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Chepstow Transport Study: WelTAG Stage 1 Impacts Assessment Report - Final

December 2018

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Project No: CS/095012 Doc Ref:2 Rev: P02

Client: Monmouthshire CC / Gloucestershire CC
Issue Date: December 2018

Chepstow Transport Study:
WelTAG Stage 1
Impacts Assessment Report - Final

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Issue Record

Rev	Date	Description/Comments	Author/Prepared by:	Approved for Issue by:
P01	15/10/18	Draft Report Issue	M.North-Jones	D.James
P02	13/12/18	Final Report	M.North-Jones	D.James

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Contents

Appendices

1. Introduction

In line with WelTAG 2017 Guidance detailed evidence, data and analysis underlying the statements made in the WelTAG Stage Reports, are presented in a separate document known as the WelTAG Impacts Assessment Report (IAR).

This Impacts Assessment Report for the Chepstow Transport Study gathers together all the evidence that has been used to determine and support the appraisal undertaken to recommend a short list of options for further appraisal.

As future stages of the WelTAG process are undertaken, more evidence will be produced and additional sections will be added to this Impacts Assessment Report.

The contents of this Impacts Assessment Report are described in the subsequent chapter of this report.

2. Strategic Outline Case

This Impacts Assessment Report contains the following information to support the appraisal undertaken at Stage 1 of the WelTAG process (Strategic Outline Case), to determine a recommended short-list of options for further appraisal.

This information is presented in the following Appendices:

- Appendix A – Appraisal Note:

  This outlines the methodology used to appraise the options at WelTAG Stage 1 (Strategic Outline Case)

- Appendix B – Workshop Report

  This provides an outline of the WelTAG Stage 1 (Strategic Outline Case) Stakeholder's Workshop undertaken.

- Appendix C – Worksheets 1 to 4:

  - Worksheet 1 – Problems (Long List)
  - Worksheet 2 – Objectives Development – Long List of Objectives
  - Worksheet 3 – Objectives Development – Short List of Objectives
  - Worksheet 4 – Option Development – Long List of Options

- Appendix D – South East Wales Traffic Model (SEWTM) Output

  Summary data from the SEWTM for the Chepstow / A48 corridor area.

- Appendix E – Bus Service Running Time Information

  Summary information on bus services running times for services travelling between Gloucestershire into Chepstow.

- Appendix F – STAG Survey Report

  Severn Tunnel Action Group report outlining the results of a survey undertaken at Severn Tunnel Junction railway station.

- Appendix G – Constraints Map

  Map showing constraints (mainly physical) within the study area.

- Appendix H – Highways England and Welsh Government: Severn Crossing Tolls Model Build and Options Assessment Impact Assessment. 26 October 2018

- Appendix I – Option Drawing

  Plan showing long list of options.

- Appendix J – Worksheet 5 to 11
    - Worksheet 5 - Appraisal of Options against the Wales Transport Strategy Outcomes
    - Worksheet 6 - Appraisal of Options against the Well-being of Future Generations (Wales) Act 2015 Goals
    - Worksheet 7 - Local & Regional Policy Appraisal
    - Worksheet 8 - Appraisal of Scheme Options against Objectives
    - Worksheet 9 - High Level Appraisal of Options (Appraisal Summary Table)
    - Worksheet 10 - Appraisal of Options against Deliverability
    - Worksheet 11 - Summary of Option Appraisal against the Strategic, Transport, & Management Cases
- Appendix K– Addressing Problems

  Appraisal of options in terms of how well they address identified problems within the study area.
- Appendix L – Review Group Comments.

Appendix A
Appraisal Note

Appraisal Methodology Note

This note outlines how appraisal of options at WelTAG stage 1 has been undertaken to ensure consistency.

Appraisal – National / Regional / Local level

In line with WelTAG stage 1 guidance an interventions fit to National, Local and Regional policy has been assessed. This has included assessment of each individual option against the strategic fit, outcomes / goals or objectives of the following policy documents:

- Planning Policy Wales (Planning Policy Wales Ed 10)
- One Wales: Connecting the Nation (Wales Transport Strategy, 2006) and emerging Wales Transport Strategy;
- Active Travel (Wales) Act (2013)
- National Development Framework (Anticipated Publication – 2020)
- Wales Spatial Plan, 2008
- National Transport Finance Plan (updated 2017)
- Well-being of Future Generations (Wales) Act 2015
- Prosperity for All: Economic Action Plan: 2018
- Cardiff Capital City Region (objectives)
- Local Transport Plan / Local Development Plan for Monmouthshire CC, Gloucestershire CC and Forest of Dean District Council
- Monmouthshire Public Service Board Well Being Plan (2018)
- Monmouthshire County Council Corporate Business Plan (2017 – 2022)

Scheme specific objectives have also been formed, based upon information gathered via stakeholder engagement regarding problems within the study area. Each objective reflects a specific objective that any intervention implemented within the study area should aim to achieve so that identified problems can be addressed. Objectives have been assessed to establish fit with WTS objectives and wellbeing objectives.

Objectives are as follows:

1. To reduce congestion along the A48 during the peak periods, improving journey times and journey time reliability for users;
2. To improve network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through the provision of viable journey alternatives for all users;
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;
4. To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucestershire and Monmouthshire
5. To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48
6. Enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor.

Deliverability and risks have also been identified at a very high level for each of the options proposed. This is based on existing or known data at the time of the Stage 1 appraisal. Further work

would be undertaken at future WelTAG stages which would help to inform the process of identifying risks and enable better understanding of the deliverability of options.

Deliverability was assessed in terms of:

- Technical Deliverability – This included looking at aspects including an interventions ability to be technically or operationally delivered, with consideration given to elements such as Land Constraints.
- Affordability – Considering (if known) potential capital investment or any long term revenue cost implications;
- Acceptability – Of the intervention to the public and politically;
- Timescales – Possible timescales for implementation and preparation works (no time bandings were applied and ratings for timescales do not tie to the Local Transport Plan timescales)
- Risks – Known potential risks to an intervention.

Evidence Base

At stage 1 much of the appraisal undertaken is qualitative. Quantitative data is only utilised where it is existing within reports, previous surveys or publically available data sets.

Assessment Scale

A seven point likert scale was adopted for the appraisal of options (as detailed in WelTAG Guidance 2017):

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

As most of the appraisal undertaken at this stage is qualitative, bandings for each assessment criteria have not been developed. At stage 2 when quantitative data is available, if required and appropriate, scales for each of the seven assessment ranges for individual assessment criteria could be developed.

The impacts of a scheme, the scale of the impacts, where and when they will occur and who will experience them has also been stated when appraising Transport Case elements.

Weighting

No weighting has been applied to any of the assessment criteria. An options ability to address problems via the identified objectives and an options deliverability have played an important role in differentiating schemes. However, all appraisal criteria has been considered in making the overall

recommendation for those schemes to be taken forward for further appraisal work at WelTAG Stage 2.

Validation Process

Appraisal of each option against appraisal criteria has been undertaken by a Senior Transport Planning professional with WelTAG appraisal experience alongside engineering professionals.

The results of the appraisal have then been checked and approved by a second Senior Transport Planning professional and engineering professional with relevant WelTAG experience.

Appraisal results were lastly checked and approved by Monmouthshire CC and Gloucestershire CC officers before being presented to the independent review group for comment.

Appendix B
Workshop Report

Chepstow Transport Study WelTAG Workshop

Strategic Outline Case

Stakeholders' Workshop Report

The Stakeholders' Workshop for Chepstow Transport Study WelTAG Workshop was held on 24th April 2018 at the Chepstow Town Council Offices. The attendees were as follows:

Name	Organisation
Mark Emmett	Welsh Government
Alison Thomas	Welsh Government
Christian Schmidt	Monmouthshire County Council
Paul Keeble	Monmouthshire County Council
Roger Hoggins	Monmouthshire County Council
Mark Hand	Monmouthshire County Council
Brian Watkins	Gloucestershire County Council
Luisa Senft-Hayward	Gloucestershire County Council
Peter Williams	Forest of Dean District Council
Nigel Gibbons	Forest of Dean District Council
Cllr David Dovey	Monmouthshire County Council
Mark Davies	Monmouthshire County Council
Michelle North-Jones	Capita
Callan Burchell	Capita

Aims of the Workshop

1. To determine what problems or issues there are within the Study Area.
2. To develop objectives that possible solutions to the problems or issues can be appraised against.
3. To develop a long list of possible solutions that will seek to address the problems or issues that had been identified.
4. Discussion of cross-border schemes and finance options.

WelTAG 2017

WelTAG 2017 was briefly described, including the five stages, Strategic Outline Case (Stage 1), Outline Business Case (Stage 2), Full Business Case (Stage 3), Implementation (Stage 4), and Post-Implementation (Stage 5). It was stated that the Chepstow Transport Study project was to be taken to the end of Stage 1, the identification of a short-list of options for further appraisal.

Workshop Groups

The attendees were split into three groups for the undertaking of the three tasks. The composition of the groups was as follow:

Group 1	Group 2	Group 3
Mark Emmett	Alison Thomas	Christian Schmidt
Paul Keeble	Peter Williams	Nigel Gibbons
Mark Hand	Brian Watkins	Luisa Senft-Hayward
Paul White	Roger Hoggins	James Woodcock
		Mark Davies
		Cllr David Dovey

Workshop Programme

Task 1: Identification of Problems and Issues within the Study Area.

Task 2: Development of Objectives against which Solutions can be measured.

Task 3: Development of Solutions.

Task 4: Discussion of cross-border schemes and finance options

Each task lasted approximately 30 minutes, which was followed by a 15 minute discussion on the output from each group.

Workshop Output

The workshop output has been included in the Strategic Outline Business Case report in worksheets 1-4 (Appendix C of the Impacts Assessment Report).

Image from Workshop

Appendix C
Worksheets 1 to 4

Worksheet 1: Problems and Issues (Long List)

Ref	Theme	Description	Source
1	Highway operation	Congestion along A48: Eastbound congestion worse in evening, Westbound congestion worse in morning.	Workshop 24/04/18
2	Highway operation	Congestion at High Beech/A466 roundabout.	Workshop 24/04/18
3	Highway operation	Current rat runs in operation which utilise old Wye crossing bridge and B4228.	Workshop 24/04/18
4	Highway operation	Network resilience - if the A48 crossing is closed very few alternatives for crossing the Wye.	Workshop 24/04/18
5	Highway operation / Safety	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.	Workshop 24/04/18
6	Highway operation / Social	Growth in South Gloucester and Bristol placing pressure on traffic levels on A48.	Workshop 24/04/18
7	Highway Operation	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.	Neil Troughton (GCC) email 11/05/18
8	Environmental	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.	Workshop 24/04/18
9	Environmental	Mineral deposits could effect line of any potential alternative road routes.	Workshop 24/04/18
10	Highway operation / Social	Housing growth - expanding local communities in Chepstow and wider South East Monmouthshire will place greater pressure on the existing highway network.	Workshop 24/04/18 and meeting with MCC 2/08/18
11	Social	Lack of connectivity across the Wye and across the A48.	Workshop 24/04/18
12	Social	Toll removal could make traffic flows on A48 higher due to cheaper housing in Chepstow and South East Monmouthshire – could encourage Bristol commuters etc.	Workshop 24/04/18
13	Social	Chepstow severance - communities within Chepstow split by Wye River and A48.	Workshop 24/04/18
14	Social	River Wye limits access for communities across the river.	Workshop 24/04/18
15	Public Transport	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.	Workshop 24/04/18 / Rob Niblett (GCC) 11/05/18
16	Public Transport	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.	Workshop 24/04/18 / Rob Niblett (GCC) 11/5/18
17	Public Transport	Bus network shrinking – no rail station service.	Workshop 24/04/18
18	Public Transport	Lack of rail/bus alternatives.	Workshop 24/04/18
19	Public Transport	Buses - low frequency along A48, many are for local routes only.	Workshop 24/04/18
20	Public Transport	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.	Alan Bennett (email 9/5/2018)
21	Access / Public Transport	Lack of alternative routes and travel options to use of private car within study area and traveling to and from study area.	Workshop 24/04/18
22	Economic	Potential to restrict future developments due to lack of access and congestion on A48.	Workshop 24/04/18
23	Economic	Any Chepstow scheme not identified in Welsh Government National Transport Finance Plan, therefore gaining funding for any solution may be problematic.	Workshop 24/04/18
24	Economic	Development pressures on Monmouthshire and Gloucestershire side of A48. Within Monmouthshire about to start process of producing new Local Development Plan.	Workshop 24/04/18
25	Economic	Potential development of the Beachley camp (impact on A48 traffic levels).	Workshop 24/04/18
26	Economic	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.	Workshop 24/04/18
27	Economic	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).	Workshop 24/04/18
28	Governance / Political	Different highway authorities for A48 (MCC and South Gloucestershire, plus Welsh Government and Highways England).	Workshop 24/04/18
29	Governance / Political	Cross border issues as A48 cross Wales and England and different local authority boundaries. These have separate agencies and priorities.	Workshop 24/04/18
30	Active Travel	Poor for walking/cycling (A48 esp.).	Workshop 24/04/18
31	Active Travel / Safety	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.	Workshop 24/04/18 / Sustrans meeting 8/5/2018
32	Active Travel	Topography - especially at Hardwick Hill area. Likely to discourage cycling to and from some trip generators / destinations in Chepstow.	Sustrans meeting 8/5/2018
33	Active Travel	Area around A48 is constrained limiting the amount of new cycle infrastructure that can be implemented. Walking infrastructure and improvements maybe easier to provide.	Sustrans meeting 8/5/2018
34	Parking	Limited parking at Chepstow.	Workshop 24/04/18

Worksheet 2: Objective Development - Long List of Objectives

Ref	Theme	Objective	Source
HO 1	Highway operation	To reduce traffic using A48 through Chepstow and south Gloucestershire	Workshop 24/04/18
HO 2	Highway operation	Creation of an alternative route to the existing A48	Workshop 24/04/18
HO 3	Highway operation	To improve journey times & reliability on A48	Workshop 24/04/18
HO 4	Highway operation	To reduce congestion (and reduce journey times) along A48	Workshop 24/04/18
HO 5	Highway operation	Improve network resilience along A48	Workshop 24/04/18
HO6	Highway operation	To provide a highway network within South East Monmouthshire that is appropriate for the future needs of local communities	Meeting with MCC 02/08/18
EN 1	Environmental	Improve air quality along A48	Workshop 24/04/18
EN 2	Environmental	To improve air quality through the creation of public transport alternatives/walking cycling routes	Workshop 24/04/18
AT 1	Active Travel	Encourage uptake of active/alternative travel modes for journeys along the A48	Workshop 24/04/18
AT 2	Active Travel / Reducing the need to travel	Find ways of reducing short local car journeys along A48 e.g. school traffic, local shopping, work etc.	Workshop 24/04/18
RNT 1	Reducing the need to travel	To balance the provision of new housing and employment to reduce need to travel	Workshop 24/04/18
PT 1	Public Transport	Increase the use of public transport within the study area	Workshop 24/04/18
PT 2	Public Transport	Development of public transport alternatives to give modal choice- co-ordination	Workshop 24/04/18
PT 3	Public Transport	To provide better bus/rail interchange	Workshop 24/04/18
PR 1	Park and Ride / Park and Share	To increase the number of users utilising park & share/ride as an alternative to private car along A48	Workshop 24/04/18
GOV 1	Governance / Political	To Improved cross – border working and ownership of issues	Workshop 24/04/18
GOV 2	Governance / Political	To recognise and address the uniqueness of implementing a cross border solution by ensuring cross border stakeholder buy in.	Workshop 24/04/18
EC 1	Economic	Enable development/economic growth, unlocking potential housing and employment development	Workshop 24/04/18
SOC 1	Social	Improve access to major / key locations along A48	Workshop 24/04/18
SOC 2	Social	Improve access to local destinations along A48	Workshop 24/04/18
SOC 3	Social / Safety	To reduce severance of A48 and improve perceived levels of safety	Workshop 24/04/18

