worsening local air quality;
- Poor Public Transport Connections to Bristol – There is no direct train service from Lydney in the Forest of Dean through Chepstow to Bristol, with users needing to change at Severn Tunnel Junction (or Newport) for connecting services. There can be long wait times between connecting services lengthening the overall journey time for travel by train. In addition there are very few bus services to use as an alternative to private vehicle if traveling from Southwest Gloucestershire along the A48 through Chepstow and beyond.
- Network Resilience – The A48 corridor through Chepstow is the only viable route for communities within the Forest of Dean to access the Bristol and south Wales areas. This forces a large volume of traffic through a pinch point of the Wye Bridge at Chepstow and along Hardwick hill. The area has a limited number of River Wye crossings with the only others in the region in addition to the crossing at Chepstow being at the old Wye Bridge (to Tutshill), Bigsweir Bridge, Brockweir and the Wye Bridge in Monmouth.

- Active Travel Links – There is limited opportunity for Active Travel within the study area mainly due to the local topography. Improvements to Active Travel links between the communities of Sedbury and Tutshill within the centre of Chepstow and to local interchanges could be made.
- Development Demand – Existing and future development proposals along the A48 corridor are becoming constrained by the current highway network and its associated problems. Improvements to the transport network within the area could unlock land for future development and improve access to existing development.

Options have been developed through a process of consultation with officers and wider stakeholder organisations to address the identified problems.

The strategic fit at a national, regional and local level of each of the options has been appraised, along with assessment of each options ability to address the defined Objectives (see Chapter 2: Strategic Case).

An initial appraisal of economic, environmental and social impacts of each option has also been undertaken (see Chapter 3: Transport Case).

Deliverability for each option has been assessed, with comment provided on each options technical feasibility, acceptability, timescales and risk (see Chapter 6: Management Case).

## 7.2 Recommendations

From initial high level appraisal undertaken there are a number of options that are viewed as less favourable (either due to deliverability issues or inability to meet national, regional or local policy objectives and / or scheme objectives). Some may also do little to address the problems highlighted at the stakeholder workshop. These less favourable options are as follows:

- **Option 1 - Chepstow Bypass – land north of Tutshill including upgrading the A466** - The location of this option may not be attractive to all A48 through traffic, as it will be a longer route to/from the M48, which will limit the journey time savings and other associated benefits. It is likely that such an option will result in a degree of unacceptability due to its location within the Wye Valley AONB, its impact on farmland, and the A466 corridor. This would be a very high capital cost option.
- **Option 3 - Chepstow Bypass – following the alignment of the railway** - This option will provide a direct link between the A48 in eastern Chepstow and the M48. However, it will not address existing congestion issues at Wye Bridge as it would reconnect into the highway near to the location of the existing Tesco site in Chepstow Town Centre. The proposal would be located in an elevated position above the line, if ground levels can be achieved, given the steep embankments in this area. A new retaining wall along the length of the railway would be very difficult to construct. The scheme would need the consent of Network Rail which would be very unlikely to be granted on safety grounds of building and operating a highway over an operational railway line. This would be a very high capital cost option.
- **Option 4 - Chepstow Bypass – Beachley and Sedbury direct from M48** - The location of the M48 junction is not best placed for flexibility in terms of the motorway corridor and attractiveness to all users although it could benefit the redevelopment of the Beachley area. This route would require a junction off the existing M48 structure that links the motorway bridge over the River Wye and the Severn Bridge which would be difficult to construct (the footprint

of this option north from Beachley would be considerable). This would be a very high capital cost option.

- **Option 6 - Severn Crossing between Lydney and A38 / M5** - Other than providing an additional crossing of the River Severn, the wider benefits of this option are largely unknown and could be minimal in terms of addressing the problems along the A48 in the study area. A very large scale structure will be required for this option and therefore this would be a very high cost option.
- **Option 7 - A48 and A466 Upgrades** - This option will continue to carry existing traffic flows along the existing A48 with marginal gains in economic benefits and potentially many non-monetised disbenefits. There will be a social impact due to highway works being within residential areas. Buildability is likely to be difficult for the same reason. On-line improvements of the A48 were proposed in the 1980s as a way of improving the A48 through Chepstow and were the subject of a public consultation exercise. It is likely that now, just as then, gaining acceptability of this option given the air quality issues that exist within this corridor, will be difficult.
- **Option 8 - New Railway Stations** - May not generate journey time savings if no increase in line frequency, or increased connection to Bristol services. More train stops leads to journey time increases. Catchments for the potential new station users could be limited due to proximity to existing Chepstow station. Technical feasibility of finding appropriate places on the existing line could be limited at both Tutshill (due to an existing tunnel) and Newhouse (due to curvature of the line and possible distance from striking points for a nearby level crossing).
- **Option 9 - Public Transport Integration** – Achieving integrating ticketing would be dependent on national all Wales developments, and at Chepstow cross border issues would require integration with English public transport services (however, this report is supportive of a national wide integrated ticketing scheme). Better connection with local bus services calling at Chepstow train station, central bus station etc. is supported (see section in remainder of chapter in relation to 'Quick Wins').
- **Option 10 - Public Transport Upgrades (Regional Services)** – The potential catchment area, population density and journey time of services, along with congestion at end destinations to services is likely to impact on any benefits of this option. Potential for high running costs to services, particularly to achieve the required frequency to give a viable alternative to the car. Risk of low user numbers if the service did not provide a consistent and good journey time benefit to transferring from car.
- **Option 13 - Park & Ride (Bus) / Park & Share** – This option is unlikely to generate significant journey time benefits, or create a substantial mode shift. A Park and Ride at Lydney by bus may be too far a journey to encourage modal shift for commuters using A48 to Cardiff / Bristol or Gloucestershire. Finding an appropriate location for Park and Ride / Park and Share site may be problematic in the Tutshill / Sedbury area. Park and Ride at Chepstow racecourse is unlikely to provide any relief to the A48 if it served either a local purpose into Chepstow or more strategic to Bristol or Cardiff.
- **Option 18 - Containment of Settlements** - This option is dependent on the development of local services within the communities of Tutshill and Sedbury. If not partly funded then could be reliant on private suppliers of services to contain settlements which may be difficult to achieve unless service providers can remain profitable. Unlikely to provide the degree of traffic relief required to address problems along A48 corridor.

- **Option 19 - Congestion charge on A48** - Extremely difficult option to implement with large public opposition likely. The option is unlikely to adequately address the issue of congestion along the A48 corridor and could cause future economic issues for the area. Congestion charging schemes are better suited to urban environments with high public transport frequencies and availability of transport options.

Options that are seen as more favourable from the initial appraisal undertaken and therefore are recommended for further appraisal at WeITAG Stage 2 are as follows:

- **Option 2 - Chepstow By pass – Beachley and Sedbury** - This option will provide a direct link between the A48 to the east of Chepstow and the M48. Its ability to attract Tutshill traffic is seen as important in terms of benefits to local roads. Linking into an existing M48 junction that directly serves Chepstow gives flexibility in terms of the motorway corridor and will maximise its use and associated benefits. This option would require a structure to span the river Wye and have potential environmental and other consequences that could cause risk to delivery. These would need to be investigated further as part of a Stage 2 WeITAG (Outline Business Case).
- **Option 12 & 14 - Improved Rail services to Bristol and Park & Ride Rail** - These two options have been packaged together to provide maximum benefit. A current key issue is a lack of direct train services for the communities of Lydney and the Forest of Dean to Bristol. Improved rail service frequencies to Bristol could help to achieve modal shift along with A48 corridor, and thus address some of the issues of congestion. Feasibility of increased rail frequencies during the peak periods would need to be investigated further at WeITAG Stage 2. Improvements to park and ride and interchange provision at Lydney, Chepstow and Severn Tunnel Junction (interchange station for services to Bristol from Lydney and Chepstow) should be undertaken to encourage and facilitate increased usage.
- **Option 5 - New M48 Junction** - The option for a new M48 junction (possible location includes Hayes Gate / St. Pierre Golf Course) may provide some congestion relief at High Beech roundabout which may make it easier for westbound A48 traffic to enter onto the roundabout and help reduce some queuing. However, it will not specifically address the issues of congestion along Hardwick Hill, A48 Wye Bridge or into Gloucestershire. It may have benefit in providing improved access to future potential development within the area and therefore could be considered to have benefit if implemented in tandem with other options as part of a phased approach. The location of any new M48 junction would have to be carefully considered in terms of its need at the next stage of appraisal.
- **Option 20 - Do Minimum** - Taken forward for baseline assessment against other recommended options.

In addition to these more long-term options, a number of potential 'quick win' options are recommended for further investigation. These could have a shorter implementation periods and beneficial impacts if progressed individually or as a package of measures. Option packing is recommended to be investigated as part of further appraisal work at WeITAG Stage 2 (Outline Business Case)). Option 16 would be reliant on a by-pass option being implemented to be progressed. The 'quick wins' are as follows:

- **Option 9 - Public Transport Integration** - Better connection with local bus services calling at Chepstow train station and bus station to connect with wider strategic public transport services may reduce local trips on A48. Support should also be provided to an all Wales

Integrated Ticketing initiative (with a possible cross border solution for trips in the A48 corridor area).