Worksheet 3: Objective Development - Short-List of Objectives

Ref	Long-list ref	Statement/Objective	Comments and relationship to Problems and Issues (Worksheet 1)
1	HO1 to HO4, EN1	To reduce congestion along the A48 during the peak periods, improving journey times and journey time reliability for users	(1) Congestion along A48: Eastbound congestion worse in evening, Westbound congestion worse in morning. (2) Congestion at High Beech/A466 roundabout. (3) Current rat runs in operation which utilise old Wye crossing bridge and B4228. (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. (11) Toll removal could make traffic flows on A48 higher due to cheaper housing in Chepstow – could encourage Bristol commuters etc.
2	HO5	To improve network resilience on the A48 transport corridor between Gloucestershire and Monmouthshire through the provision of viable journey alternatives for all users	(4) Network resilience - if the A48 crossing is closed very few alternatives for crossing the Wye. (6) Growth in South Gloucester and Bristol placing pressure on traffic levels on A48. (9) Housing growth- expanding local communities in Chepstow and Gloucestershire. (10) Lack of connectivity across the Wye and across the A48. (12) Chepstow severance - communities within Chepstow split by Wye River and A48. (13) River Wye limits access for communities across the river.
3	AT1, AT2, RNT 1	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	(28) Poor for walking/cycling (A48 esp.). (29) A48 Pedestrian safety - perception that unsafe to walk along A48 especially at river crossing causing a severance feature.
4	PT1-3, PR 1	To provide the opportunity to increase the usage of public transport for strategic journeys made within the A48 corridor between Gloucestershire and Monmouthshire	(14) No direct Chepstow – Bristol train. (15) Rail – service to Bristol especially needs to improve (increase in frequency) not reduce. (16) Bus network shrinking – no rail station service. (17) Lack of rail/bus alternatives. (18) Buses - low frequency along A48, many are for local routes only.
5	SOC1-3	To improve access and economic links to local and strategic locations (including Bristol and Cardiff) served by the A48	(9) Housing growth- expanding local communities in Chepstow and Gloucestershire. (19) Lack of alternative routes and travel options to use of private car within Study area and traveling to and from study area.
6	EC 1	Enable economic development and growth through unlocking housing and employment development opportunities within the A48 corridor	(10) Ability of local roads to accommodate future traffic flows resulting from the expansion of communities (20) Potential to restrict future developments due to lack of access and congestion on A48. (22) Development pressures on Monmouthshire and Gloucestershire side of A48. Within Monmouthshire about to start process of producing new Local Development Plan. (23) Potential development of the Beachley camp (impact on A48 traffic levels).

NOTES

Recognising and addressing the uniqueness of implementing a cross border solution and ensuring cross border stakeholder buy in is viewed as key.

However this has not be set as a specific objective as this would be difficult to monitor and measure. Instead it will be developed as a theme throughout the appraisal process and highlighted within the strategic case.

An objective on safety and air quality have not be included. Each potential option will be appraised against WTS Outcomes and Appraisal Summary Criteria as part of the transport case which will include assessing user safety and air quality impacts. It is also hoped that if Objective 1 was achieved then a reduction in congestion would lead to an improvement in air quality.

A specific objective on Park and Share / P& R has not be included as this is encompassed within Objective 4 - improving public transport provision.

Worksheet 4: Option Development - Long List of Options

Ref	Option Title	Description	Source	Theme
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	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 Tutshil, 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. 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.	Workshop 24/4/2018	Highway Improvements (New highways)
2	Chepstow Bypass – Beachley and Sedbury	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. 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. 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. 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.	Workshop 24/4/2018	Highway Improvements (New highways)
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)
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 a1.5 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
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 facilitate.	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

Appendix D

South East Wales Traffic Model (SEWTM) Output

Chepstow Station (rail passengers) - 2015 Base Year Modelled

	2015 AM	2015 IP	2015 PM	2026 AM	2026 IP	2026 PM	2036 AM	2036 IP	2036 PM
Boarding	33	11	19	33	12	21	33	12	22
Alighting	23	12	32	27	15	30	28	15	31

Flow on link south-west of Chepstow - 2015

	2015 AM Observed	2015 AM Modelled	2015 IP Observed	2015 IP Modelled	2015 PM Observed	2015 PM Modelled
Northboun	58	71	55	56	102.5	106
Southboun	-	75	-	51	-	68

Forecast Flows

	2026 AM	2026 IP	2026 PM	2036 AM	2036 IP	2036 PM
Northbound	110	85	132	120	95	153
Southbound	76	53	75	82	59	83

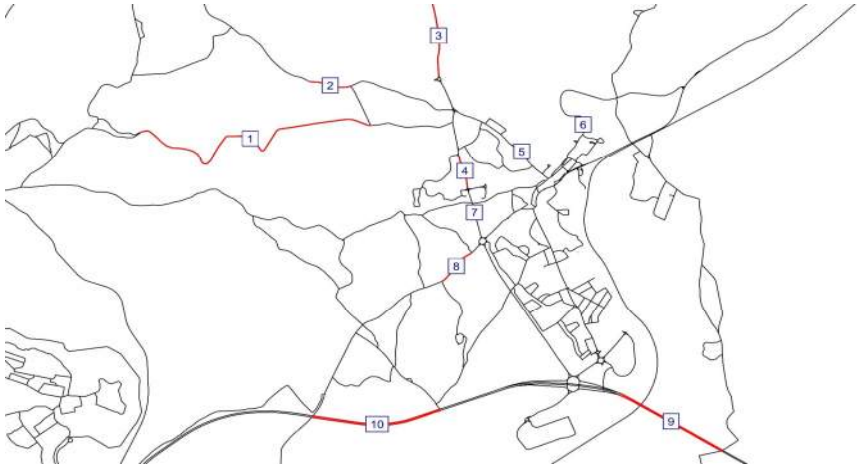
Time Periods

Time Period	Period	Assignment Type	Assignment Hour	Hway Factor	Bus Factor	Rail Factor
AM	07:00-09:30	Peak	07:45-08:45	2.20	2.00	1.84
IP	09:30-15:30	Average	Average	6.00	6.00	6.00
PM	15:30-18:00	Peak	16:30-17:30	2.38	2.82	2.08

All data presented is hourly

2015 Base Year Modelled Bus Flows

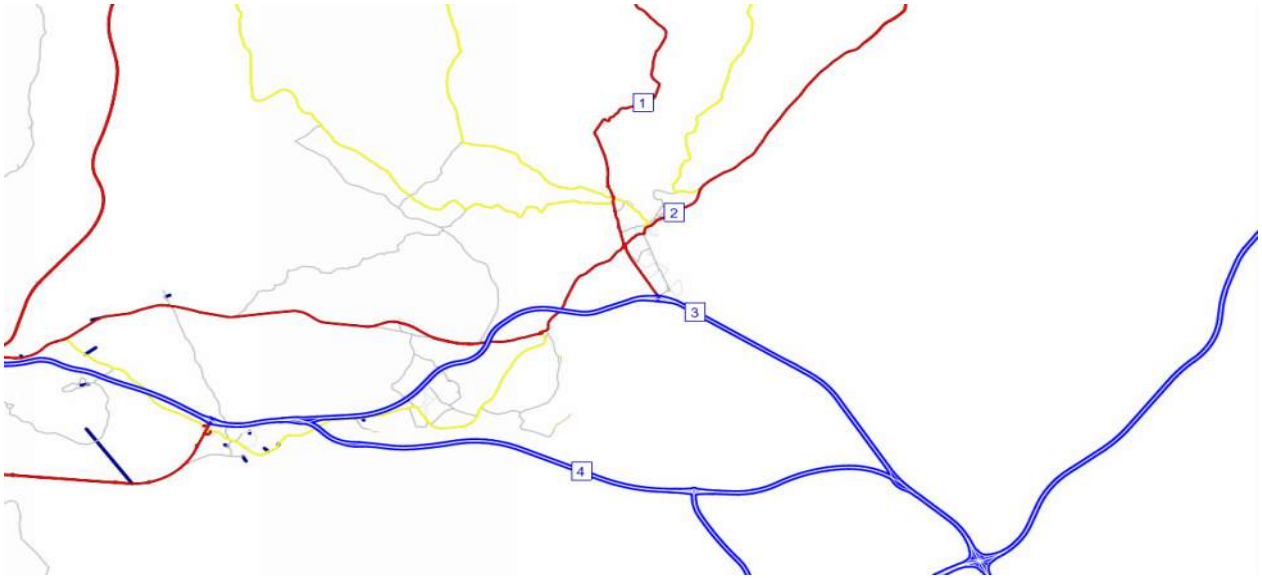
	2015			2026			2036		
Location	AM (1hr)	IP av (1hr)	PM (1hr)	AM (1hr)	IP av (1hr)	PM (1hr)	AM (1hr)	IP av (1hr)	PM (1hr)
01 Eastbound	19	4	1	20	4	1	21	4	1
01 Westbound	17	5	5	16	5	5	16	5	5
02 Eastbound	10	4	2	10	3	2	10	3	2
02 Westbound	3	4	7	3	4	6	3	4	6
03 Northbound	5	8	3	4	8	3	4	8	3
03 Southbound	20	1	4	22	1	4	24	1	4
04 Northbound	5	17	16	5	17	15	6	17	15
04 Southbound	7	9	4	8	8	4	8	7	4
05 Northwestbound	19	1	1	18	1	1	18	1	1
05 Southeastbound	44	1	3	47	1	2	49	1	2
06 Northbound	0	0	0	0	0	0	0	0	0
06 Southbound	0	0	0	0	0	0	0	0	0
07 Northbound	5	17	13	5	17	12	5	18	12
07 Southbound	8	9	3	9	8	3	10	8	3
08 Northeastbound	25	11	11	34	13	16	37	13	16
08 Southwestbound	20	10	11	24	11	14	26	12	15
09 Northwestbound	24	16	2	27	17	2	27	18	2
09 Southeastbound	29	2	0	34	2	0	33	2	0
10 Eastbound	6	4	8	6	4	8	7	4	8
10 Westbound	25	19	3	33	22	5	35	23	5



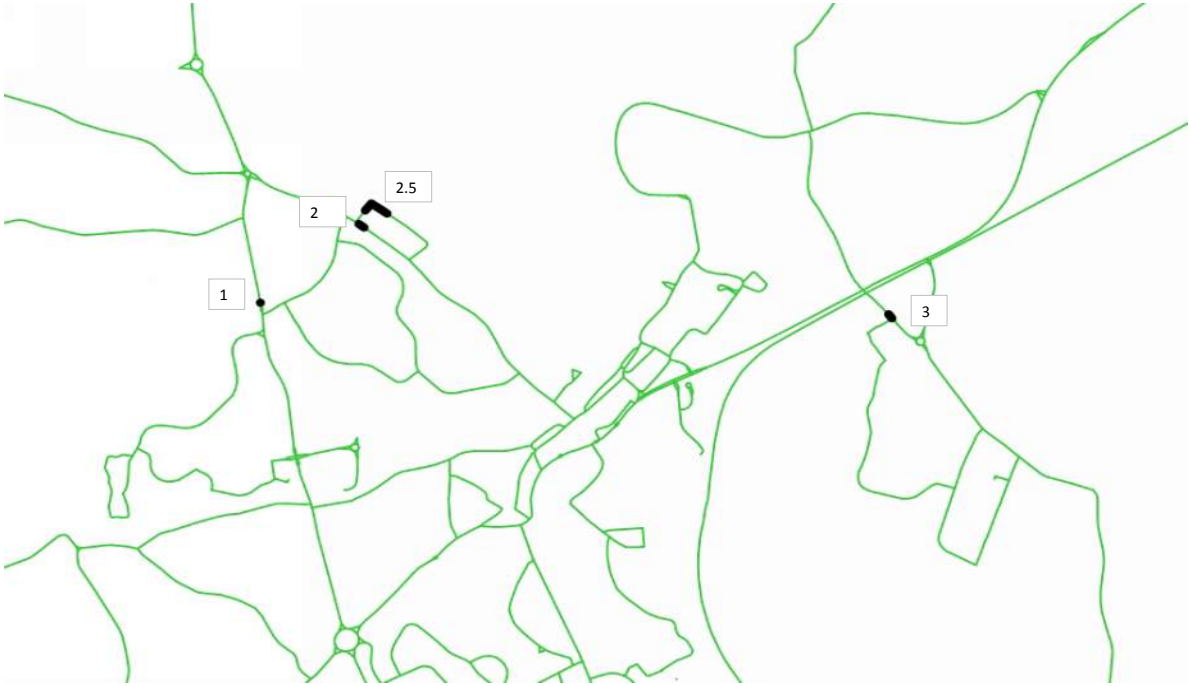
Highway Calibration Counts (Observed) vs Modelled - 2015 Base Year