- **Option 11 - Improvement in local bus services network to reduce local trips** - Potential to improve local bus services, particularly for those communities of Tutshill and Sedbury to decrease the number of single car journeys made into and out of Chepstow using the A48. Services providing access to train station and to local schools and other key trip generators during morning and evening peaks could assist in reducing congestion on A48. Investigation of other A48 bus route corridor improvements for local services including whether viability exists for options such as informal park and ride (e.g. using bus stops and any existing parking provision along A48 corridor).
- **Options 15 & 16 - Active Travel Upgrades and Additions** – Upgrades and additions to the Active Travel network could have the potential to remove some local journeys from the A48 corridor, particularly those between the communities of Tutshill and Sedbury into Chepstow town centre. Provision of an Active Travel bridge across the Wye or changes to give more road space to Active Travel modes could facilitate modal shift for local journeys (however, some of the additions would be reliant on a by-pass option to enable more existing road space to be allocated to Active Travel modes). Improving Active Travel links to key interchanges would encourage modal shift from private car to Walking / Cycling and public transport. This could have health benefits for those who switch to walking and cycling.
- **Option 17 - Reducing the need to travel** – Reviewing all local school travel plans and encouraging other key trip generators within the area to adopt Travel Plans could be achievable. This may assist in reducing some of the more local journeys by car undertaken using the A48 corridor. Future development could also be encouraged to adopt sustainable travel principles and be located in areas that reduce the need for travel by private car alone. Adoption of new technologies to be considered as part of this option.

### 7.3 Review Group

In line with WeITAG 2017 guidance an independent Review Group has overseen and reviewed the appraisal output. The review group consisted of the following:

- Roger Hoggins (chair)- MCC Head of Operations;
- Matthew Lewis - MCC Green Infrastructure and Countryside Manager;
- Gwyn Smith – Sustrans;
- Alison Thomas - Welsh Government;
- Gill Edge- Senior Planning Policy Officer;
- Joe Skidmore - MCC Communities and Partnership Development Lead;
- Matthew Gatehouse - MCC Head of Policy and Governance;
- Hazel Clatworthy - MCC Sustainability Policy Officer;
- Luisa Senft-Hayward - Gloucestershire CC;
- Paul Keeble - MCC Group Engineer – Highway and Flood Management;
- Christian Schmidt – MCC Transport Planning & Policy Officer.



This included independent review group members from the Cardiff Capital Regional Transport Authority and Welsh Government.

The Review Group meet on 22nd of October 2018 and broadly agreed with the recommendations made and the direction of the study, with the caveat that future further consideration may be needed into some of the detail included in the study (as part of WeITAG Stage 2). The exception was Sustrans who opposed inclusion of Option 2 (bypass option) as a short listed option. A copy of the comments provided by the Review Group and how these comments have been addressed within the WeITAG Stage 1 final report are included in Appendix L of the Impacts Assessment Report.

## 7.4 Further Work

In order to complete the WeITAG Stage 2 (Outline Business Case) on the recommended short list of options detailed in Section 7.2, the following additional data / tasks may need to be undertaken. This data / task list is not exhaustive and further information or tasks may need to be undertaken as appraisal work develops. This will further improve the evidence base:

- **Traffic / multimodal model production** – The production of a multimodal traffic model for the study area would feed into all other future work stages. It would require the collection of primary data such as passenger surveys, origin and destination data and other traffic data collection. It would also require data input in terms of future and proposed developments in the area and changes such as the removal of the Severn Bridge toll so that future changes in traffic and transport demand is considered. The aim would be to produce a model where the outcomes of the short list of options can be tested as individual options and as phased packages, looking at solutions from a cross border perspective. The output of the model would feed into the required highway route study, rail corridor route study and Value for Money assessment that would be required for a WeITAG Stage 2 (Outline Business Case) appraisal.
- **Highway route study** – A route study would need to be undertaken to define the preferred alignment for any proposed new bypass. This would need to include consideration of aspects such as environmental issues (an Environmental Impacts Assessment would need to be completed), ecological issues (production of preliminary investigation reports), consideration of flood and other water issues (a Flood Consequences Assessment would need to be completed along with any other related statutory procedures), consideration of the impact on air quality and noise (including the possible undertaking of baseline surveys) as well as consideration of geological issues through a Preliminary Sources Study. Traffic survey data would also need to be collected to inform the highway route study.
- **Rail corridor route study** – This would consider both the timetabling implications and physical infrastructure and rolling stock requirements for an increase in line frequency for the Chepstow line to feed into Bristol bound services at Severn Tunnel Junction (and vice versa for return journeys). It would also include consideration of Park & Ride / interchange improvements at Lydney, Chepstow and Severn Tunnel Junction.
- **Local public transport Improvements** – Further work would need to be undertaken with local authorities and bus service providers to understand how services can be strengthened. This would be within both the locality from Sedbury and Tutshill into Chepstow town centre and also services calling at other key transport nodes such as the railway station and main bus station from surrounding areas. Operating costs and fleet requirements for these services

would need to be understood in order to undertake a more detailed appraisal at WeITAG Stage 2 (Outline Business Case)

- **Development of Active Travel options** – Further design and investigative work would be recommended into the feasibility of the options to make upgrades and Active Travel amendments (including the addition of an Active Travel bridge adjacent to the A48 Wye Bridge and possible route improvements and new links to interchanges).
- **Value for Money assessment**- For each of the recommended short-list options a Value for Money assessment would be required through the production of a Benefit Cost Ratio (BCR). To produce a BCR data would need to be collected in order to add a quantitative value to benefits and understand the full cost to each option. Data required may include:
  - Estimated capital costs and any ongoing costs;
  - The collection of survey data to understand the Active Travel movements in the study area;
  - Collection of accident data and environmental data such as air quality and noise levels;
  - Traffic modelling data to provide information on any journey time benefits for all user groups including public transport users
- **Development of the Five Cases** – The Five Cases for each of the short-list of recommended options would need to be developed further. The Strategic Case would need to be checked and updated for each option and further information provided in the Transport, Financial, Commercial and Management case. This may require investigating aspects such as procurement methods for certain options along with governance requirements and project management procedures for implementing options.
- **Further consultation** – It is recommended that during the WeITAG Stage 2 (Outline Business Case) appraisal process further stakeholder and public engagement is held to gather views and more detailed information on each of the recommended short listed options. Input may also be required in looking at the appraisal results for the short listed options to gain agreement on a final preferred option for implementation.
- **Consideration of the future statutory procedures** - It would be beneficial to give thought to the statutory procedures that may need to be completed for any of the short listed options. Early preparatory works for these procedures could therefore be undertaken to avoid future delay in the project programme.
- **Consideration of future monitoring** – Although a monitoring plan cannot be produced in detail until WeITAG Stage 3 (Full Business Case), it would be beneficial to give some consideration to the types of data and areas that will need monitoring. Additionally, this should include the data that would require collection for each of the short listed options. This can then be detailed in the Stage 2 Management Case.

Further work should also include the activity of continued lobbying by officers and members of both Monmouthshire County Council and Gloucestershire County Council to ensure that a number of key issues are progressed. These include:

- Continuing support for the wider introduction of integrated ticketing across Wales (and cross-border solutions);
- Continued support for improvements at Severn Tunnel Junction Interchange (along with Chepstow and Lydney Stations);

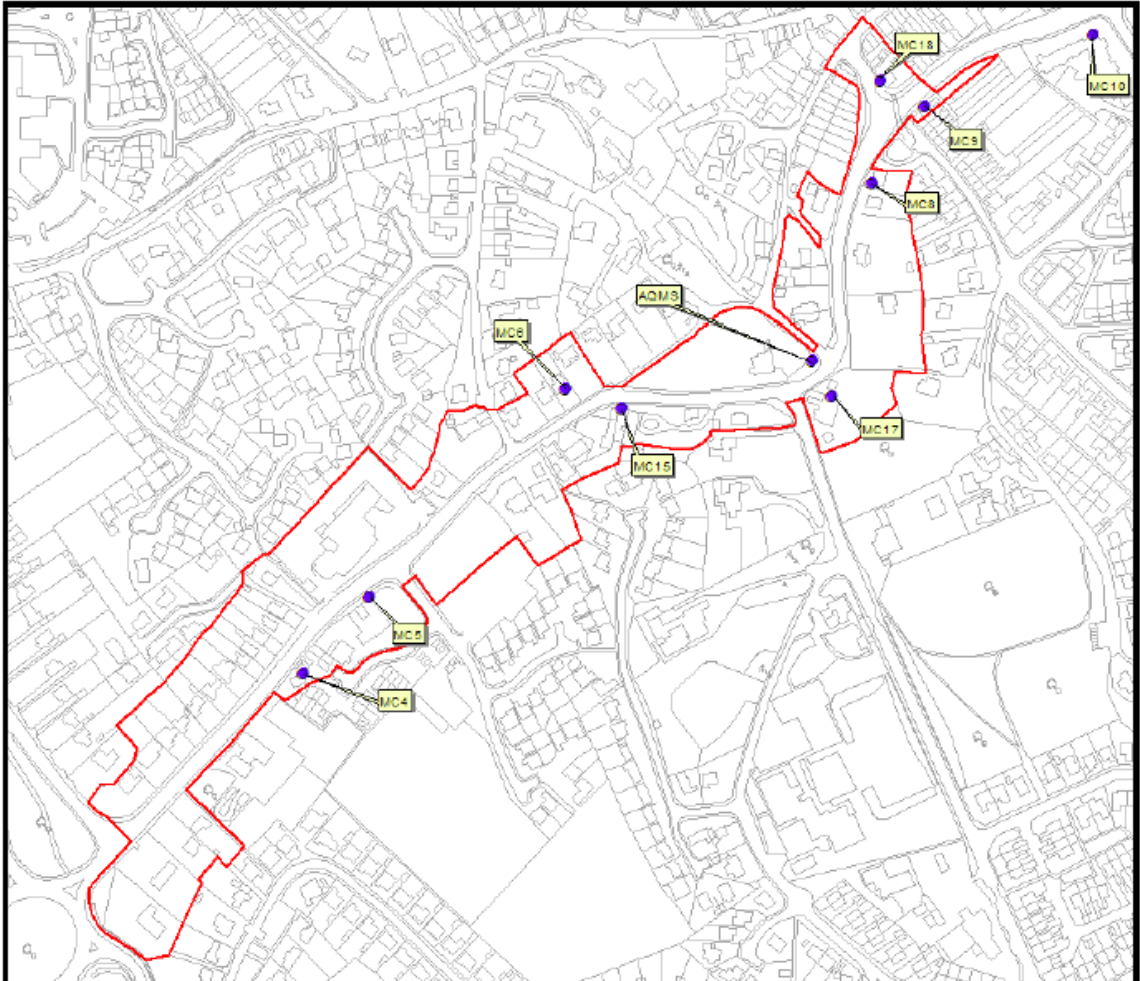
- Support for the increase in rail services between Chepstow and Cardiff announced as part of the Wales and Border franchise (an extra 13 services per day) along with the need to ensure that these services also stop at Lydney Station to ensure maximum benefit to the communities of the Forest of Dean and Gloucestershire as a whole (and benefits in modal shift along with A48 corridor);
- During the franchise negotiations for the Cross Country Services, emphasising the need to ensure that train services continue to stop at Chepstow and Lydney, to keep current levels of service frequency at these stations and not decrease them;
- Support for any wider initiatives that may be taken forward by Bristol City Council, Highways England or Welsh Government (in relation to toll removal) or the wider Cardiff Capital Region that could potentially benefit the transport options for the communities for south east Monmouthshire, Southwest Gloucestershire and the Forest of Dean.

# Appendix A

## Evidence to Support Case for Change

A.1 Air Quality Management Area

**Figure A.1 Chepstow Air Quality Management Area (AQMA)**



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## SEWTM Summary Traffic Flows

**Table A.1 SEWTM Summary table of traffic flows**

Period	Location	Direction	2015 (all vehicles)	
			Observed	Modelled
AM (1hr)	A48, River Wye Bridge, Chepstow	Westbound (ATC MCC)	977	939
AM (1hr)		Eastbound (ATC MCC)	609	0*
Inter Peak Average (1hr)		Westbound (ATC MCC)	674	683
Inter Peak Average (1hr)		Eastbound (ATC MCC)	563	0*
PM (1hr)		Westbound (ATC MCC)	877	809
PM (1hr)		Eastbound (ATC MCC)	817	0*

\* failed in the model

## Local Bus Services

**Figure A.2 – Local Bus Services**



**Table A.2 - Bus Services and Frequencies**

From	To	Services	Changes	Frequency	Journey Time
Lydney	Bristol	755 7XP	Chepstow Bus Station	07:04, 09:27, 11:25, 13:27, 16:58,	2hr 11 - 2hr 30
Bristol	Lydney	7XP 755	Chepstow Bus Station	07:59, 09:44, 11:44, 14:44, 16:14	1hr 31 - 2hr 3
Lydney	Cardiff	755 73 30	Chepstow Bus Station Friars Walk, Newport	07:04, 09:27, 11:25, 13:27, 16:58	2hr 56 - 3hr 5
Cardiff	Lydney	30 73 755	Friars Walk, Newport Chepstow Bus Station	06:58, 09:00, 10:58, 13:58, 14:59, 15:07	2hr 32 - 2hr 52
Chepstow	Bristol	7XP	None	06:58, 07:24, 08:38 then hourly until 18:28	53 mins - 1hr 10
Bristol	Chepstow	7XP	None	06:44, 07:59, 08:39 then hourly until 14:44, 16:14, 17:14	38 mins - 55 mins
Chepstow	Cardiff	7XP 30	Friars Walk, Newport	Every 30 minutes (07:18 until 18:48)	1hr 39 - 1hr 56
Cardiff	Chepstow	30 7XP	Friars Walk, Newport	Every hour (06:58 until 18:50)	1hr 39 - 2hr 25

## Rail Services

**Table A.3 Rail Services**

From	To	Changes	Average wait time	Peak Hour Frequency	Time
Chepstow	Bristol Temple Meads	Severn Tunnel Junction	22 minutes	06:19, 06:42, 07:29, 08:27, 08:51	1 hr - 1hr 25
Chepstow	Bristol Parkway	Newport	17 minutes	6:42, 8:51	1hr 10 - 1hr 26
Bristol Temple Meads	Chepstow	Severn Tunnel Junction	19 minutes	16:55, 17:54,	54 mins
Bristol Temple Meads	Chepstow	Cheltenham Spa	6 minutes	16:00, 18:00	1hr 27
Chepstow	Cardiff	Direct service		06:19, 06:42, 07:29, 08:27, 08:51	36 mins - 45 mins
Cardiff	Chepstow	Direct service		16:10, 17:12, 17:45, 18:08, 18:45	31 mins - 38 mins
Lydney	Bristol Temple Meads	Severn Tunnel Junction	22 minutes	06:09, 06:33, 07:20, 08:17	58 mins - 1hr 18
Lydney	Bristol Temple Meads	Cheltenham Spa	31 minutes	07:25, 08:25	1 hr 45 mins
Bristol Temple Meads	Lydney	Severn Tunnel Junction	22 minutes	16:54, 17:55	1hr 3 mins
Bristol Temple Meads	Lydney	Cheltenham Spa	6 minutes	16:00, 16:30, 18:00	1hr 17 mins
Lydney	Cardiff	Direct service		06:09, 06:33, 07:20, 08:17	48 mins - 51 mins
Cardiff	Lydney	Direct service		16:10, 16:45, 17:12, 18:08,	38 mins - 47 mins

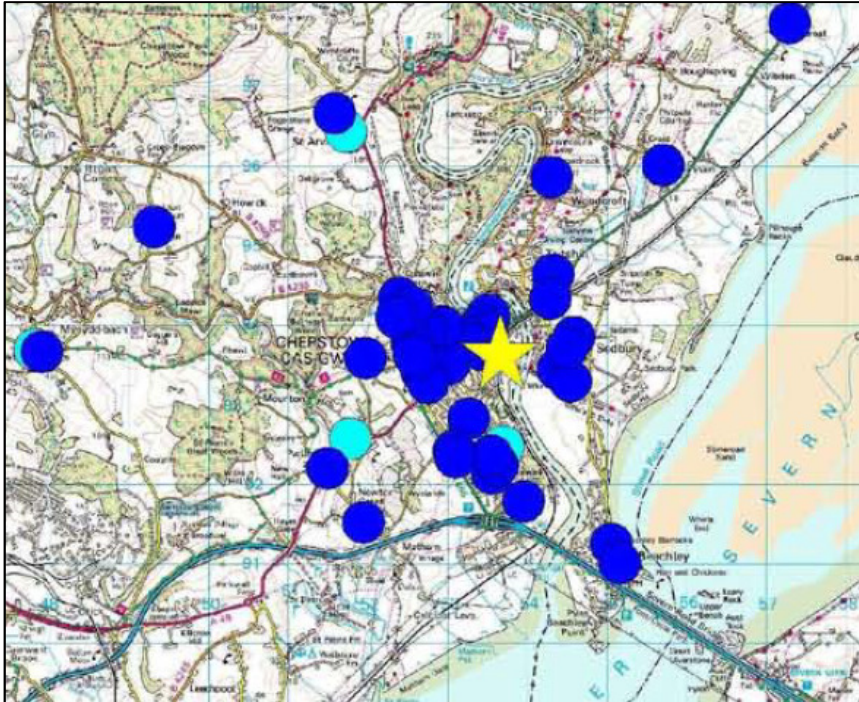
## Rail Survey Summary Data

**Table A.4 Passenger Survey Data – Severn Tunnel Junction 2016 – Mode of travel to Station by Passengers from Chepstow and Lydney**

	Lydney	Chepstow	Total
By Road	2	29	31
By Rail	15	21	36
TOTAL	17	50	67



Figure A.3 Chepstow Station Catchment Area.