All of these links are calibration links

						All vehicles							Cars						
Time	Location	# on diagram below	Direction	Link ID	Count Type	Observed	Modelled	Absolute Diff	% Diff	GEH	DfT Criteria Category	Pass/Fail	Observed	Modelled	Absolute Diff	% Diff	GEH	DfT Criteria Category	Pass/Fail
AM (1hr)	A466 - Wyndcliff Wood (St Arvans)	1	Southbound	22075921	Temp - M4	182	411	229	126%	13.3	0	FAIL	162	162	0	0%	0.0	1	PASS
AM (1hr)	A48, River Wye Bridge, Chepstow	2	Westbound	21633760	ATC/MCC	977	939	-38	-4%	1.2	1	PASS	869	770	-99	-11%	3.5	1	PASS
AM (1hr)	M48 J1-2	3	Westbound	21614835	TrafficWales	310	358	48	16%	2.7	1	PASS	241	310	69	28%	4.1	1	PASS
AM (1hr)	M4 J22-23a	4	Westbound	21612373	TrafficWales	2034	1894	-140	-7%	3.2	1	PASS	1181	1197	16	1%	0.5	1	PASS
AM (1hr)	A466 - Wyndcliff Wood (St Arvans)	1	Northbound	22075921	Temp - M4	139	159	20	14%	1.6	1	PASS	120	123	3	2%	0.2	1	PASS
AM (1hr)	A48, River Wye Bridge, Chepstow	2	Eastbound	21633760	ATC/MCC	609	0	-609	-100%	34.9	0	FAIL	526	0	-526	-100%	32.4	0	FAIL
AM (1hr)	M48 J1-2	3	Eastbound	21614836	TrafficWales	1244	1201	-43	-3%	1.2	1	PASS	735	788	53	7%	1.9	1	PASS
AM (1hr)	M4 J22-23a	4	Eastbound	21612374	TrafficWales	2592	2556	-36	-1%	0.7	1	PASS	1640	1633	-7	0%	0.2	1	PASS
IP av (1hr)	A466 - Wyndcliff Wood (St Arvans)	1	Southbound	22075921	Temp - M4	126	187	61	49%	4.9	1	PASS	103	105	2	2%	0.2	1	PASS
IP av (1hr)	A48, River Wye Bridge, Chepstow	2	Westbound	21633760	ATC/MCC	674	683	9	1%	0.3	1	PASS	550	533	-17	-3%	0.7	1	PASS
IP av (1hr)	M48 J1-2	3	Westbound	21614835	TrafficWales	345	395	50	15%	2.6	1	PASS	188	233	45	24%	3.1	1	PASS
IP av (1hr)	M4 J22-23a	4	Westbound	21612373	TrafficWales	1719	1706	-13	-1%	0.3	1	PASS	924	987	63	7%	2.0	1	PASS
IP av (1hr)	A466 - Wyndcliff Wood (St Arvans)	1	Northbound	22075921	Temp - M4	129	177	48	37%	3.9	1	PASS	108	112	4	3%	0.3	1	PASS
IP av (1hr)	A48, River Wye Bridge, Chepstow	2	Eastbound	21633760	ATC/MCC	563	0	-563	-100%	33.5	0	FAIL	473	0	-473	-100%	30.8	0	FAIL
IP av (1hr)	M48 J1-2	3	Eastbound	21614836	TrafficWales	502	519	17	3%	0.8	1	PASS	315	340	25	8%	1.4	1	PASS
IP av (1hr)	M4 J22-23a	4	Eastbound	21612374	TrafficWales	2069	2089	20	1%	0.4	1	PASS	1060	1121	61	6%	1.8	1	PASS
PM (1hr)	A466 - Wyndcliff Wood (St Arvans)	1	Southbound	22075921	Temp - M4	164	190	26	16%	2.0	1	PASS	137	140	3	2%	0.3	1	PASS
PM (1hr)	A48, River Wye Bridge, Chepstow	2	Westbound	21633760	ATC/MCC	877	809	-68	-8%	2.3	1	PASS	733	674	-59	-8%	2.2	1	PASS
PM (1hr)	M48 J1-2	3	Westbound	21614835	TrafficWales	944	995	51	5%	1.6	1	PASS	658	741	83	13%	3.1	1	PASS
PM (1hr)	M4 J22-23a	4	Westbound	21612373	TrafficWales	2818	2847	29	1%	0.6	1	PASS	1998	2092	94	5%	2.1	1	PASS
PM (1hr)	A466 - Wyndcliff Wood (St Arvans)	1	Northbound	22075921	Temp - M4	187	239	52	28%	3.5	1	PASS	166	181	15	9%	1.2	1	PASS
PM (1hr)	A48, River Wye Bridge, Chepstow	2	Eastbound	21633760	ATC/MCC	817	0	-817	-100%	40.4	0	FAIL	724	0	-724	-100%	38.1	0	FAIL
PM (1hr)	M48 J1-2	3	Eastbound	21614836	TrafficWales	547	590	43	8%	1.8	1	PASS	447	488	41	9%	1.9	1	PASS
PM (1hr)	M4 J22-23a	4	Eastbound	21612374	TrafficWales	2092	2065	-27	-1%	0.6	1	PASS	1264	1303	39	3%	1.1	1	PASS
OP av (1hr)	A466 - Wyndcliff Wood (St Arvans)	1	Southbound	22075921	Temp - M4	37	55	18	49%	2.7	1	PASS							
OP av (1hr)	A48, River Wye Bridge, Chepstow	2	Westbound	21633760	ATC/MCC	156	211	55	35%	4.1	1	PASS							
OP av (1hr)	M48 J1-2	3	Westbound	21614835	TrafficWales	101	111	10	10%	1.0	1	PASS							
OP av (1hr)	M4 J22-23a	4	Westbound	21612373	TrafficWales	504	489	-15	-3%	0.7	1	PASS							
OP av (1hr)	A466 - Wyndcliff Wood (St Arvans)	1	Northbound	22075921	Temp - M4	38	54	16	43%	2.4	1	PASS							
OP av (1hr)	A48, River Wye Bridge, Chepstow	2	Eastbound	21633760	ATC/MCC	142	0	-142	-100%	16.9	0	FAIL							
OP av (1hr)	M48 J1-2	3	Eastbound	21614836	TrafficWales	147	149	2	1%	0.2	1	PASS							
OP av (1hr)	M4 J22-23a	4	Eastbound	21612374	TrafficWales	607	612	5	1%	0.2	1	PASS							



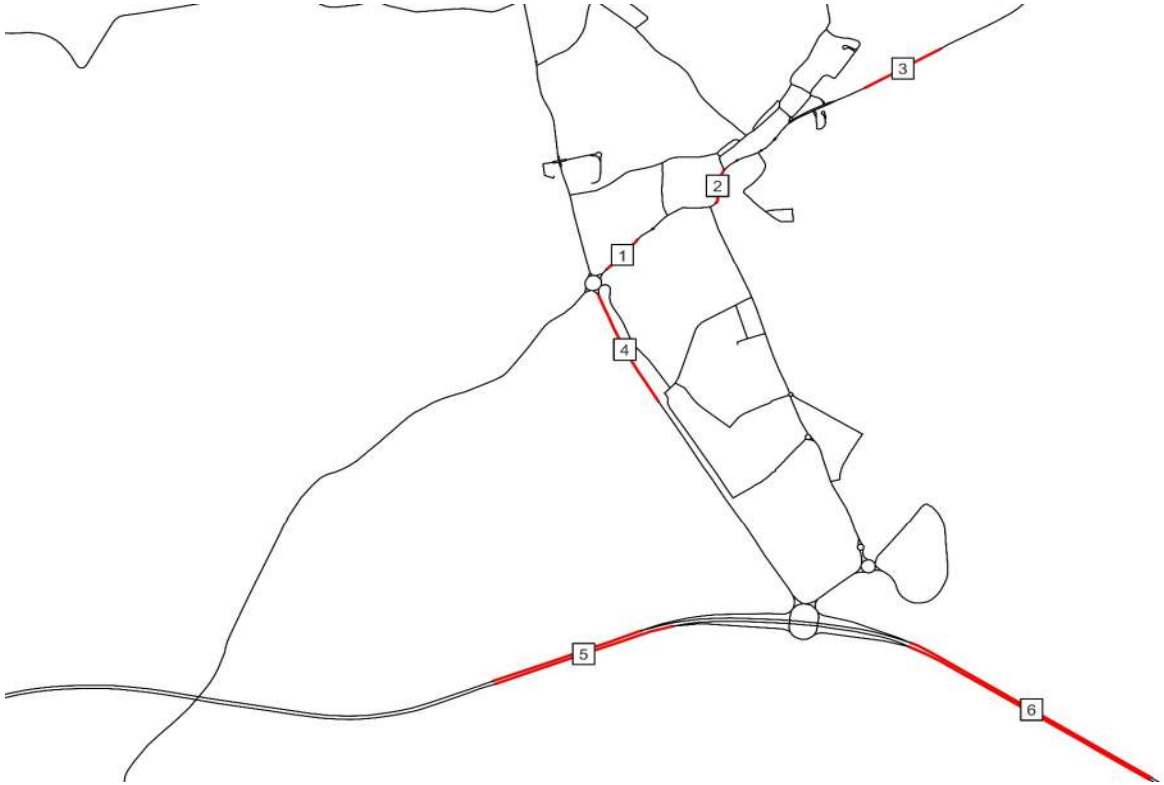
Bus Calibration



		AM		IP		PM	
Site	Direction	Count	Model	Count	Model	Count	Model
1	South	14	6.8	5.5	8.748	0	3.82
1	North	4	5.169	9.833333	16.842	14	16.034
2	Southeast	7.42	17.088	4.333333	0.997	3.04	0.605
2	Northwest	36	19.249	0	0	0	0
2.5	East	18.55	25.294	0	0	0	0
3	Southeast		0	7.682	0	0	0
3	Northwest	6	0	12.33333	0	0	0

2015 Modelled Highway Flows

	2015					
	AM (1hr)		IP av (1hr)		PM (1hr)	
Location	All vehicles	Cars	All vehicles	Cars	All vehicles	Cars
1 Eastbound	278	244	135	94	167	149
1 Westbound	364	252	516	416	642	571
2 Northeastbound	289	235	166	125	201	176
2 Southwestbound	847	674	730	544	892	739
3 Eastbound	0	0	0	0	0	0
3 Westbound	939	770	683	534	809	674
4 Northbound	414	359	369	229	792	630
4 Southbound	1013	661	650	491	758	665
5 Eastbound	432	415	147	133	302	296
5 Westbound	479	431	428	337	485	432
6 Northwestbound	358	310	395	233	995	741
6 Southeastbound	1201	788	519	341	591	489



Appendix E
Bus Service Running Time Information

Running Time Analysis

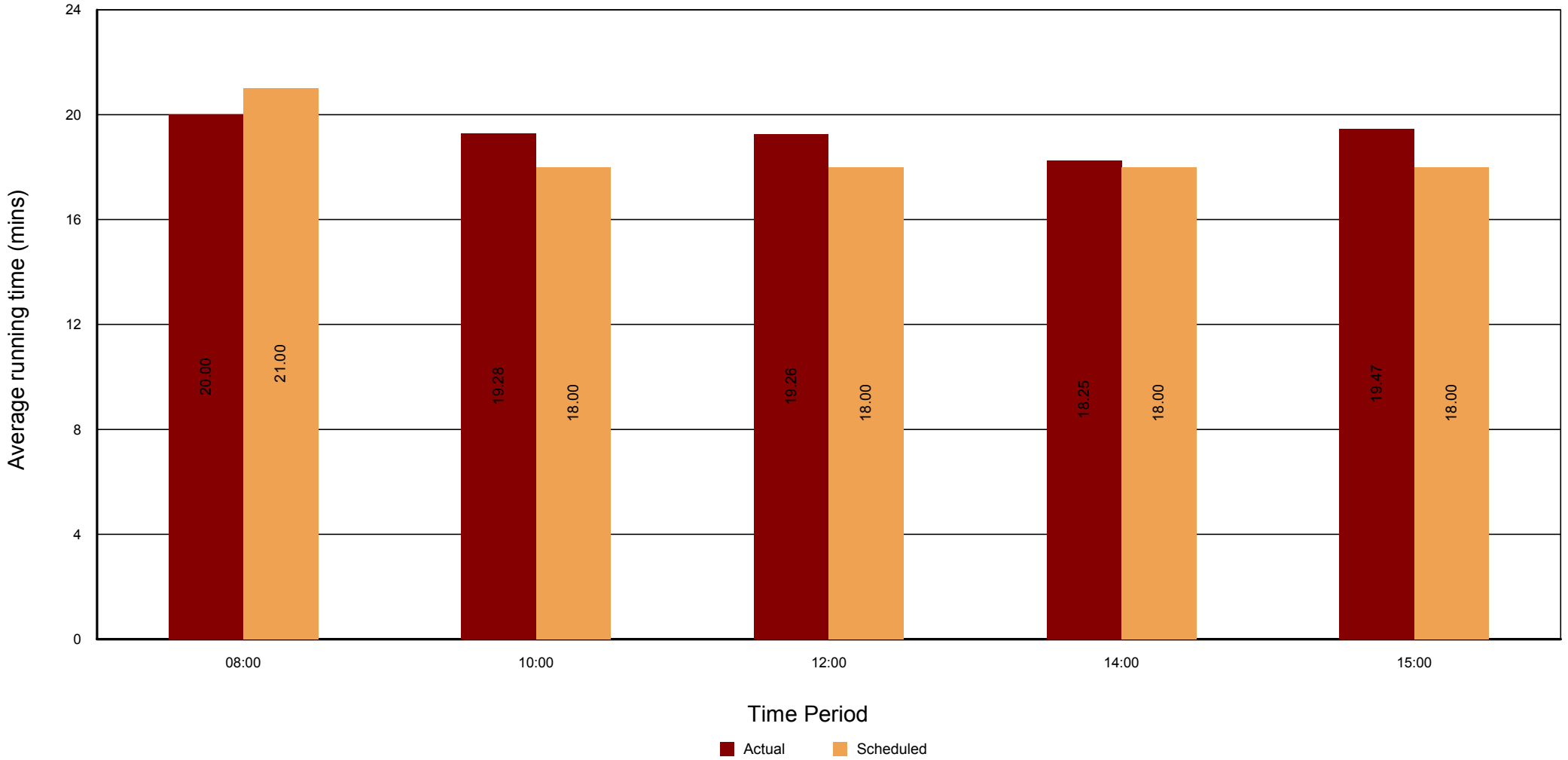
Date Range: 05/02/2018 - 09/05/2018 | Schedule: All | Service: JB 761 a Beachley Barracks Families Office - Bus Station

Time Range: 00:00:00 - 23:59:59 | Operator: All | Vehicle: All

Week Days: All | Depot: All | Run Board: All | Min. Tracked: All

From:1600GLF766 - Barracks Families Office To:5330AWB35134 - Tesco

Direction: Outbound **Week Day**: Monday - Friday **Route**: Beachley Barracks Families Office - Bus Station **Schedule**: James Bevan - April 2017



Running Time Analysis

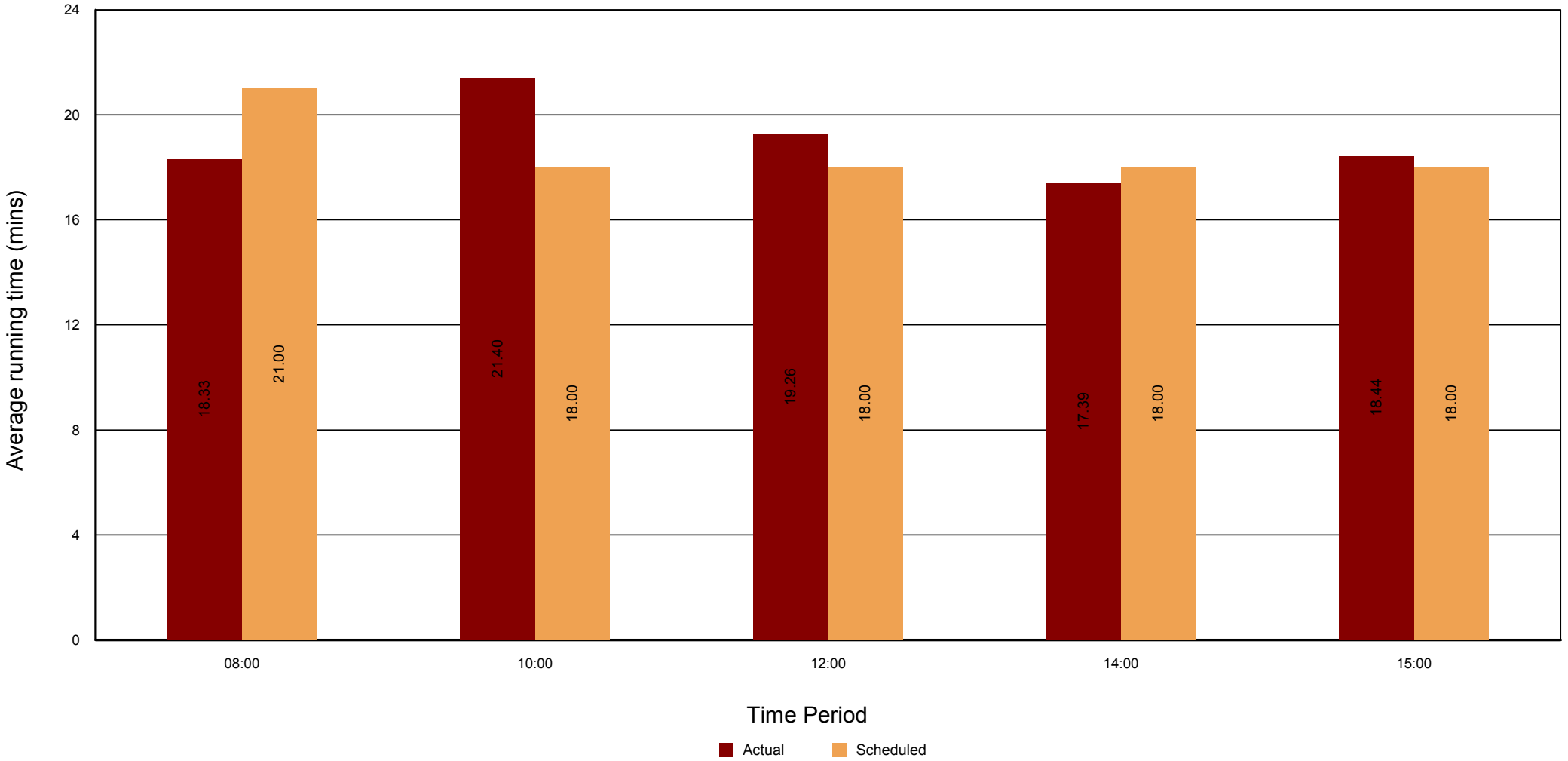
Date Range: 05/02/2018 - 09/05/2018 | Schedule: All | Service: JB 761 a Beachley Barracks Families Office - Bus Station