# Appendix B

## Objectives Appraisal

Objective	Objective Description	WTS														WBoFGA				MCC PSB											
		Social				Economy				Environment						Goals				Well Being Plan Objectives											
		Improve access to healthcare	Improve access to education, training and lifelong learning	Improve access to shopping and leisure facilities	Encourage healthy lifestyles	Improve the actual and perceived safety of travel	Improve access to employment opportunities	Improve connectivity within Wales and internationally	Improve the efficient, reliable and sustainable movement of people	Improve the efficient, reliable and sustainable movement of freight	Improve access to visitor attractions	Increase the use of more sustainable materials	Reduce the contribution of transport to greenhouse gas emissions	Adapt to the impacts of climate change	Reduce the contribution of transport to air pollution and other harmful emissions	Improve the impact of transport on the local Environment	Improve the impact of transport on our heritage	Improve the impact of transport on biodiversity	A globally responsible Wales	A Wales of vibrant culture and thriving Welsh Language	A Wales of cohesive communities	A more equal Wales	A healthier Wales	A resilient Wales	A prosperous Wales	1	2	3	4		
1	To reduce congestion along the A48 during the peak periods, improving journey times and journey time reliability for users.	0	+	+	0	+	++	++	++	+	+	0	+	+	++	+	+	+	+	0	+	0	+	+	+	+	0	+	+	+	+
2	To improve network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through the provision of viable journey alternatives for all users.	+	+	+	0	+	++	++	++	+	+	0	0	0	+	+	+	0	0	+	+	0	0	+	+	+	0	+	+	+	+

3	To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilising the A48 corridor, and reducing the need to travel.	+	+	+	++	0	+	+	++	0	+	0	++	++	+++	+	++	+	+++	0	+	+	++	+	+	+	+	+	+	+	+
4	To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucestershire and Monmouthshire.	+	++	+	0	0	++	++	++	0	+	0	++	++	+++	+	++	+	+++	0	+	+	+	+	+	+	+	+	+	+	+
5	To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48.	0	++	++	0	0	++	+	+	+	+	0	0	0	0	0	0	0	+	0	+	+	0	+	+	0	+	0	0	+	
6	To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor.	0	++	+	0	0	++	+	+	0	0	0	0	0	0	0	0	+	0	+	0	0	+	+	0	+	0	0	+	+	

**Key**

MCC PSB Well Being Objectives

1. Provide children and young people with the best possible start in life
2. Respond to the challenges associated with demographic change
3. Protect and enhance the resilience of our natural environment whilst mitigating and adapting to the impact of climate change
4. Develop opportunities for communities and businesses to be part of an economically thriving and well-connected county

Ref	Statement/Objective	Comments and relationship to Problems and Issues (Worksheet 1)
1	To reduce congestion along the A48 during the peak periods, improving journey times and journey time reliability for users	<ul style="list-style-type: none"> <li>(1) Congestion along A48: Eastbound congestion worse in evening, Westbound congestion worse in morning.</li> <li>(2) Congestion at High Beech/A466 roundabout.</li> <li>(3) Current rat runs in operation which utilise old Wye crossing bridge and B4228.</li> <li>(7) AQMA - Air quality exceedance – Traffic related Nitrogen Dioxide. Air quality issues are caused by high traffic, heavy goods vehicles on a narrow road (with houses close to kerb side), a steep hill and junctions/roundabouts that increase stop/start.</li> <li>(11) Toll removal could make traffic flows on A48 higher due to cheaper housing in Chepstow – could encourage Bristol commuters etc.</li> </ul>
2	To improve network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through the provision of viable journey alternatives for all users	<ul style="list-style-type: none"> <li>(4) Network resilience - if the A48 crossing is closed very few alternatives for crossing the Wye.</li> <li>(6) Growth in South Gloucester and Bristol placing pressure on traffic levels on A48.</li> <li>(9) Housing growth- expanding local communities in Chepstow and Gloucestershire.</li> <li>(10) Lack of connectivity across the Wye and across the A48.</li> <li>(12) Chepstow severance - communities within Chepstow split by Wye River and A48.</li> <li>(13) River Wye limits access for communities across the river.</li> </ul>
3	Increasing the number of local journeys taken via sustainable means (active travel, public transport etc.) utilising the A48 corridor and reducing the need to travel	<ul style="list-style-type: none"> <li>(28) Poor for walking/cycling (A48 esp.).</li> <li>(29) A48 Pedestrian safety - perception that unsafe to walk along A48 especially at river crossing causing a severance feature.</li> </ul>
4	To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucestershire and Monmouthshire	<ul style="list-style-type: none"> <li>(14) No direct Chepstow – Bristol train.</li> <li>(15) Rail – service to Bristol especially needs to improve (increase in frequency) not reduce.</li> <li>(16) Bus network shrinking – no rail station service.</li> <li>(17) Lack of rail/bus alternatives.</li> <li>(18) Buses - low frequency along A48, many are for local routes only.</li> </ul>
5	To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	<ul style="list-style-type: none"> <li>(9) Housing growth- expanding local communities in Chepstow and Gloucestershire.</li> <li>(19) Lack of alternative routes and travel options to use of private car within Study area and traveling to and from study area.</li> </ul>
6	Enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	<ul style="list-style-type: none"> <li>(10) Ability of local roads to accommodate future traffic flows resulting from the expansion of communities</li> <li>(20) Potential to restrict future developments due to lack of access and congestion on A48.</li> <li>(22) Development pressures on Monmouthshire and Gloucestershire side of A48. Within Monmouthshire about to start process of producing new Local Development Plan.</li> <li>(23) Potential development of the Beachley camp (impact on A48 traffic levels).</li> </ul>

# Appendix C

## Option Appraisal Summary Tables

Option 1

<b>Option 1 – Chepstow Bypass – Land north of Tutshill, including upgrading the A466</b>		
Description	<p>A bypass to the north of Chepstow will commence on the A466 at the Crossway Green Roundabout and will be approximately 2.9 kilometres in length. This roundabout already has five arms and an additional arm will require its enlargement. The bypass alignment will then pass north of Tutshill in Gloucestershire. A bridge and extended structure will cross the river and flood plain to minimise the impact on the flood plain. The bypass alignment will then pass around the northern edge of Tutshill, crossing the B4228 at some point and pass through agricultural land before linking to the A48 to the east. A suggested location is at the B4228 junction although if the bypass is to have priority, it will have to link to the A48 further east. At this stage, it is not known what local roads will have connections with the bypass.</p> <p>In addition to a bypass to the north of Tutshill, the A466 between Crossway Green Roundabout and Newhouse Roundabout will be upgraded to dual carriageway standard.</p>	
How does it tackle the problem?	<p>Scheme will help to address:</p> <ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Network Resilience</li> <li>• Future Development</li> <li>• Air Quality</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> <li>• Development Restrictions</li> </ul>	
Objectives	<p>TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.</p>	+
	<p>TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users</p>	++
	<p>TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.</p>	0
	<p>TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire</p>	0
	<p>TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48</p>	++
	<p>TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor</p>	+
Adverse Impacts and Dependencies	<p>The River Wye channel at this location will require a structure approximately 170 meters in length. This could be achieved by either a large single span structure (e.g. bow-string arch), or more likely, a multi-span structure, as existing river crossings take this form (e.g. the A48 Chepstow Road Bridge is a 5 span structure).</p> <p>Carriageway gradients, due to the topography and the Flood Zone (flood plains) at this location, will make gradients challenging and likely require structures to raise any proposed carriageway levels to the eastern approach. This would be estimated to be in the region of 150 metres in length of supported carriageway. The eastern half of the bypass alignment will pass to the north of Tutshill passing through farmland and introducing severance before meeting the A48 in the vicinity of the B4228 junction. The necessary upgrading of the A466 will be difficult particularly between High Beech Roundabout and Crossway Green Roundabout due to frontage development. It is likely that such an option will result in a degree of unacceptability due to its location within the Wye Valley AONB, its impact on farmland, and the A466 corridor. In addition, it is likely that procurement would be lengthy given the cross county and country interests.</p>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Presence of a Railway line;</li> <li>• Presence of River Wye;</li> <li>• Topography and geology within the study area;</li> <li>• Urban environments;</li> </ul>	

<b>Option 1 – Chepstow Bypass – Land north of Tutshill, including upgrading the A466</b>		
	<ul style="list-style-type: none"> <li>• Sedbury community;</li> <li>• Farmland;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);</li> <li>• Railway cutting within the Gloucestershire part of the study area;</li> <li>• Recreational path through Park Redding (from roundabout) – pedestrians only;</li> <li>• Offa’s Dyke National Trail passes east/west through southern Sedbury;</li> <li>• Footpaths in northern Sedbury;</li> <li>• Wales Coast Path</li> </ul>	
Key Risks	Feasibility	--
	Acceptability	-
	Timescales	--
	Risks	---