Time Range: 00:00:00 - 23:59:59 | Operator: All | Vehicle: All

Week Days: All | Depot: All | Run Board: All | Min. Tracked: All

From:1600GLF766 - Barracks Families Office To:5330AWB35134 - Tesco

Direction: Outbound **Week Day**: Saturday **Route**: Beachley Barracks Families Office - Bus Station **Schedule**: James Bevan - April 2017



Running Time Analysis

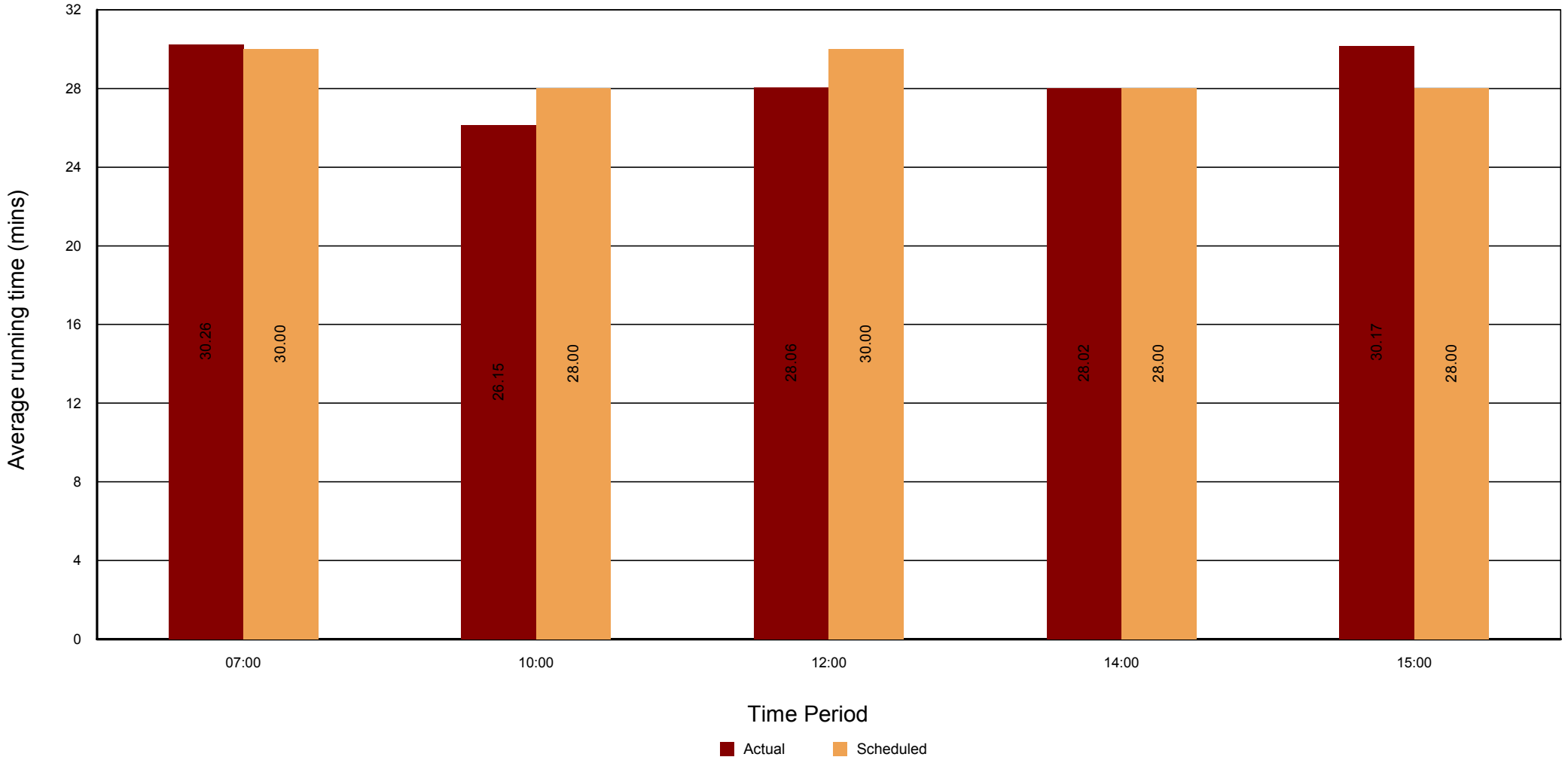
Date Range: 05/02/2018 - 09/05/2018 | Schedule: All | Service: JB 761 a Beachley Barracks Families Office - Bus Station

Time Range: 00:00:00 - 23:59:59 | Operator: All | Vehicle: All

Week Days: All | Depot: All | Run Board: All | Min. Tracked: All

From:5330AWB35134 - Tesco To:1600GLF766 - Barracks Families Office

Direction: Inbound **Week Day**: Monday - Friday **Route**: Beachley Barracks Families Office - Bus Station **Schedule**: James Bevan - April 2017



Running Time Analysis

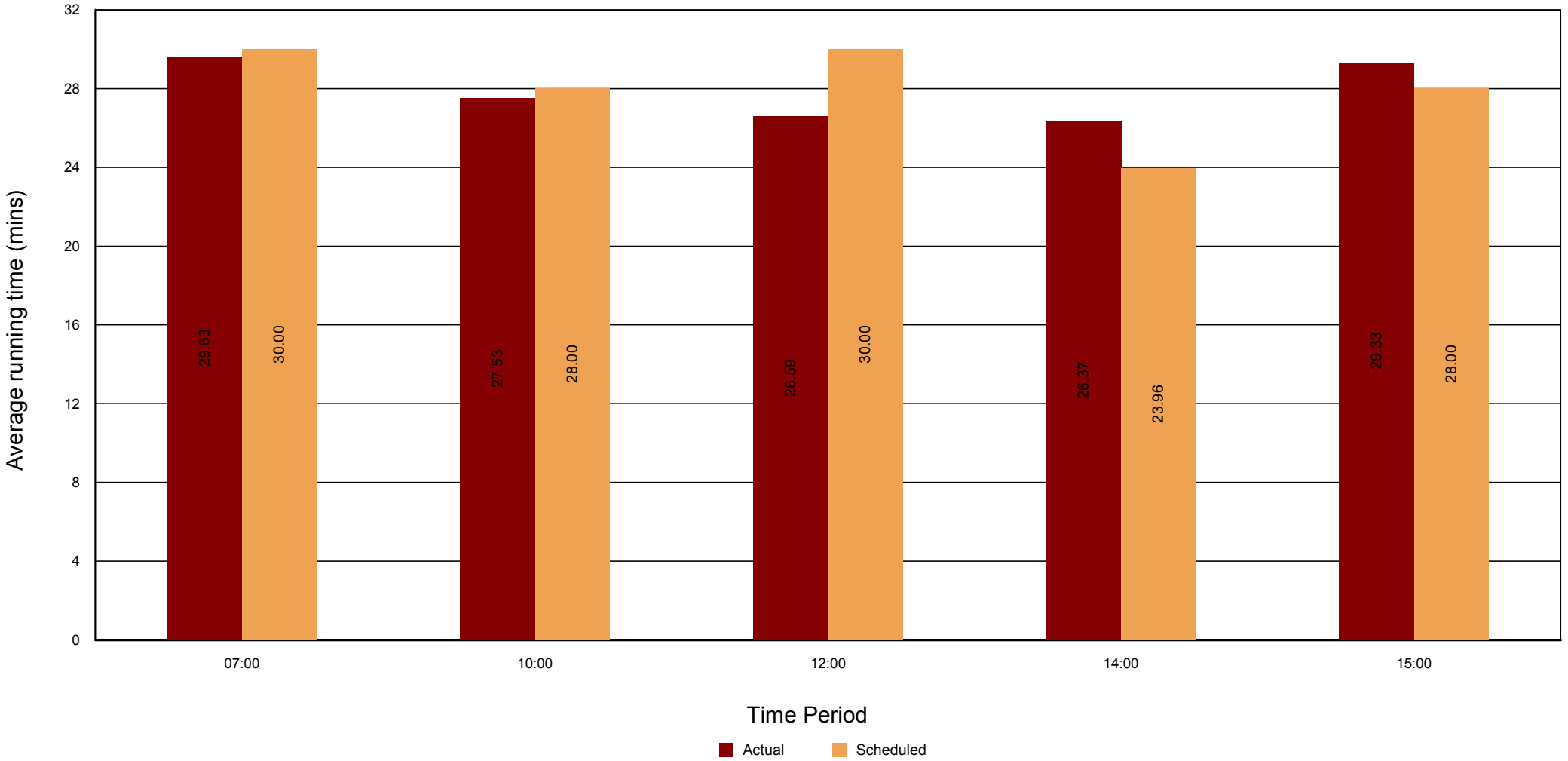
Date Range: 05/02/2018 - 09/05/2018 | Schedule: All | Service: JB 761 a Beachley Barracks Families Office - Bus Station

Time Range: 00:00:00 - 23:59:59 | Operator: All | Vehicle: All

Week Days: All | Depot: All | Run Board: All | Min. Tracked: All

From:5330AWB35134 - Tesco To:1600GLF766 - Barracks Families Office

Direction: Inbound **Week Day**: Saturday **Route**: Beachley Barracks Families Office - Bus Station **Schedule**: James Bevan - April 2017



Running Time Analysis

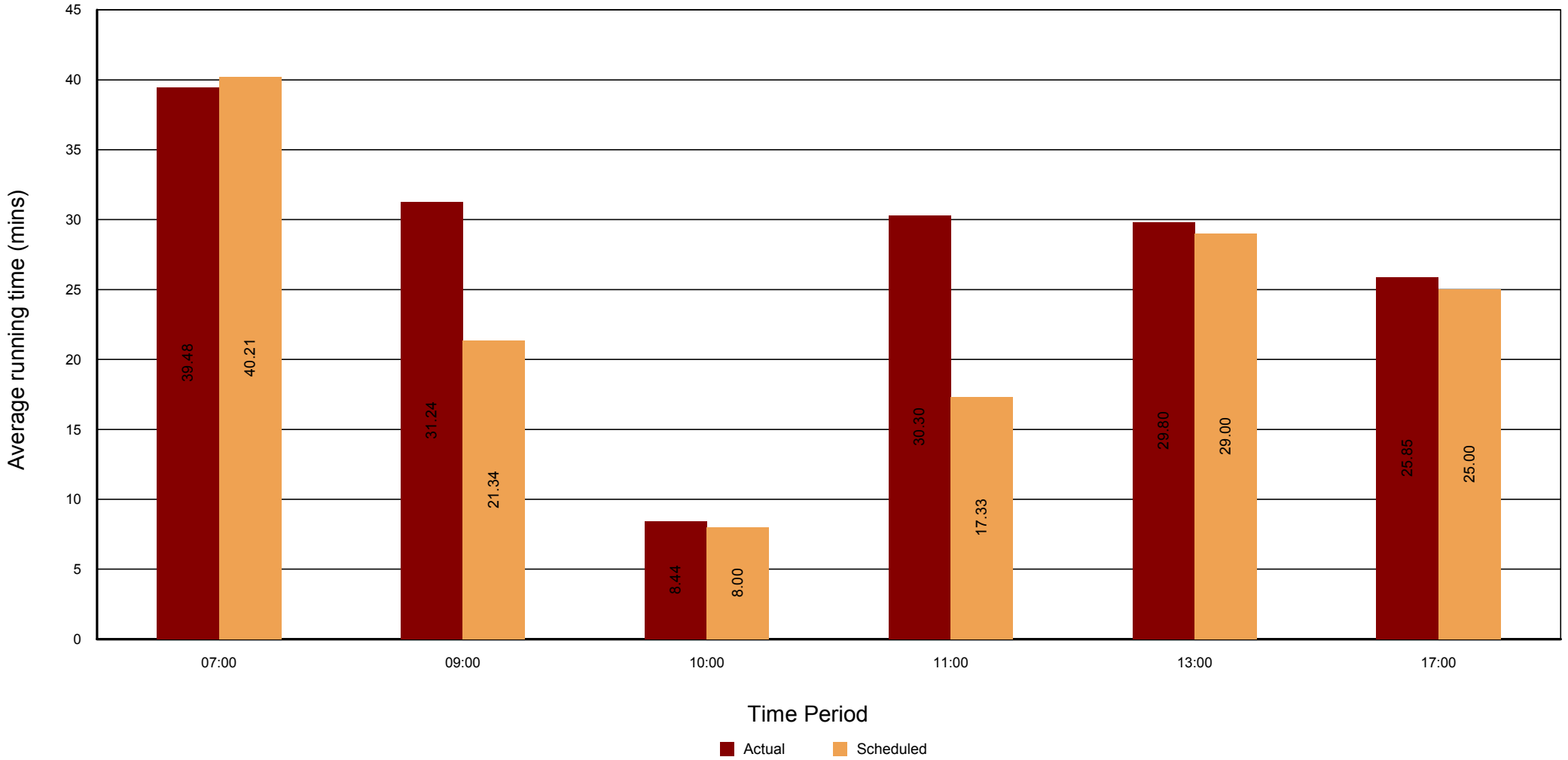
Date Range: 05/02/2018 - 09/05/2018 | Schedule: All | Service: JB 755 Bus Station - Bus Station

Time Range: 00:00:00 - 23:59:59 | Operator: All | Vehicle: All

Week Days: All | Depot: All | Run Board: All | Min. Tracked: All

From:1600GL3120 - Bus Station To:5330AWB35134 - Tesco

Direction: Outbound **Week Day**: Monday - Friday **Route**: Bus Station - Bus Station **Schedule**: James Bevan - April 2017



Running Time Analysis

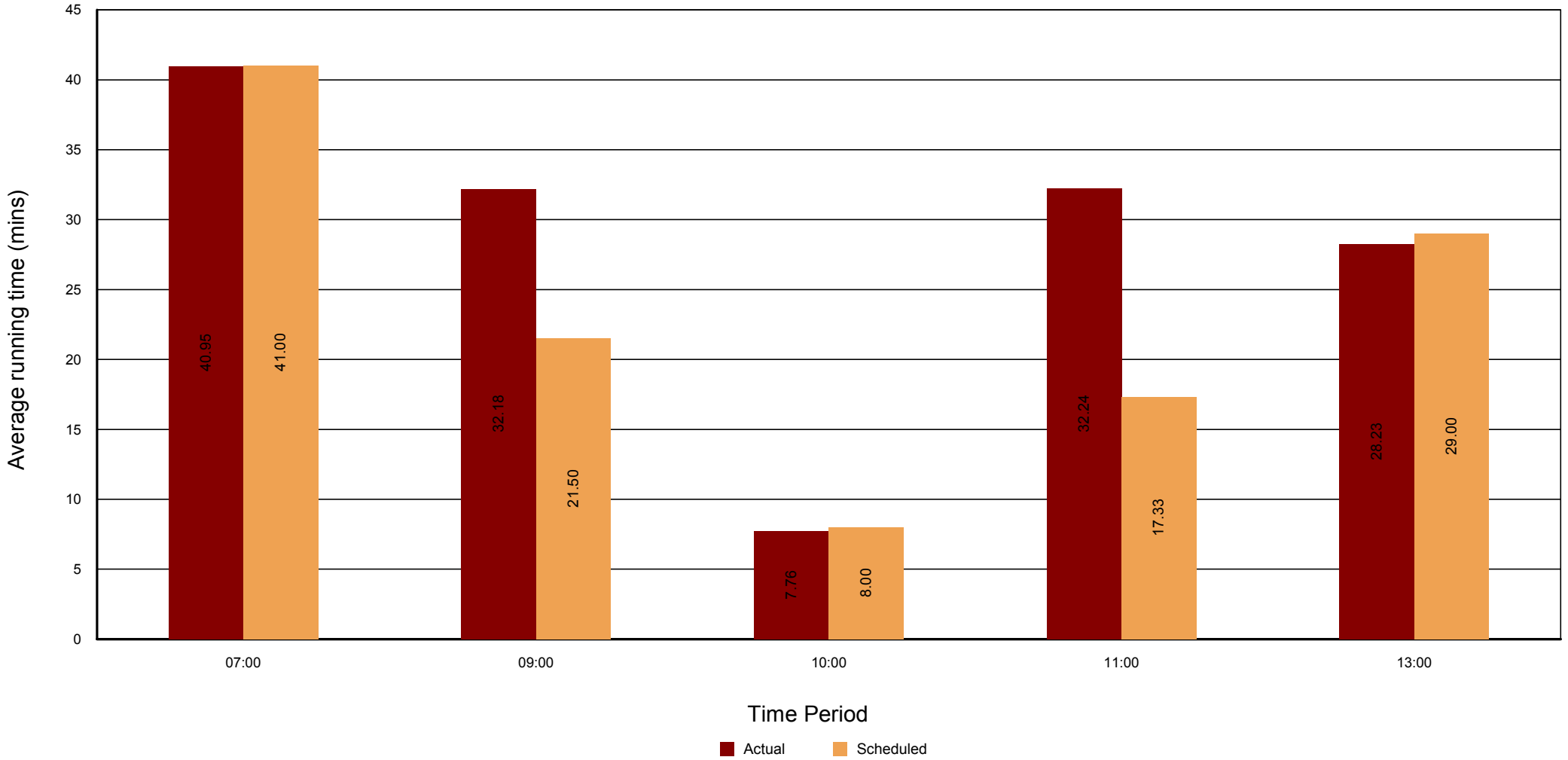
Date Range: 05/02/2018 - 09/05/2018 | Schedule: All | Service: JB 755 Bus Station - Bus Station

Time Range: 00:00:00 - 23:59:59 | Operator: All | Vehicle: All

Week Days: All | Depot: All | Run Board: All | Min. Tracked: All

From:1600GL3120 - Bus Station To:5330AWB35134 - Tesco

Direction: Outbound **Week Day**: Saturday **Route**: Bus Station - Bus Station **Schedule**: James Bevan - April 2017



Running Time Analysis

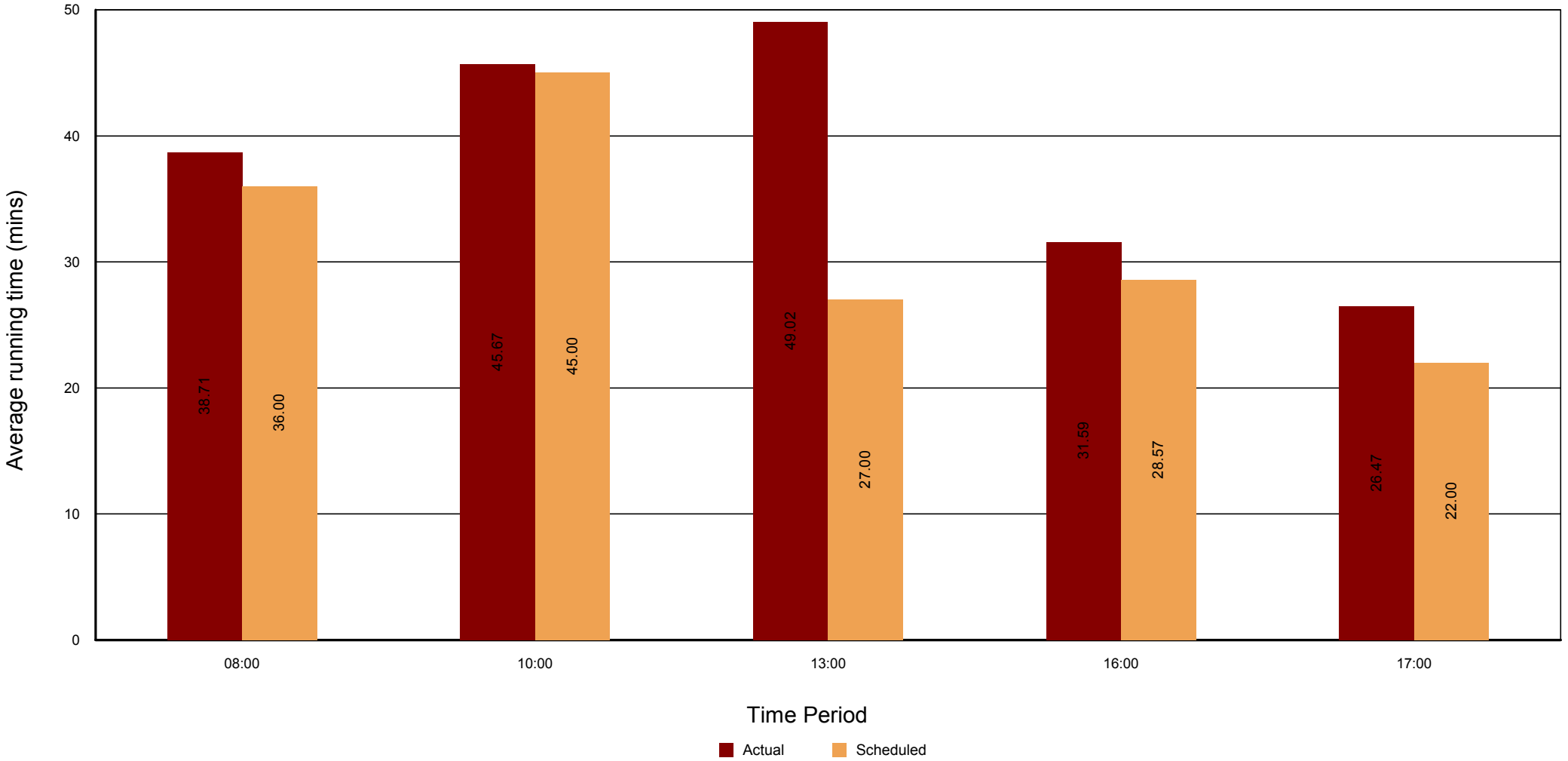
Date Range: 05/02/2018 - 09/05/2018 | Schedule: All | Service: JB 755 Bus Station - Bus Station

Time Range: 00:00:00 - 23:59:59 | Operator: All | Vehicle: All

Week Days: All | Depot: All | Run Board: All | Min. Tracked: All

From:5330AWB35134 - Tesco To:160000581 - Bus Station

Direction: Inbound **Week Day**: Monday - Friday **Route**: Bus Station - Bus Station **Schedule**: James Bevan - April 2017



Running Time Analysis

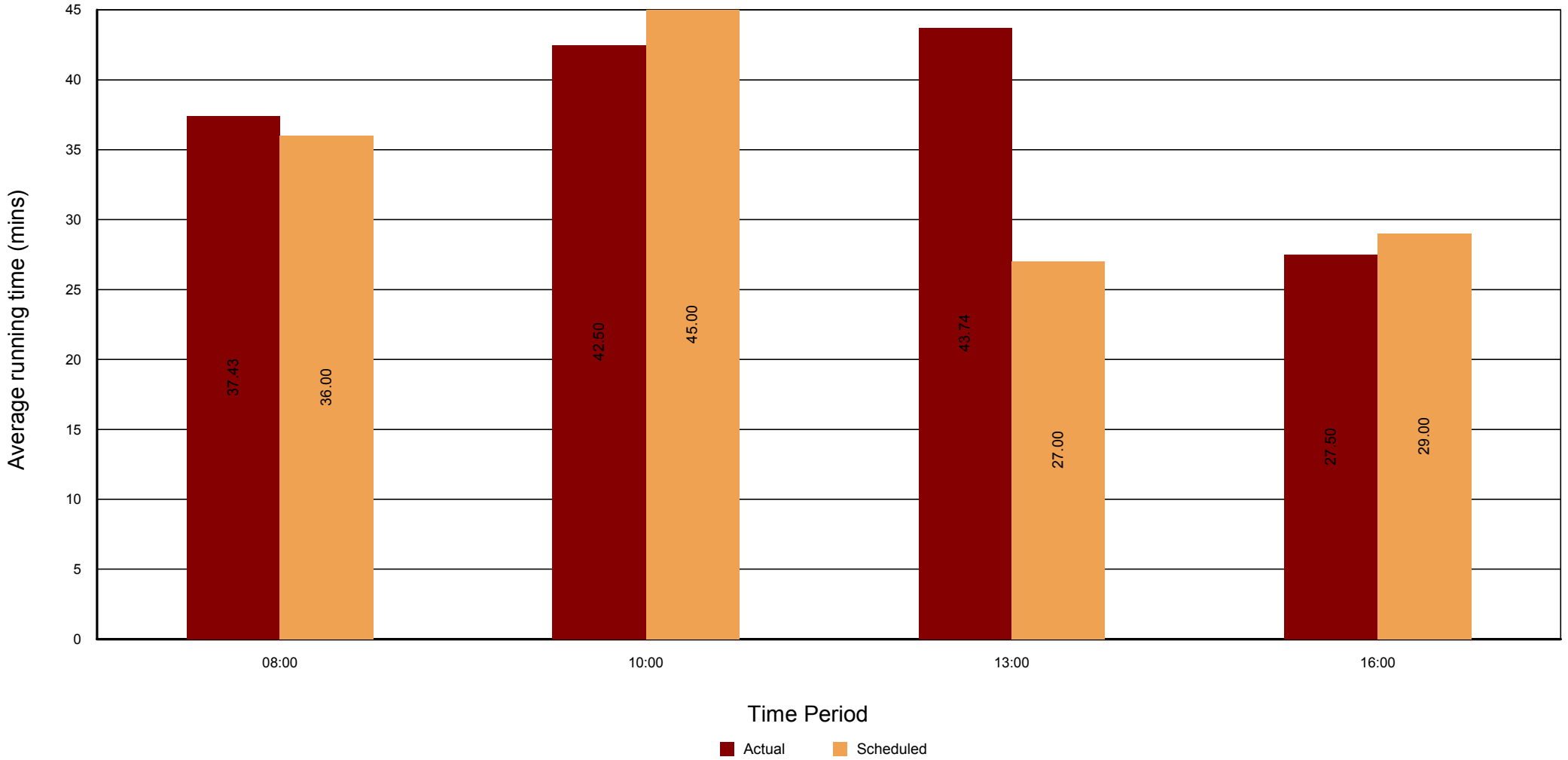
Date Range: 05/02/2018 - 09/05/2018 | Schedule: All | Service: JB 755 Bus Station - Bus Station

Time Range: 00:00:00 - 23:59:59 | Operator: All | Vehicle: All

Week Days: All | Depot: All | Run Board: All | Min. Tracked: All

From:5330AWB35134 - Tesco To:160000581 - Bus Station

Direction: Inbound **Week Day**: Saturday **Route**: Bus Station - Bus Station **Schedule**: James Bevan - April 2017



Appendix F
STAG Survey Report

monmouthshire
sir fynwy

STAG
Severn Tunnel Action Group

Severn Tunnel Junction
Passenger Survey Report
June 2016

Introduction

Over the past ten years passenger use of Severn Tunnel Junction Station has grown by over 120,000 additional persons joining, leaving or changing trains. This represents an annual ten year growth of over 8% per annum, and compares with a national average growth of just 4.2%, per annum.

In spring 2016 Monmouthshire County Council and the Severn Tunnel Action Group (STAG) undertook a survey to understand better the usage of the station, and the main concerns of weekday users.

The main reasons for carrying out this survey were:-

- In September the Severn Tunnel will be closed to all rail traffic between South Wales, London, Bristol and South and South-West Stations. This to allow electrification of the tunnel for use by a new breed of super express trains for the inter-city service between Swansea, Cardiff and London.

  During this closure period a replacement bus service is being provided by Great Western Railway (GWR), and this authority (Monmouthshire County Council) has agreed to assist GWR in the final planning for this event. This report aims to provide GWR with the factual information they require.

- In late summer this year the road bridge on Station Road, Roget, and leading to the M4 Tolls, will be closed for the purpose of demolition and rebuild. This is being carried out as part of the electrification of the Swansea, Cardiff to London route.

  Up to seventy five cars currently access parking over this bridge. Monmouthshire County Council notes that the vehicle owners seek alternative options, and we will consider all options as far as we are able.

- In 2018 GWR expects to be introducing five and three coach turbo diesel rolling stock to the Cardiff-Portsmouth Harbour and Cardiff-Taunton routes. Currently GWR are considering different timetable options to those currently provided. This report aims to provide GWR with the required information.

- Both Welsh Government and the Cardiff Metro Scheme have, in the past, identified Severn Tunnel Junction as a potential 'Park and Ride' site. The new M4 route plans may provide quick road vehicle access to Severn Tunnel Junction station, and Monmouthshire County Council needs to understand what passenger needs are likely to be and, along with other service providers, attempt to satisfy them.

This report sets out the findings of the survey. Along with the Severn Tunnel Action Group we thank the four hundred and twenty six respondents to the questionnaire, and acknowledge the part played by the Magor Rail Group, Railfuture Cymru and our own staff made in compiling this report.

Cllr David Dovey
Chair of the Strategic Transport Group
Monmouthshire County Council

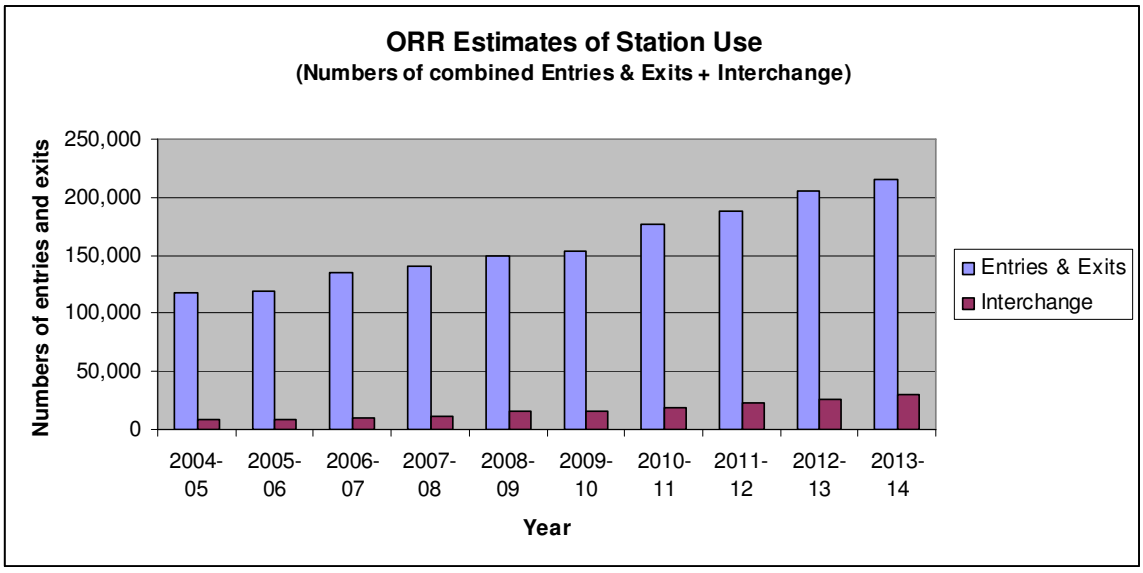
Forward

In recent years Severn Tunnel Junction has seen an increase in rail passenger use of over twice the national average.