Option 2

Option 2 – Chepstow Bypass. Beachley and Sedbury		
Description	<p>A Chepstow Outer Bypass similar to the current proposal was included in the Gwent Structure Plan (1991-2006). This proposal would have commenced at Newhouse Roundabout, passing through the Thornwell residential estate before crossing the River Wye and connecting with the A48 in the Sedbury area of Gloucestershire.</p> <p>The current option will take a similar route and although a termination point on the A48 has been assumed, there are a number of alternative locations for this. The option as described is approximately 3.75 kilometres in length. The alignment through the Thornwell area of Chepstow was determined prior to the residential and business areas being constructed in the 1980s. As a result, some of the necessary infrastructure is already in place. Although part of the alignment benefits from a wide corridor that will accommodate a higher standard road than currently exists, this is not continuous all the way from Newhouse Roundabout, possibly due to the rock in the area. This may limit the standard that can be provided. The existing roundabouts within the Thornwell area will have to be enlarged or different forms of junctions provided.</p>	
How does it tackle the problem?	<p>Scheme will help to address:</p> <ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Network Resilience</li> <li>• Future Development</li> <li>• Air Quality</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> <li>• Development Restrictions</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+++
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	+++
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	0
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	0
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	+++
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	+++
Adverse Impacts and Dependencies	<p>A structure at this location will need to cross both the River Wye and the Newport to Gloucester Railway Line, a distance of approximately 200 metres. This option will suit a multi-span structure, one to cross the railway and a three/four span bridge across the river channel. The topography of this route would see a sharp descent from the west towards the existing railway, where a bridge would need to satisfy Network Rail clearances (both vertical and lateral). The feasibility of this route would be highly dependent on overcoming these two issues (steep descent and rail clearances) prior to any meaningful progress. Once the route has crossed over the railway, a river crossing will be required. Flood plains to the east of the river will need to be considered during the feasibility stage. It is envisaged that an elevated carriageway would need to be included. The length for this could be in the region of 200 metres. The visual appearance of the river and flood plain crossing, although not part of the Wye Valley ANOB, is likely to be considerable. There is likely to be a degree of unacceptability due to the need to pass through a residential area (Thornwell) although this was planned in the knowledge that a future Chepstow</p>	

<b>Option 2 – Chepstow Bypass. Beachley and Sedbury</b>		
	Bypass may pass through the area and it is the only option that the public are generally aware of. Procurement of this option may well be lengthy given the cross county and cross country interests.	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Presence of a Railway line;</li> <li>• Presence of River Wye;</li> <li>• Topography and geology within the study area;</li> <li>• Urban environments;</li> <li>• Sedbury community;</li> <li>• Farmland;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);</li> <li>• Woodland areas between railway and Thornwell area/The Bulwarks – Park Redding and Warren Slade;</li> <li>• The Bulwarks iron age hillfort;</li> <li>• Footpath on river side of railway with underpasses – Warren Slade and Park Redding;</li> <li>• Railway cutting within the Gloucestershire part of the study area;</li> <li>• Recreational path through Park Redding (from roundabout) – pedestrians only;</li> <li>• Offa’s Dyke National Trail passes east/west through southern Sedbury;</li> <li>• Footpaths in northern Sedbury;</li> <li>• Wales Coast Path</li> </ul>	
Key Risks	Feasibility	--
	Acceptability	+
	Timescales	--
	Risks	---

Option 3

Option 3 – Chepstow Bypass – following railway realignment		
Description	<p>This will utilise the same alignment through the Thornwell area of Chepstow as Option 2 and overall, will be approximately 2.6 kilometres in length. From the eastern Thornwell roundabout, the alignment will pass through the wooded area and drop down steeply to the alignment of the Newport to Gloucester railway line. The road will be located above the railway on a structure as the existing corridor is not wide enough to provide a road adjacent to it. The structure will commence to the east of Bluebell Drive. It will continue northwards on this alignment passing over Chepstow Railway Station to a point adjacent to the Chepstow Tesco store from where it will leave the railway alignment, cross the car park and meet the A48 at a junction. The form of junction has yet to be determined although an arrangement could be provided that gave priority to the new road with access to Chepstow town centre from it. At this stage, it is not known what local roads will have connections with the bypass.</p>	
How does it tackle the problem?	<p>Scheme will help to address:</p> <ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Network Resilience</li> <li>• Future Development</li> <li>• Air Quality</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> <li>• Development Restrictions</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	+
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	0
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	0
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	++
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	+
Adverse Impacts and Dependencies	<p>This route would follow the existing Newport to Gloucester railway line. The proposal would be located in an elevated position above the line, if ground levels can be achieved, given the steep embankments in this area. A new retaining wall along the length of the railway would be very difficult to construct, especially as it is likely to be over a length in the region of 1800 metres. A flyover type structure may be the only solution, with supports that would straddle the existing railway. A route past or over the existing railway station will also be challenging for both design and construction. In addition, a historical Iron Age hill fort (the Bulwarks) will need to be avoided. Given the necessary location of this option, it is extremely unlikely that it would be acceptable. Procurement is likely to be very lengthy even though it is located entirely within Monmouthshire/Wales. The scheme would need the consent of Network Rail which would be very unlikely to be granted on safety grounds of building and operating a highway over an operational railway line.</p>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Presence of a Railway line;</li> <li>• Presence of River Wye;</li> <li>• Topography and geology within the study area;</li> <li>• Urban environments;</li> </ul>	

<b>Option 3 – Chepstow Bypass – following railway realignment</b>		
	<ul style="list-style-type: none"> <li>• Sedbury community;</li> <li>• Farmland;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);</li> <li>• Woodland areas between railway and Thornwell area/The Bulwarks – Park Redding and Warren Slade;</li> <li>• The Bulwarks iron age hillfort;</li> <li>• Footpath on river side of railway with underpasses – Warren Slade and Park Redding;</li> <li>• Railway cutting within the Gloucestershire part of the study area;</li> <li>• Recreational path through Park Redding (from roundabout) – pedestrians only;</li> <li>• Offa’s Dyke National Trail passes east/west through southern Sedbury;</li> <li>• Footpaths in northern Sedbury;</li> <li>• Wales Coast Path</li> </ul>	
Key Risks	Feasibility	---
	Acceptability	---
	Timescales	---
	Risks	---

Option 4

Option 4 – Chepstow Bypass – Beachley and Sedbury from M48	
Description	<p>This option will provide a bypass to Chepstow that will be constructed fully within Gloucestershire. It will involve the reclassification of the M48 to a non-motorway Trunk Road and the provision of a grade separated junction between the bridge over the River Wye and the Severn Bridge. This will require east and west facing slip roads leading to a roundabout in Beachley. Due to the level difference between the M48 and Beachley, an elevated roundabout will be beneficial as this will reduce the slip road gradients</p> <p>It will at some point merge with Beachley Road, which will be upgraded. It will then follow a similar alignment to Option 2 and will pass through agricultural land, cross Sedbury Lane and the Newport to Gloucester railway line before meeting the A48 at its junction with Gloucester Road (the B4228). If the bypass was to have priority, the connection would have to be further east.</p> <p>At this stage, it is not known what local roads will have connections with the bypass.</p>
How does it tackle the problem?	<p>Scheme will help to address:</p> <ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Network Resilience</li> <li>• Future Development</li> <li>• Air Quality</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> <li>• Development Restrictions</li> </ul>
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users. <span style="float: right;">++</span>
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users <span style="float: right;">+</span>
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel. <span style="float: right;">0</span>
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire <span style="float: right;">0</span>
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48 <span style="float: right;">++</span>
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor <span style="float: right;">++</span>
Adverse Impacts and Dependencies	<p>This route would require a junction off the existing M48 structure that links the motorway bridge over the River Wye and the Severn Bridge. This crosses over Beachley at a high level approximately 16 metres above the surrounding land. Construction of a new junction will be difficult and would be very close to the existing one at Newhouse. It would require slip roads from the motorway leading down to a (possibly elevated ) roundabout, which will require a considerable amount of land. The footprint of this option north from Beachley will be considerable and it is likely that it could only be considered along with the closure of Beachley MOD Barracks (likely to be prior to 2027) and redevelopment of the Beachley peninsula. The procurement process is likely to be lengthy, given that it will have to be acceptable to Highways England and possibly the Welsh Government due to its location close to their geographical boundary. It is, however, located entirely within Gloucestershire/ England. Any large project such as this will have major risks associated with it, which are not possible to quantify at the present time.</p>
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Presence of a Railway line;</li> <li>• Presence of River Wye;</li> <li>• Topography and geology within the study area;</li> <li>• Urban environments;</li> </ul>

**Option 4 – Chepstow Bypass – Beachley and Sedbury from M48**

	<ul style="list-style-type: none"> <li>• Sedbury community;</li> <li>• Farmland;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);</li> <li>• Railway cutting within the Gloucestershire part of the study area;</li> <li>• Offa's Dyke National Trail passes east/west through southern Sedbury</li> <li>• Footpaths in northern Sedbury;</li> <li>• Wales Coast Path</li> </ul>	
Key Risks	Feasibility	--
	Acceptability	--
	Timescales	---
	Risks	---

Option 5

Option 5 - New M48 Junction (possible location of Hayes Gate/St. Pierre Golf Course)		
Description	This will be a new junction on the M48 with the possible suggested location being St. Pierre Golf Course. The A48 crosses the motorway at this point and the provision of east facing slip roads will enable traffic between Caldicot and surrounding areas, and the Severn Bridge (and vice versa), to avoid using the A466 and High Beech Roundabout, thus giving relief to this junction. However, it may not provide very much relief to the A48 through Chepstow itself. Other possible locations for the junction along the M48 exists, with a position further west possibly more appropriate	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Future Development</li> <li>• Increase in A48 Traffic</li> <li>• Development Restrictions</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	0
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	0
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	0
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	+
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	+
Adverse Impacts and Dependencies	This option will require a new junction off the existing M48 and onto the B4245 at Hayes Gate/St. Pierre Golf Course. Land acquisition to provide this option could be the source of objections. However, with the proposal being for east facing slip roads only, this would avoid land take from Hayes Gate Farm and St. Pierre Golf Club. Acceptable design standards may be difficult to achieve given the likely need for a compact layout. Given its location close to the Newhouse M48 junction, this option may not be acceptable by the Welsh Government. In terms of timescales, this will largely depend on the Welsh Government's acceptance (or not) of this option. However, if there are proposed developments in SE Monmouthshire as a result of the abolition of Severn Bridge tolls, there could be calls for such an option to improve access to the motorway network although a more westerly location is likely to be more beneficial. In theory, timescales could be relatively short due to the size of the scheme. There may well be some risks associated with this option, which are not possible to quantify at the present time. The location for a new M48 junction would be investigated and decided during future appraisal stages.	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Presence of a Railway line;</li> <li>• Topography and geology within the study area;</li> <li>• Urban environments;</li> <li>• Farmland;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre</li> </ul>	
Key Risks	Feasibility	+
	Acceptability	+
	Timescales	+
	Risks	--

## Option 6

Option 6 – Severn Crossing between Lydney and A48/M5		
Description	Provision of a third crossing of the River Severn at Lydney will provide direct access between the A48 and the A38/M5. Lydney is the closest main town to the River Severn and a direct link would pass to the north of Berkeley. It could either meet the A38 or continue east to the M5 where a new junction will be located between Junctions 13 and 14. The full link will be approximately 8.9 kilometres long including a 1.5 kilometre long bridge. Such a link will negate the need to travel along the A48 through Chepstow to access the M5/Gloucester via the Forest of Dean.	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>A48 Congestion</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	+
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	0
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	0
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	0
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0
Adverse Impacts and Dependencies	A very large scale structure will be required for this option, as the distance across the River Severn at this location is in the region of 1.5 kilometres. This option would suit a suspension bridge or a multi-span structure, with headroom clearances for navigable vessels to pass beneath. For a comparison, the distance between riverbanks will be similar to that of the M48 Severn Bridge, which has a structural form of a suspension bridge (the M4 Second Severn Crossing has a length of approximately 4.5 kilometres). The approach from the A38/M5 direction will cross farmland. In terms of feasibility, although it would be a major project, the principles would be the same as many others of a similar type and will therefore be generally well known. The support for such a major proposal is likely to be mixed. Timescales are likely to be very long and risks are likely to be large despite the 'conventional' nature of the proposal.	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>Presence of River Wye;</li> <li>Topography and geology within the study area;</li> <li>Urban environments;</li> <li>Farmland;</li> <li>Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);</li> </ul>	
Key Risks	Feasibility	-
	Acceptability	--
	Timescales	---
	Risks	---



Option 7

Option 7 – A48 and A466 Upgrades		
Description	<p>This option includes all the proposals that were originally considered in the 1980s. Widen the existing A48 between High Beech Roundabout and the general vicinity of the B4293 junction that provides access to Chepstow Town Centre. Minimal improvements to the roundabout proposed with improvements to the Bulwark Road junction and the upgrading of the A466.</p> <p>In the 1980's a number of options were considered for widening Newport Road, Hardwick Hill, and Mount Pleasant as well as a proposal for a new section of carriageway directly connecting Newport Road and the A48 in the vicinity of the B4293 junction. This included options for separate junctions at each end of the new road for local access as well as the extension of Bulwark Road to a new single access replacing Hardwick Hill Lane.</p>	
How does it tackle the problem?	<p>Scheme will help to address:</p> <ul style="list-style-type: none"> <li>• Increase in A48 Traffic</li> <li>• A48 Congestion</li> <li>• Rat-running</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	-
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	-
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	0
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	+
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	+
Adverse Impacts and Dependencies	<p>A48 and A466 upgrades will not require any large scale structures. Carriageway improvements by way of road widening or dual carriageways appear possible without excessive construction work/costs. However, there will be a social impact due to highway works being within residential areas. Buildability is likely to be difficult for the same reason although upgrading the A466 is likely to be more straightforward as some of the highway corridor is already wide. On-line improvements of the A48 were proposed in the 1980s as a way of improving the A48 through Chepstow and were the subject of a public consultation exercise. It is likely that now, just as then, gaining acceptability of this option given the air quality issues that exist within this corridor, will be difficult. Timescales may not be too great although there may well be considerable risks due to the urban location that this option passes through. However, these are unable to be quantified at the present time.</p>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Presence of a Railway line;</li> <li>• Presence of River Wye;</li> <li>• Topography and geology within the study area;</li> <li>• Urban environments;</li> <li>• Farmland;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);</li> <li>• Woodland areas between railway and Thornwell area/The Bulwarks – Park Redding and Warren Slade;</li> <li>• The Bulwarks iron age hillfort;</li> <li>• Footpath on river side of railway with underpasses – Warren Slade and Park Redding;</li> <li>• Recreational path through Park Redding (from roundabout) – pedestrians only</li> </ul>	

<b>Option 7 – A48 and A466 Upgrades</b>		
Key Risks	Feasibility	+
	Acceptability	--
	Timescales	+
	Risks	-

## Option 8

Option 8 – New Railway Station		
Description	New railway stations provided at Tutshill and Newhouse. Provision of park and ride facilities required at each station to intercept strategic east-west traffic movements from the A48 through Chepstow.	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>• Network Resilience</li> <li>• Future Development</li> <li>• Congestion on A48</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	+
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	++
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	++
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	+
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>• Location for new station at Tutshill is constrained by tunnel located at 140 miles and 59 chain which is 328 meters in length. This would be best location for station to allow access from A48 and local settlements but would not be possible due to tunnel. New station would need to be north of the tunnel however, within 2 miles of the tunnel is a level crossing (need to ensure new station would not be located where could affect striking points of the level crossing). Locating station north of the tunnel would mean the station would be further from settlements of Sedbury and Tutshill to capture local population walking to station. North of the tunnel the railway line is also lower than the A48, causing difficulty for access to station, which would be needed to capture strategic journeys. Permanent way works could be required.</li> <li>• Location of new station at Newhouse is constrained by curvature of line at this location (no sufficient straight section to locate station). There is a level crossing within approximately 1 mile of Newhouse location (located at 143 miles &amp; 15 chains), which may mean that a station at this location would affect striking points.</li> <li>• Feasibility of stopping services at two new stations near each other – unlikely to be timetable space for both. As Tutshill and Newhouse would be 1 mile from existing Chepstow Station (Chepstow station located at 141 miles and 33 chains). Unlikely to be benefit in having new stations so near to existing station at Chepstow, likely to take demand from Chepstow rather than generate new demand.</li> <li>• Frequency of service in peaks would be needed in order to provide a viable alternative to car travel for access to Cardiff / Newport and Bristol. This may require additional investment.</li> <li>• Service tie in for access to Bristol with Cross Country and Severn Tunnel junction services. Without seamless interchange at STJ commuters will not use to access to Bristol from South Gloucestershire area.</li> </ul>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Presence of a Railway line;</li> <li>• Presence of River Wye;</li> <li>• Topography and geology within the study area;</li> <li>• Urban environments;</li> <li>• Sedbury community;</li> <li>• Farmland;</li> </ul>	

<b>Option 8 – New Railway Station</b>		
	<ul style="list-style-type: none"> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);</li> <li>• Woodland areas between railway and Thornwell area/The Bulwarks – Park Redding and Warren Slade;</li> <li>• The Bulwarks iron age hillfort;</li> <li>• Footpath on river side of railway with underpasses – Warren Slade and Park Redding;</li> <li>• Railway cutting &amp; Tunnel within the Gloucestershire part of the study area;</li> <li>• Recreational path through Park Redding (from roundabout) – pedestrians only;</li> <li>• Offa’s Dyke National Trail passes east/west through southern Sedbury;</li> <li>• Footpaths in northern Sedbury;</li> <li>• Wales Coast Path</li> </ul>	
Key Risks	Feasibility	---
	Acceptability	+
	Timescales	---
	Risks	--

## Option 9

Option 9 - Public Transport Integration		
Description	Implementation of fully Integrated public transport including integrated ticketing between modes.	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>• Severance / Connectivity / Access</li> <li>• Bus Services / School Transport</li> <li>• A48 Congestion</li> <li>• Future Development</li> <li>• Air Quality</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	0
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	+
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	+
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	+
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>• Achieving integrating ticketing would be dependent on national all Wales developments, and at Chepstow cross border issues would require integration with English public transport services. This would be very difficult to achieve. Progress implementing all wales ticketing has been very slow.</li> <li>• Better connection with local bus services calling at Chepstow train station etc., may reduce local trips on A48 and may be achievable (evidence in the 'Chepstow Rail Corridor Option Development &amp; Appraisal, Final WeITAG 1+ Report, April 2011' from passenger survey data showed origin data indicating a local catchment for Chepstow station, which could benefit from good local bus connections from surrounding suburb areas including Tutshill and Sedbury – reducing journeys using A48 into Chepstow).</li> </ul>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Urban environments;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• All wales scheme required for integrated ticketing (location of routes also cross border need system compliant with English public transport operators)</li> </ul>	
Key Risks	Feasibility	--
	Acceptability	++
	Timescales	---
	Risks	--