We believe this is due to several factors, in particular:

1. The economic growth of Bristol and its job market
2. Lower housing costs in Monmouthshire and the Forest of Dean, to those in Bristol
3. The cost for commuters of taking cars to Bristol, given the Severn Bridge Tolls (currently £6.60), and city centre parking (£10.00 plus a day)
4. Road vehicle congestion in Bristol City centre
5. The introduction about five years ago, by Cross Country Trains, of early morning stopping services at Lydney, Chepstow, Caldicot and Severn Tunnel. These provided good connections at Severn Tunnel Junction for those wishing to travel to Bristol[1], and
6. Provision of an additional car parking spaces at Severn Tunnel Junction catering for an additional 140 cars[2].

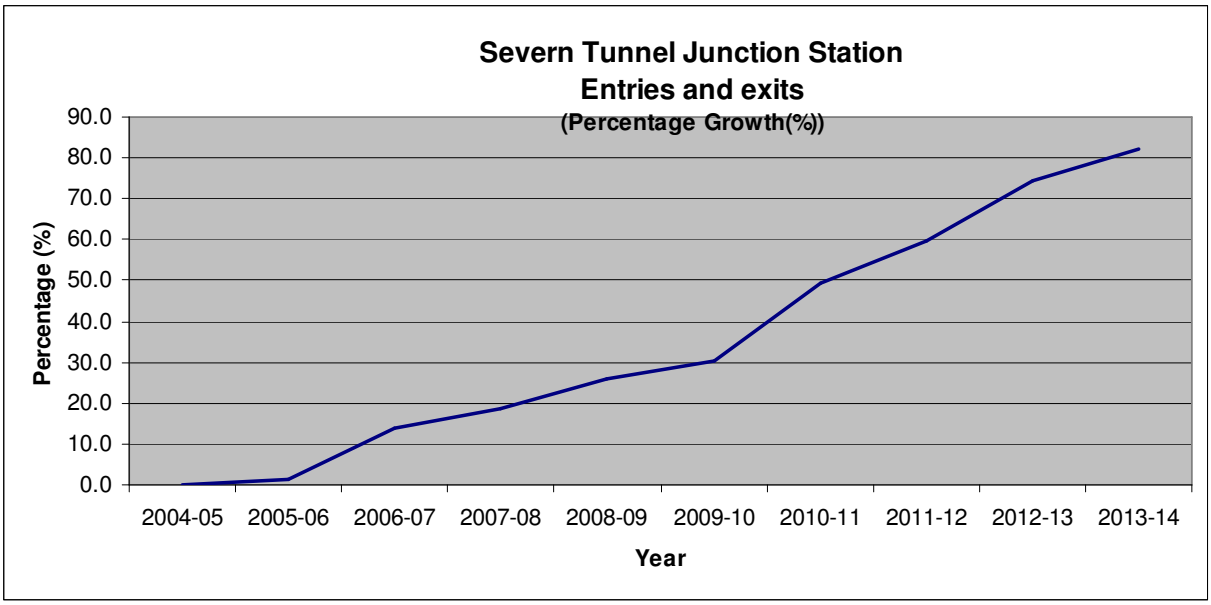
The growth in patronage of Severn Tunnel Junction Station is best highlighted by the following charts emanating from statistics provided by the Office of Rail Regulation (ORR) and for Estimates of Station usage. These may be found on the ORR's website at: http://orr.gov.uk/statistics/published-stats/station-usage-estimates

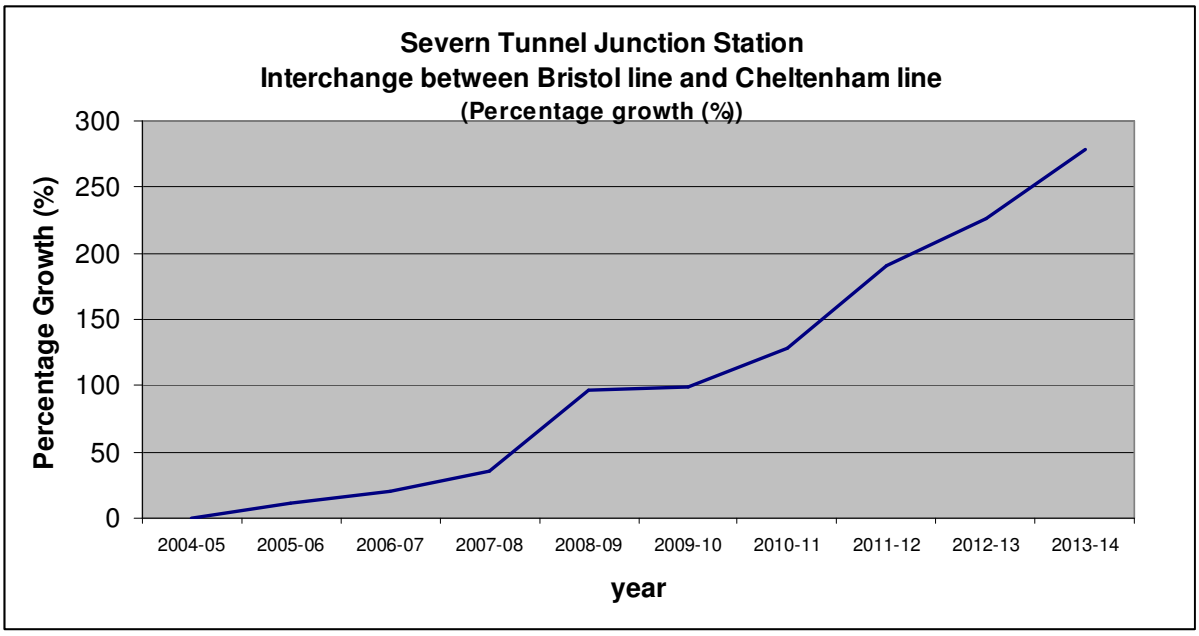


Years	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Entries & Exits	118,092	119,729	134,648	140,192	148,836	153,644	176,518	188,592	205,814	215,372
Interchange	8,029	8,974	9,684	10,861	15,824	16,023	18,308	23,338	26,233	30,348

[1] There is now substantial overcrowding on the connecting trains into Bristol

[2] The main station car park offers 110 spaces. Over the past couple of years Monmouthshire County Council has provided additional spaces in the nearby Countryside Park, and in the Community Playing Fields adjacent to the station.





(Source: ORR 'Estimates for Station Use)

In compiling the report we included responses from a small minority of persons who currently do not use the station. These respondents (mainly persons living in Chepstow) wished to register the fact that they would use the station if either

a. The London bound trains stopped at Severn Tunnel Junction, and/or
b. Car Parking was guaranteed to be available after 8.00am on weekdays

The remainder of the report provides the information collected during the survey. Our expectation is that it will help provide various Severn Tunnel Junction stakeholders with information they need in making future decisions.

Index

Research methodology

The research was undertaken during the period 14 April to 26 May 2016.

Research was done through a combination of Consumer Questionnaire and structured observation.

A total of 426 questionnaires were completed over the period, with 197 written manually, and 229 completed on-line.

Promotion of the questionnaire included posters at Severn Tunnel Junction Station, and through press activity carried out by Monmouthshire County Council.

Questionnaires were handed out to passengers at the station on Thursday 14 April, between 06.00 and 20.00hrs. Questionnaires were subsequently available at the station until Monday 16 May. A collection point operated in the Ticket Office throughout the period. On-line surveys were also available from 14 April until 16 May.

A copy of the questionnaire appears in the Appendix.

In addition, a 'Footfall' study was undertaken, the purpose of which was to observe all passengers 'entering', 'leaving', or 'transferring to another train' (sometimes called 'interchange'). This observational exercise took place as follows:

- Thursday 14 April from 1000 to 2000hrs
- Tuesday 10 May from 0600 to 1000hrs, and
- Thursday 26 May from 2000 to 0003 on Friday 27 May

We estimate that approximately two thirds of those who travel during the week, on a daily basis, responded to this inquiry.

A small number who don't use the station also responded, mainly to ask that a London train stops at Severn Tunnel Junction.

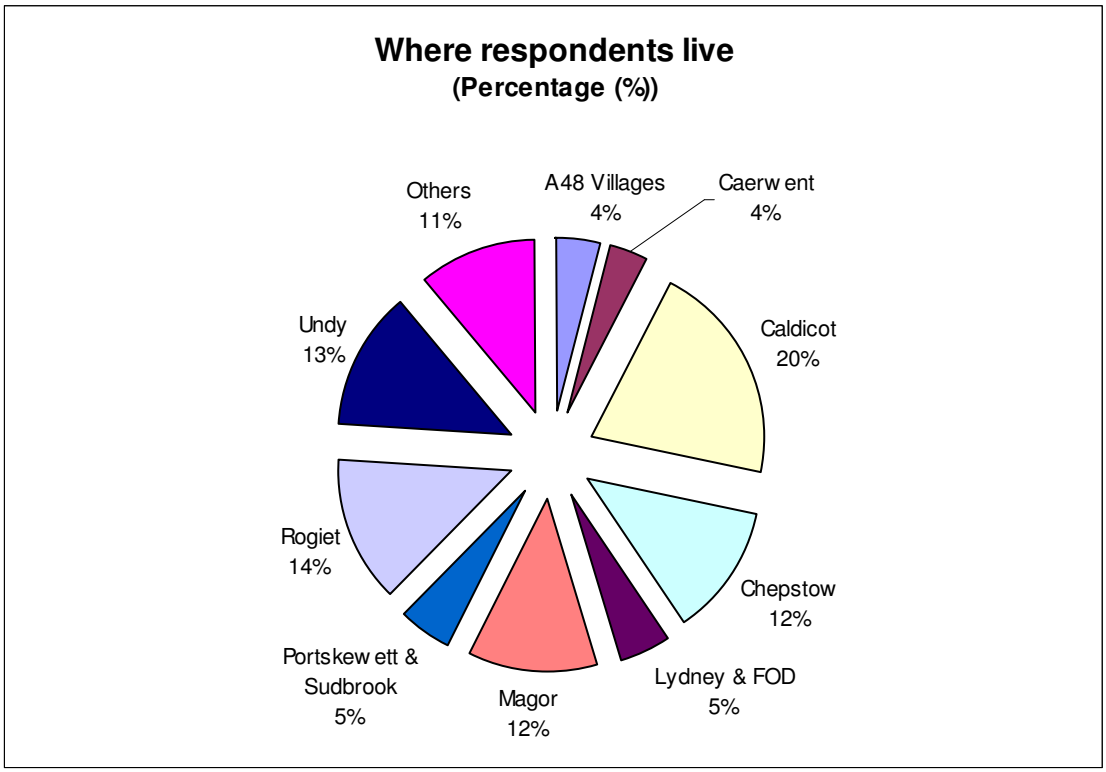
Summary of results

- Users come from a wide geographic area, with forty per cent of travellers residing outside the Magor, Undy, Rogiet and Caldicot area.
- From Monday to Friday the station is primarily used by commuters
- There are approximately 1,200 passenger movements (entries, exits and interchanges) a day (weekdays: Monday to Thursday)
- Station user growth continues at around eight per cent per annum. Twelve per cent of respondents started using the station within the past twelve months.
- Busiest time is from 6.50am to 8.00am during which period around 300 passengers catch trains
- Overcrowding on trains are the users biggest concern
- Lack of car parking spaces is suppressing use of the station, and is the second largest area of concern.
- Over 300 cars park in the various parking zones, or on residential streets. Most of these are parked by 8.00am
- Pedestrian safety is a major concern for those walking along the station entrance lane, and through the station car park. There is a call for a dedicated safe walking route. Vehicle safety in these areas is also a concern to motorists.
- Ticket Office opening hours and manning levels is subject of much detrimental comment. Clearly some passengers are unaware of their options for season ticket purchasing elsewhere, or on another day.
- Lack of passenger shelter on the platforms is a concern. Other services are seen to be lacking (toilet, catering, sufficient secure cycle storage, etc.).
- Interchange passengers living near stations on the Severn Tunnel Junction to Cheltenham line cite an inadequate train service, and poor connection times for those wishing to travel to Bristol or Bath. They also comment on the lack of a warm and secure waiting area.
- Rogiet residents voice concern about road safety, and use of residential streets for free parking.

Questionnaire Responses

1. Where respondents live

421 respondents

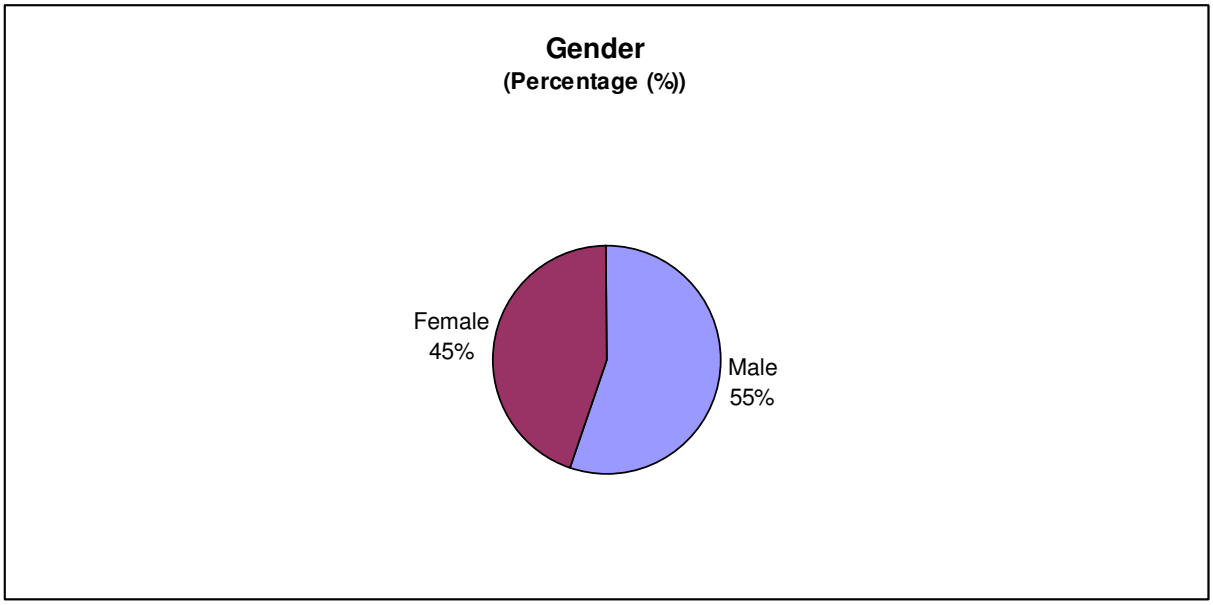


See Appendix 1 for a full list

Several correspondents reported concern that the new M4 junction at Undy – just a mile and a half from this station – will lead to more rail travellers using this station. One stated: "*Concerned at traffic going down Station Road and thinks station will get busier when new M4 is built - need direct access to car parking off 'B' road."* For further information regarding the new M4 junction at Undy see: http://gov.wales/topics/transport/roads/schemes/m4/corridor-around-newport/?lang=en

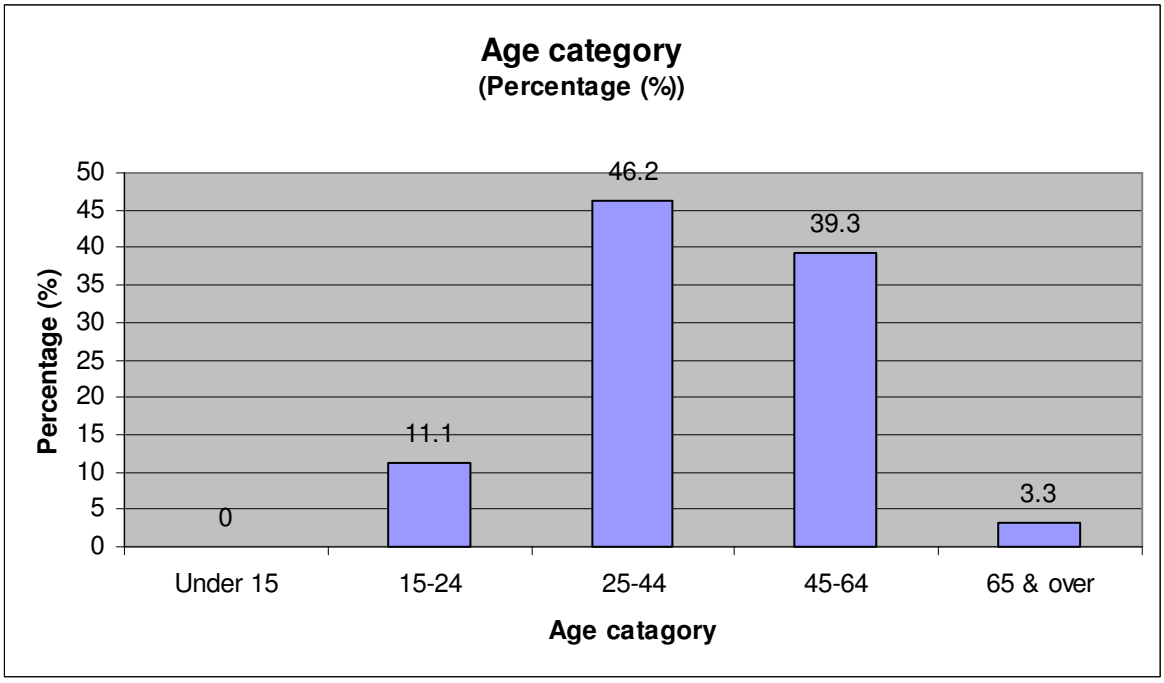
2. Respondents' Gender

419 respondents



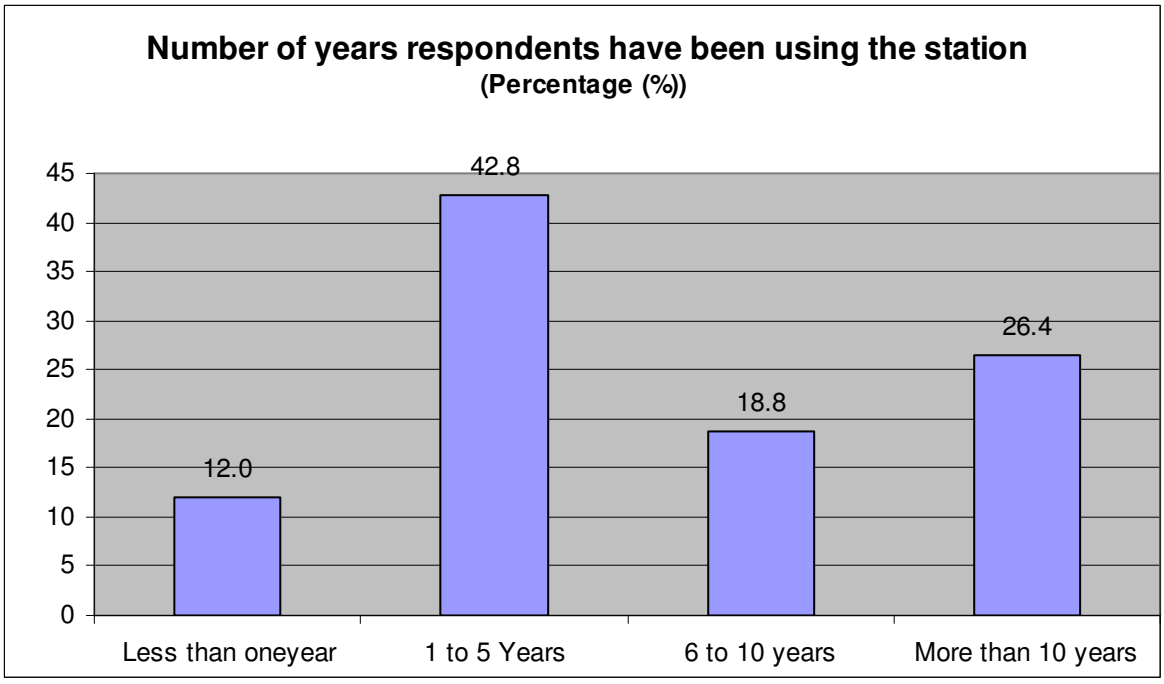
3. Age Profile of respondents

422 respondents



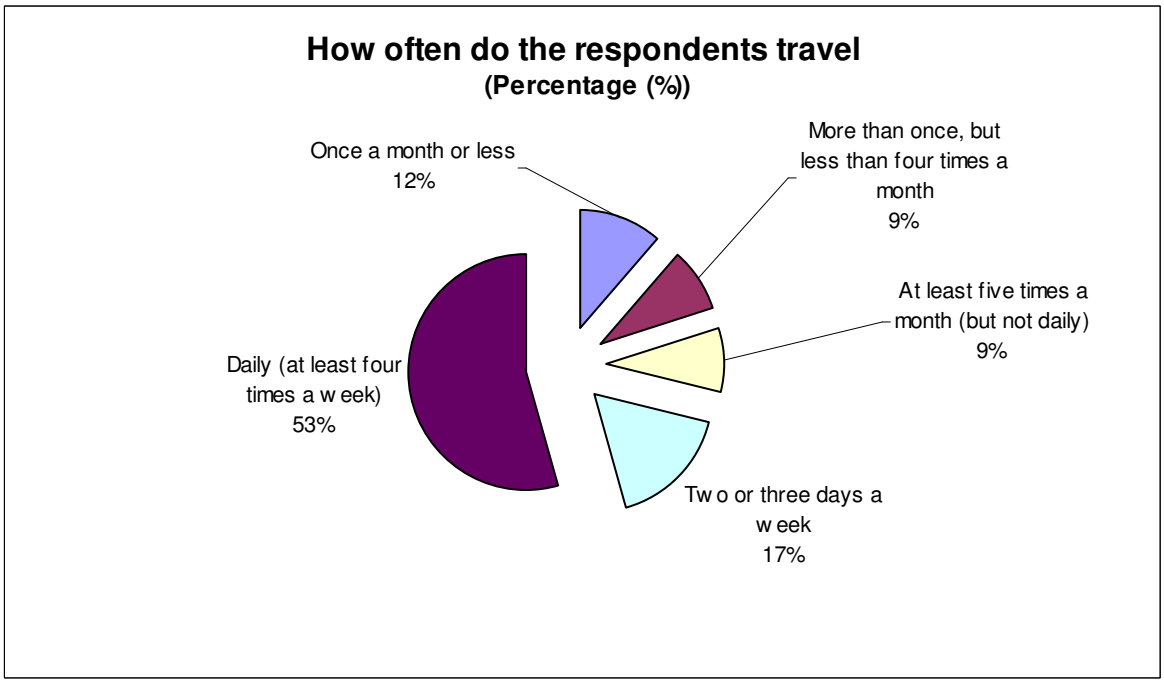
4. Number of years users have been catching trains from Severn Tunnel Junction

421 respondents



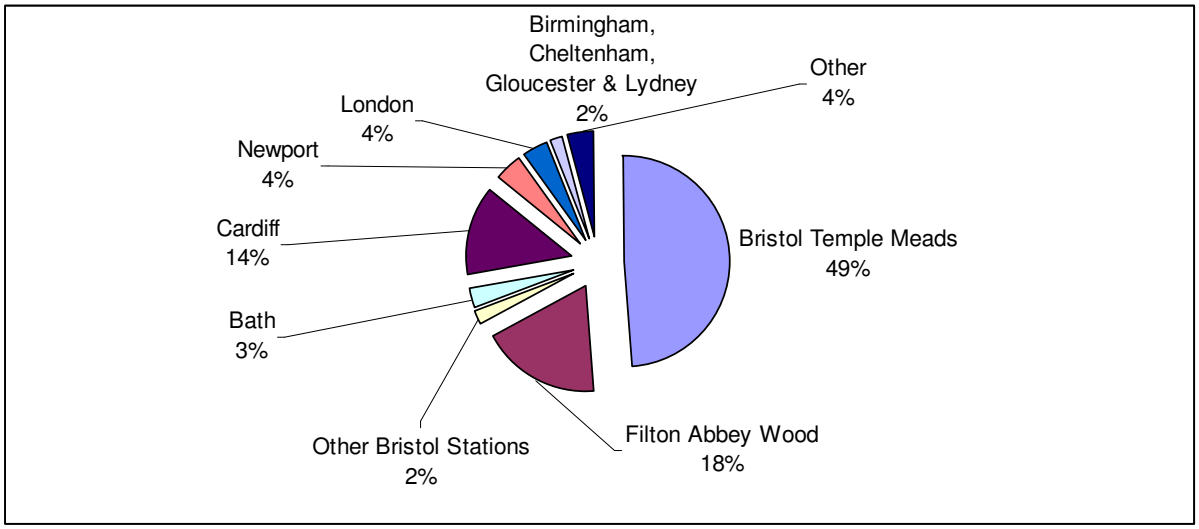
5. How regularly do respondents use the station?

417 respondents



6. To which station do respondents most usually travel?

419 respondents



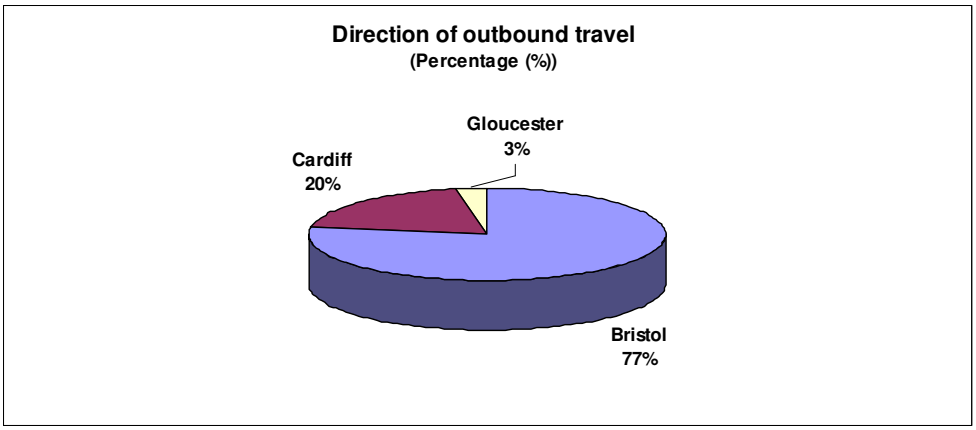
- Nearly 70% of travellers go to Bristol stations
- 14% go Cardiff.
- As many respondents go to London as travel to Newport

A full list of destinations, and the numbers travelling to each, is to be found in Appendix 2

7. Direction of travel, and train operator used, by respondents travelling from Severn Tunnel Junction

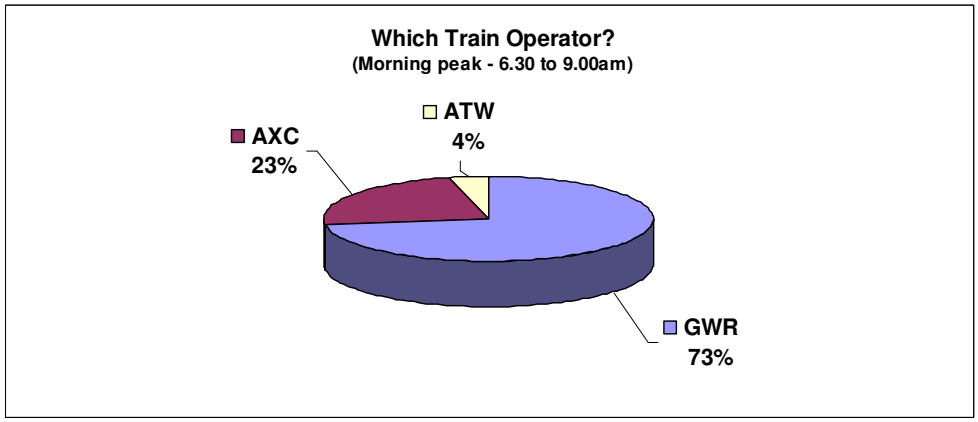
417 respondents

7.1 In which direction do people go?

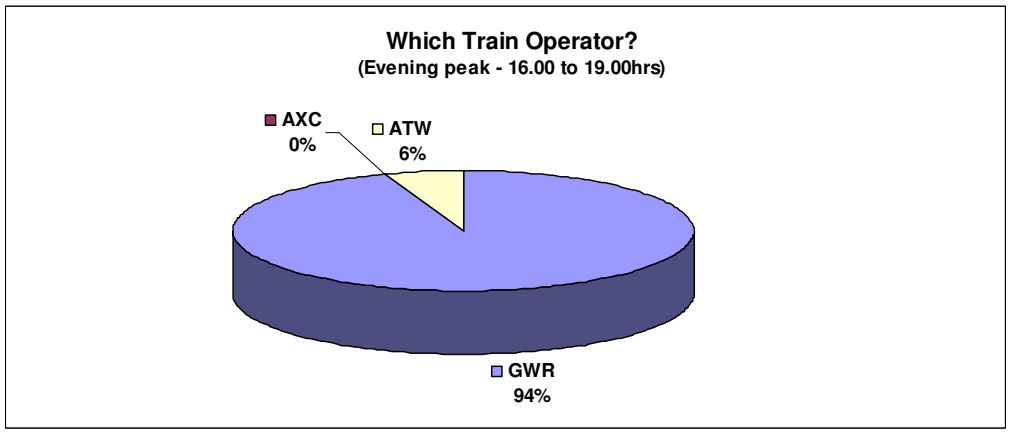


7.2 Which operator's train do they use (Peak hours only)?

Morning



Evening



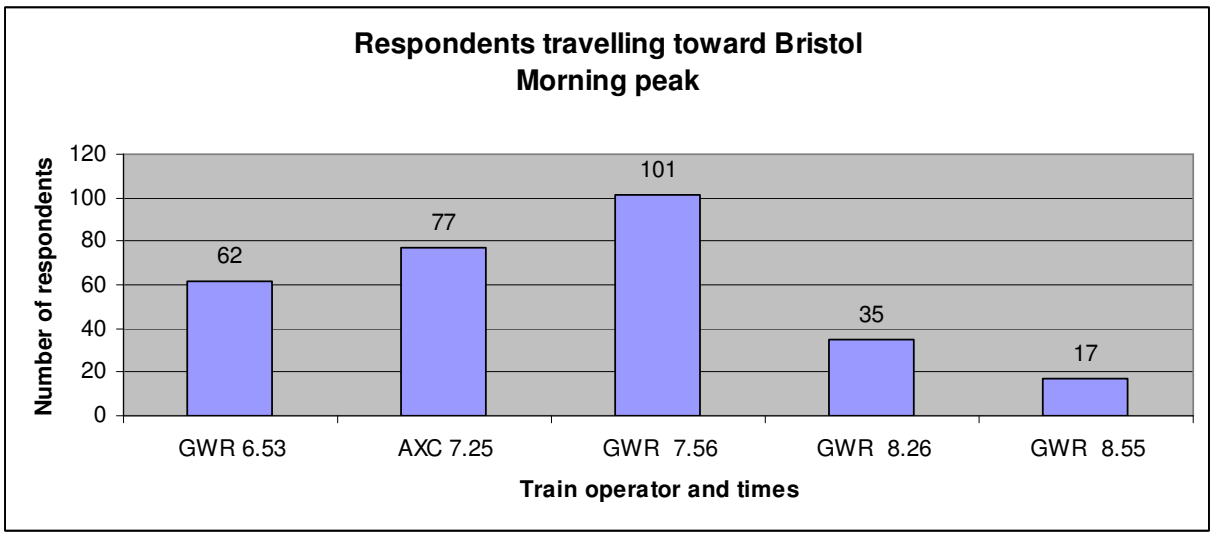
ATW – Arriva Trains Wales
AXC – Arriva Cross Country
GWR – Great Western Railway