## Option 10

<b>Option 10 – Public Transport Upgrades (Regional)</b>		
Description	Improved public transport network in terms of destinations served and frequency of service to more regional destinations such as a direct bus service to Bristol and Gloucester from Lydney and a Metro service to Cardiff.	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Network Resilience</li> <li>• Air Quality</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	+
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	0
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	++
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	+
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>• A service leaving Lydney and calling at Chepstow to travel to Bristol or Cardiff may not provide any JT benefits to persuade users out of their car. Likely to face delays into Bristol and Cardiff for bus service. Also unlikely to provide JT saving as travels along A48 from Gloucestershire into Chepstow and would be caught in congestion at this location unless numbers transferring to alternative modes was significant.</li> <li>• Potential for high running costs to service, particularly to achieve the required frequency to give a viable alternative to the car.</li> <li>• Risk of low user numbers if the service did not provide a consistent and good journey time benefit to transferring from car.</li> </ul>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Urban environments;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Congestion at destination locations may effect viability of services.</li> </ul>	
Key Risks	Feasibility	+
	Acceptability	+
	Timescales	--
	Risks	--

Option 11

Option 11 - Public Transport Upgrades (Local)		
Description	Improvements to local bus services to provide better Rail /Bus interchange (Chepstow) and better local bus services to reduce local trips on A48 including Wye Valley bus upgrades	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Future Development</li> <li>• Severance / Connectivity / Access</li> <li>• Increase in A48 Traffic</li> <li>• Bus Services / School Transport</li> <li>• Development Restrictions</li> <li>• Parking</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	+
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	+
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	+
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	0
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>• Potential to improve local bus services, particularly for those communities of Tutshill and Sedbury to decrease the number of single car journeys made into and out of Chepstow using the A48. Services providing access to train station and to local schools and other key trip generators during morning and evening peaks could assist in reducing congestion on A48.</li> <li>• Further work would be required to establish which services to improve and the specific origin and destination of services to provide most traffic relief to the A48.</li> <li>• Could be high operational costs to services if number of passengers are not achieved to make services viable.</li> </ul>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Urban environments;</li> <li>• Sedbury community;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Operator buy in.</li> <li>•</li> </ul>	
Key Risks	Feasibility	+
	Acceptability	++
	Timescales	+
	Risks	-

Option 12/14

Option 12/14 - Combination of (12) Improved rail services to Bristol and (14) Park and Ride (Rail)			
Description	<p>12 - New rail link to Bristol direct from Chepstow / Lydney via Severn Tunnel Junction. Likely to require a turn back of the train at Severn Tunnel Junction or investment in increased frequency of services calling at Chepstow &amp; Lydney to enable interchange at Severn Tunnel Junction with services to Bristol.</p> <p>14 - Improvement to rail based park and ride at Chepstow and Lydney railway stations, including expansion of park and ride car parking facilities and improvements to station facilities.</p>		
How does it tackle the problem?	<p>Scheme will help to address:</p> <ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Rat-running</li> <li>• Future Development</li> <li>• Air Quality</li> <li>• Development Restrictions</li> <li>• Network Resilience</li> <li>• Lift-sharing</li> <li>• Increase in A48 Traffic</li> <li>• Rail links</li> </ul>		
Objectives	<b>Scheme</b>	<b>12</b>	<b>14</b>
	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	++	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	+	+
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	+	+
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	+	++
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	++	+
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	+	0
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>• Any increase in services calling at Lydney, Chepstow and then STJ railway stations could provide the required frequency to have regular connections at STJ to direct Bristol services.</li> <li>• A previous report 'Chepstow Rail Corridor Option Development &amp; Appraisal, Final WeITAG 1+ Report, April 2011' looked at frequency enhancements. It concludes that it is relatively simple to increase the service to hourly in the off peak gaps as path's are available at XX.12 from Cardiff and XX.45 from Cheltenham throughout the off peak period. There would be no direct infrastructure requirements associated with this option, the estimated operational costs for an additional unit was £2.5m per annum.</li> <li>• The report outlines that an additional trains per hour to facilitate a half-hourly service (either an additional Cardiff to Chepstow service or extension of Ebbw Vale – Newport Services to Chepstow) is particularly difficult if just the main lines are utilised. An additional service would need to use relief lines and use of platform 1 at Newport (relief line upgrades required). The option also requires a turn back facility at Chepstow. The report estimates the turnaround at £7.1m. An operational cost of £5.3 million per annum is also estimated by the report. Only taking a service to Chepstow would not give the required benefits to the A48 – services would need to go as far as Lydney. Feasibility of whether a service could go as far as Lydney would need to be investigated at further stages of appraisal (WeITAG stage 2).</li> <li>• Any assessment of improving frequencies would need to consider freight movements on the line.</li> </ul>		



**Option 12/14 - Combination of (12) Improved rail services to Bristol and (14) Park and Ride (Rail)**

	<ul style="list-style-type: none"> <li>• The 2011 report outlines that although there are crossovers at both Chepstow and Lydney it is not possible to turn round trains at those points except in an emergency when staff have to be provided to supervise the movements. However, there is potential to upgrade the infrastructure so that turn rounds can take place on a regular basis at these locations.</li> <li>• The new wales and border franchise includes a commitment for a hourly service between Cheltenham and Chepstow. Direct Train to Bristol (via STJ)</li> <li>• Would require infrastructure at STJ to allow turnaround of the service.</li> <li>• Would need timetable analysis to see if the service could fit in-between existing services on Chepstow line and within the operational arrangements of STJ also to establish whether capacity on the mainline and at Bristol temple meads.</li> <li>• Tunnel may not have capacity for any extra services.</li> <li>• If service travelling just between STJ and Lydney in a loop would need turn back infrastructure at Lydney.</li> <li>• Potential to expand park and ride facilities at Lydney railway station– however, would probably need to increase existing rail services to make this a viable option for commuting to Cardiff or Bristol. (approx. hourly service at present in morning peak from Lydney to Cardiff with about 1 hour JT – links to Bristol more sporadic with some services requiring changes at STJ others at Newport). Demand at the station would need to be further investigated to establish viability of expansion.</li> <li>• Land availability at Chepstow could affect implementation. To maximise benefit of investment require increase in service frequency or direct service to Bristol, along with station improvements at Chepstow, Lydney (footbridge) and STJ. The New Wales and Border Franchise operating from October 2018 includes a commitment to make improvements to Chepstow Station.</li> <li>• Without service frequency enhancement may not result in modal shift and traffic relief on A48.</li> </ul>															
<p>Constraints (see plan in IAR Appendix G)</p>	<ul style="list-style-type: none"> <li>• Presence of a Railway line;</li> <li>• Topography and geology within the study area;</li> <li>• Urban environments;</li> <li>• Farmland;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Railway cutting within the Gloucestershire part of the study area;</li> <li>• Frequency enhancements may require use of main lines</li> <li>• Land availability at Chepstow could affect implementation</li> <li>• Working with stakeholders such as Network Rail</li> <li>• Re-negotiation of Cross Country Franchise</li> </ul>															
<p>Key Risks</p>	<table border="1"> <thead> <tr> <th data-bbox="395 1518 1197 1552"><b>Scheme</b></th> <th data-bbox="1197 1518 1313 1552"><b>12</b></th> <th data-bbox="1313 1518 1441 1552"><b>14</b></th> </tr> </thead> <tbody> <tr> <td data-bbox="395 1552 1197 1585">Feasibility</td> <td data-bbox="1197 1552 1313 1585">-</td> <td data-bbox="1313 1552 1441 1585">-</td> </tr> <tr> <td data-bbox="395 1585 1197 1619">Acceptability</td> <td data-bbox="1197 1585 1313 1619">+++</td> <td data-bbox="1313 1585 1441 1619">+</td> </tr> <tr> <td data-bbox="395 1619 1197 1653">Timescales</td> <td data-bbox="1197 1619 1313 1653">--</td> <td data-bbox="1313 1619 1441 1653">-</td> </tr> <tr> <td data-bbox="395 1653 1197 1686">Risks</td> <td data-bbox="1197 1653 1313 1686">--</td> <td data-bbox="1313 1653 1441 1686">-</td> </tr> </tbody> </table>	<b>Scheme</b>	<b>12</b>	<b>14</b>	Feasibility	-	-	Acceptability	+++	+	Timescales	--	-	Risks	--	-
<b>Scheme</b>	<b>12</b>	<b>14</b>														
Feasibility	-	-														
Acceptability	+++	+														
Timescales	--	-														
Risks	--	-														

Option 13

Option 13 – Park and Ride (Bus)/Park and Share		
Description	Park & rides / Park and Share provided at Tutshill and Chepstow Race Course. Park and Share site at Tutshill could provide ability to offer car sharing option along with Park and Ride services for commuters accessing Bristol and Cardiff.	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>• Lift sharing</li> <li>• Air quality</li> <li>• Bus services</li> <li>• Parking</li> <li>• Congestion on A48</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	+
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	++
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	++
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	+
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>• A Park and Ride at Lydney by bus may be too far a journey to encourage modal shift for commuters using A48 to Cardiff / Bristol or Gloucestershire.</li> <li>• Location for a park and ride / share site in Tutshill could be field to East of Beachley Road (access from A48 to catch strategic journeys). However, this likely to be greenbelt so could be difficult to develop – near residential area so may face local opposition.</li> <li>• Express Park and Ride services would be required from Tutshill location to give viable journey time and viable journey alternative to commuting by car. May still be too far from final destination (of Bristol or Cardiff) to encourage modal shift from car to park and ride. Not likely to be volume of users from local community of Sedbury and Tutshill for journeys into Chepstow to make service viable. Further data would be required on origin and destination of A48 users to establish where park and ride services could be located and what areas could be served.</li> <li>• Park and Ride at Chepstow race course very unlikely to provide any relief to the A48 if it served either a local purpose into Chepstow or more strategic to Bristol or Cardiff. Volume of trips from this corridor to these areas unlikely to warrant a park and ride service.</li> </ul>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Presence of a Railway line;</li> <li>• Topography and geology within the study area;</li> <li>• Urban environments;</li> <li>• Sedbury community;</li> <li>• Farmland;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);</li> <li>• Railway cutting within the Gloucestershire part of the study area;</li> <li>• Offa's Dyke National Trail passes east/west through southern Sedbury;</li> <li>• Footpaths in northern Sedbury</li> </ul>	
Key Risks	Feasibility	--

<b>Option 13 – Park and Ride (Bus)/Park and Share</b>		
	Acceptability	-
	Timescales	-
	Risks	--

Option 15/16

Option 15/16 - Combination of (15) Active Travel Upgrades and (16) Active Travel Additions			
Description How does it tackle the problem?	15 - Active Travel upgrades to include cycle route provision to bus and rail facilities to improve interchange and improved pedestrian routes (including potential links to Severn Tunnel Junction, Chepstow Railway Station and Cadlocot Railway Station). New Active Travel bridge affixed to side of existing A48 and dedicated for pedestrians and cyclists.		
	16 - If by pass of existing A48 corridor implemented, existing A48 road bridge section converted to narrow highway lanes, to include dedicated wider walking and cycling facilities.		
Objectives	Scheme will help to address:		
	<ul style="list-style-type: none"> <li>Air quality</li> <li>Increase in A48 traffic – potential to remove local trips</li> <li>Active Travel and safety</li> <li>Parking</li> <li>A48 Congestion - potential to remove local trips</li> <li>Future development</li> </ul>		
Objectives	<b>Scheme</b>	<b>15</b>	<b>16</b>
	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	+	+
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	++	++
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	0	0
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	0	0
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0	0
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>Upgrades to active travel link such as an additional structure attached to the A48 Wye Bridge could be feasible and would give greatly improved links between Chepstow town centre and the communities of Tutshill, Sedbury, and Beachley.</li> <li>Not likely to provide a viable mode for more strategic journeys that currently utilising the A48, e.g. access to M48 for Cardiff and Bristol for communities within the area of Gloucestershire east of the River Wye and the Forest of Dean unless proposals were combined with an expansion of the National Cycle Network into these areas. There are currently no sections of the NCN in these parts of Gloucestershire and the Forest of Dean.</li> <li>Option 16 is reliant on the implementation of one of the by pass options for the A48 to be downgraded and improvements made to increase road space for active travel. It would involve reallocating road space to pedestrians and cyclists.</li> </ul>		
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>Presence of a Railway line;</li> <li>Presence of River Wye;</li> <li>Topography and geology within the study area;</li> <li>Urban environments;</li> <li>Sedbury community;</li> <li>Farmland;</li> <li>Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>Wye Valley flood plain to east of river is a Flood Zone 2 (high probability of flooding);</li> </ul>		

<b>Option 15/16 - Combination of (15) Active Travel Upgrades and (16) Active Travel Additions</b>			
	<ul style="list-style-type: none"> <li>• Woodland areas between railway and Thornwell area/The Bulwarks – Park Redding and Warren Slade;</li> <li>• The Bulwarks iron age hillfort;</li> <li>• Footpath on river side of railway with underpasses – Warren Slade and Park Redding;</li> <li>• Railway cutting within the Gloucestershire part of the study area;</li> <li>• Recreational path through Park Redding (from roundabout) – pedestrians only;</li> <li>• Offa’s Dyke National Trail passes east/west through southern Sedbury;</li> <li>• Footpaths in northern Sedbury;</li> <li>• Wales Coast Path</li> </ul>		
Key Risks	Scheme	15	16
	Feasibility	+	+
	Acceptability	++	++
	Timescales	+	+
	Risks	-	-

## Option 17

<b>Option 17 - Reducing the need to travel</b>		
Description	Planning controls to link housing to employment and flexible working practices / working from home etc. to reduce the need to travel. School travel plans to be updated for all schools in Chepstow /bus/catchments enforced. Adoption of future technologies which may reduce the need to travel or better manage the network.	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>• A48 Congestion</li> <li>• Air quality</li> <li>• Bus services / school transport</li> <li>• Future development</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	0
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	+
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	0
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	+
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>• Likely to be a long term option, where reliant on future developments being designed to reduce the need to travel. As Chepstow is already a well formed town, may be lack of ability to influence how the town centre and suburbs are planned in terms of access to services to reduce need to travel.</li> <li>• Reviewing all local school travel plans could be achievable and could help to reduce some of the more local journeys by car undertaken using the A48 corridor.</li> <li>•</li> </ul>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Sedbury and Tutshill community;</li> <li>• Air Quality Management Area (AQMA) on A48 between High Beech Roundabout and B4293 to Town Centre;</li> <li>• Which technologies will be advanced and their impact on travel is relatively unknown.</li> </ul>	
Key Risks	Feasibility	--
	Acceptability	+
	Timescales	--
	Risks	-

## Option 18

Option 18 – Containment of Settlements		
Description	Encouraging Tutshill / Sedbury to be new centres / self-contained settlements to reduce need for local trips along A48 to access services of Chepstow town centre.	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>• Rat running</li> <li>• Bus services / school transport</li> <li>• Parking</li> <li>• A48 congestion – local trips</li> <li>• Air quality</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	0
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	+
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	0
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	+
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>• This option is dependent on the development of local services within the communities of Tutshill and Sedbury. If not partly funded then could be reliant on private suppliers of services to contain settlements which may be difficult to achieve unless service providers can remain profitable.</li> <li>• Would take time to develop required services to contain the settlements.</li> <li>• Likely to be public opposition from residents who see Chepstow as their local service centre.</li> </ul>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Sedbury and Tutshill community;</li> <li>• Private investment to develop local services.</li> </ul>	
Key Risks	Feasibility	--
	Acceptability	-
	Timescales	---
	Risks	-

## Option 19

<b>Option 19 – Congestion Charge</b>		
Description	Congestion charge implemented for users of A48	
How does it tackle the problem?	Scheme will help to address: <ul style="list-style-type: none"> <li>• A48 congestion</li> <li>• Air quality</li> </ul>	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	+
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	0
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	+
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	0
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	0
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	--
Adverse Impacts and Dependencies	<ul style="list-style-type: none"> <li>• Extremely difficult option to implement with large public opposition.</li> <li>• Unlikely to raise enough revenue to fund operational costs of the scheme.</li> <li>• Unlikely to adequately address the issue of congestion along corridor and could cause future economic issues for the area.</li> <li>• Congestion charging schemes are better suited to urban environments with high public transport frequencies and availability.</li> </ul>	
Constraints (see plan in IAR Appendix G)	<ul style="list-style-type: none"> <li>• Local community opposition</li> </ul>	
Key Risks	Feasibility	-
	Acceptability	---
	Timescales	--
	Risks	--



## Option 20

Option 20 - Do Minimum		
Description	Undertaking no dedicated further improvements along the A48 corridor except from routine maintenance as and when required to keep route operational.	
How does it tackle the problem?	Do minimum would not help to address any of the problems within the study area.	
Objectives	TP01: To reduce congestion along the A48 during the peak periods, improving journey time and journey time reliability for users.	--
	TP02: To improve the network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through provision of viable journey alternatives for all users	--
	TP03: To increase the number of local journeys taken by sustainable means (active travel, public transport, etc.) utilizing the A48 corridor, and reducing the need to travel.	-
	TP04: To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucester and Monmouthshire	-
	TP05: To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	-
	TP06: To enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	0
Adverse Impacts and Dependencies	If no further improvements are made to the A48 corridor then congestion levels are likely to rise (particularly with the removal of the severn bridge tolls). This could lead to the risks of decreasing air quality, reduced journey times and a lack of ability to develop and achieve targets set within the Local Development Plans for Monmouthshire, Gloucestershire and the Forest of Dean. Economic growth could be slowed.	
Constraints (see plan in IAR Appendix G)	N/A	
Key Risks	Feasibility	-
	Acceptability	--
	Timescales	-
	Risks	-

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