8. When do you usually depart?

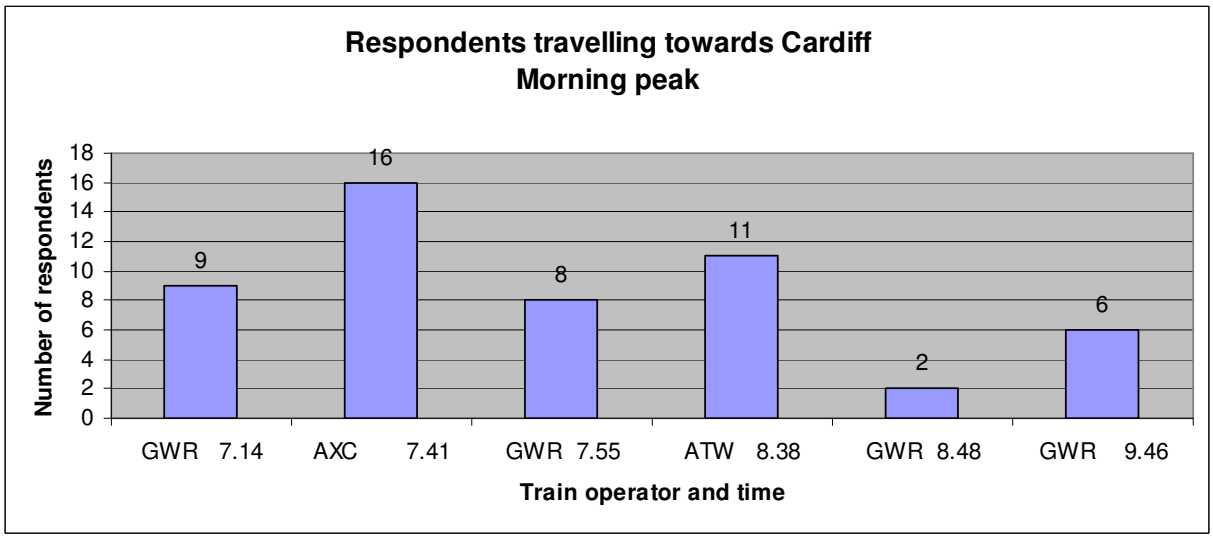
408 respondents

The trains listed below are peak time trains

8.1. Trains for Bristol, London, South and South-West



8.2. Trains for Newport, Cardiff and other Welsh Stations

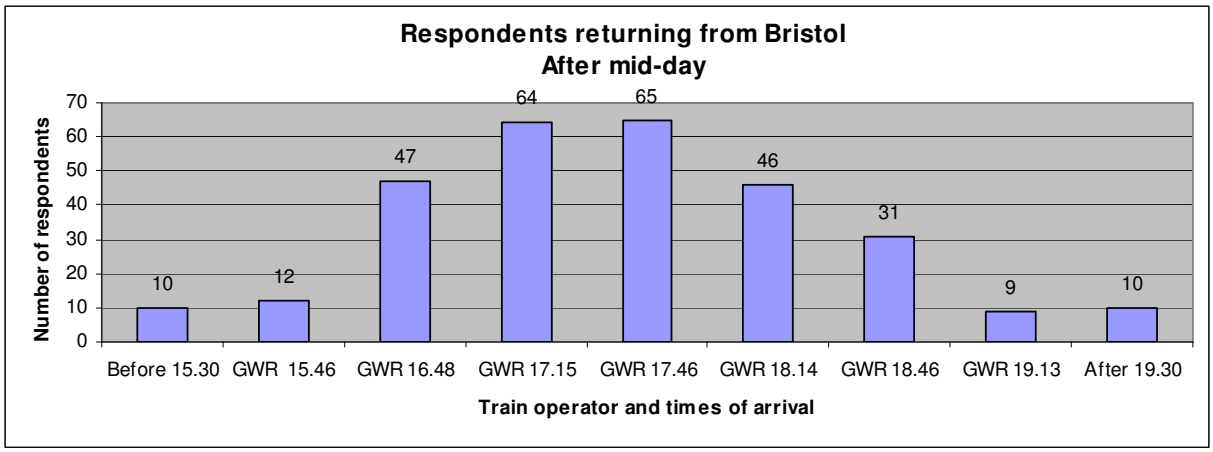


ATW – Arriva Trains Wales
AXC – Arriva Cross Country
GWR – Great Western Railway

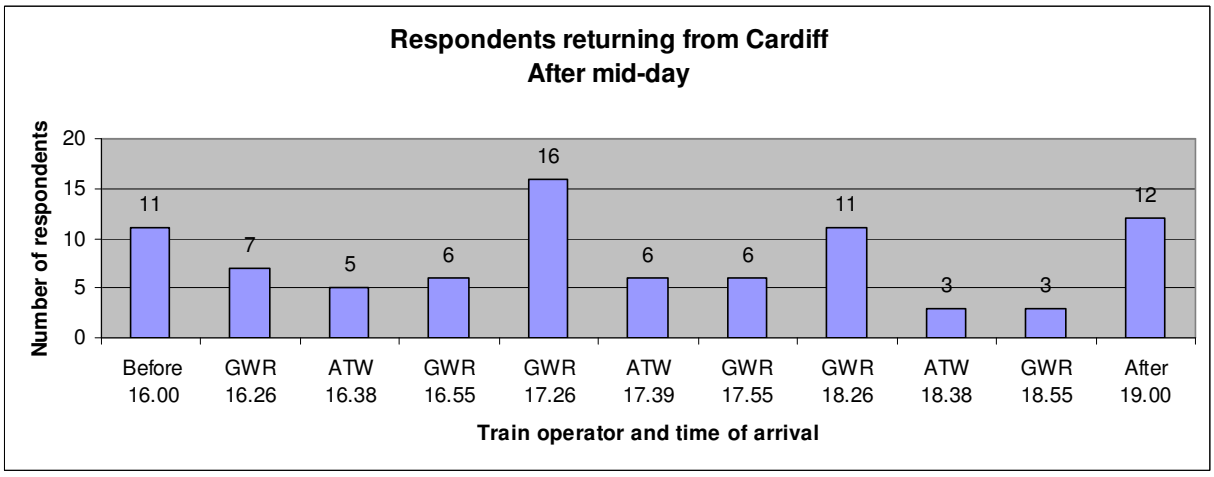
9. When do you usually return?

385 respondents

9.1 Trains from Bristol, London, South and South-West



9.2. Trains from Newport, Cardiff and other Welsh Stations

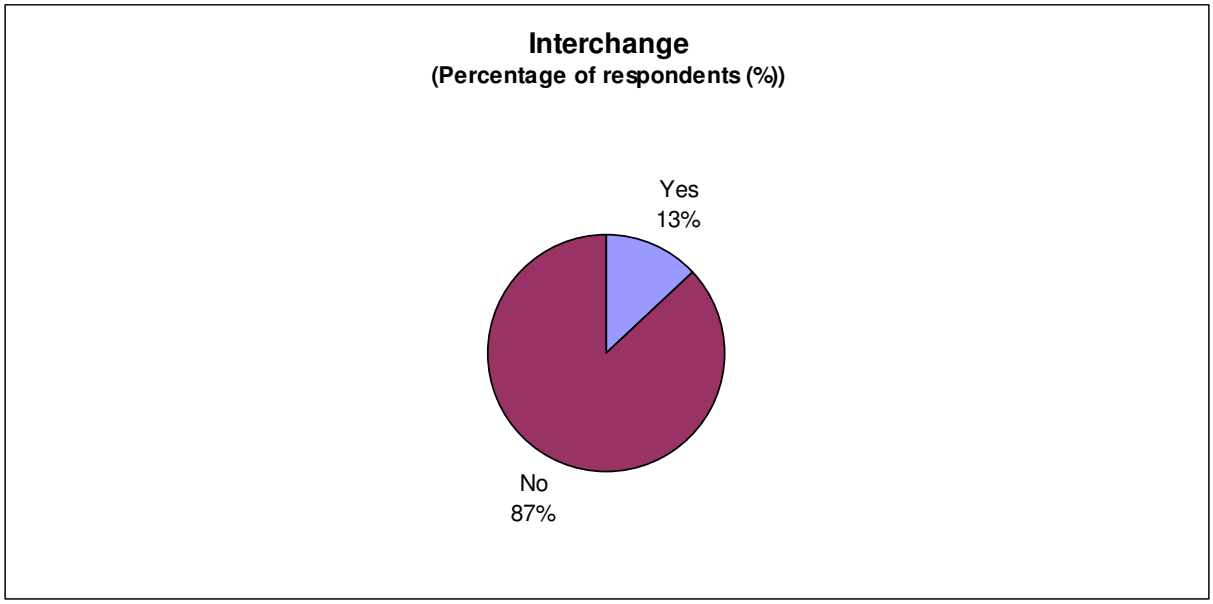


ATW – Arriva Trains Wales
AXC – Arriva Cross Country
GWR – Great Western Railway

10. Interchange at Severn Tunnel Junction station?

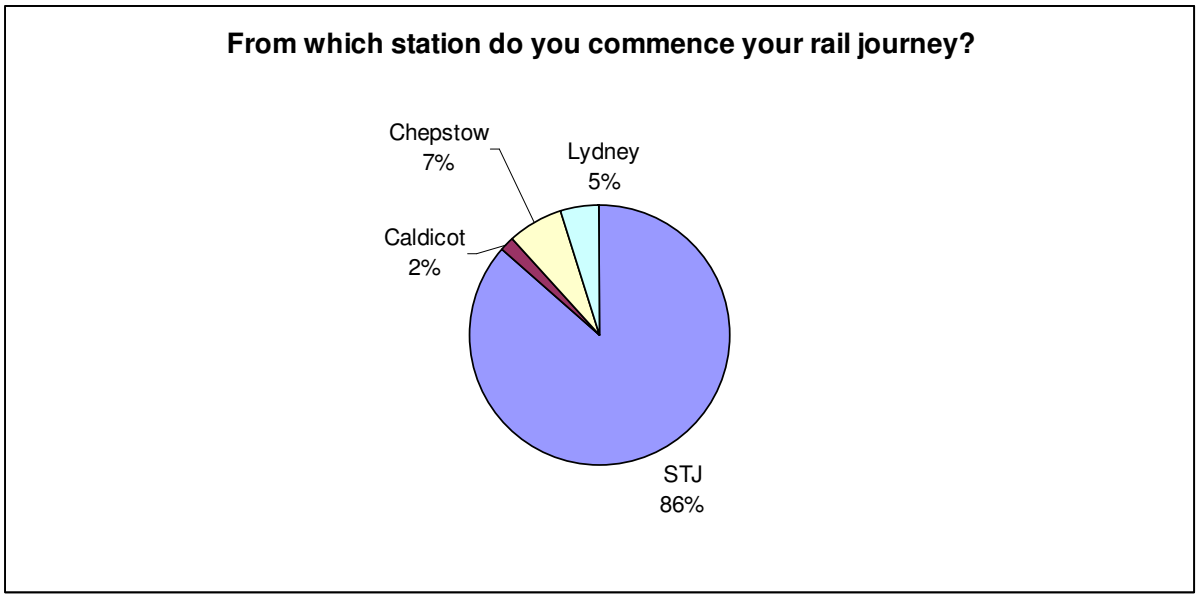
416 respondents

10.1 Percentage of those who change trains



10.2 From which station do you normally start your journey

413 respondents

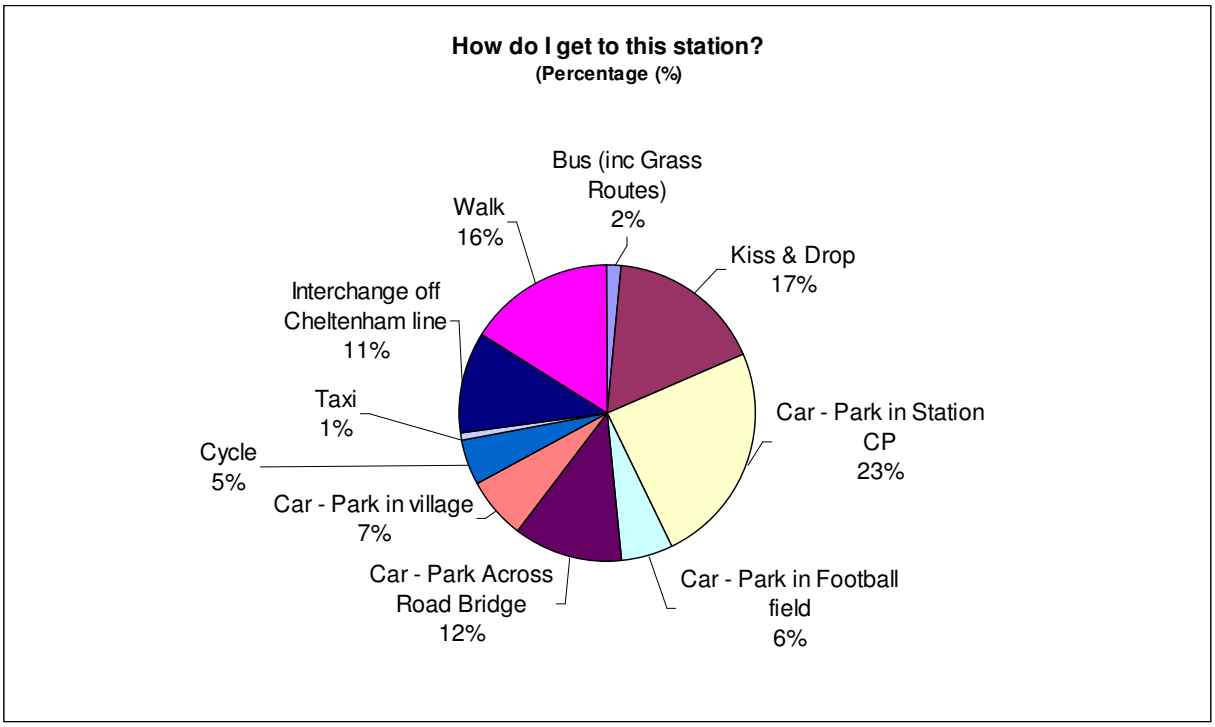


Respondent numbers who interchange, and their original station

Caldicot	Chepstow	Lydney
4	29	15

11. By what means respondents get to Severn Tunnel Junction Station

419 respondents

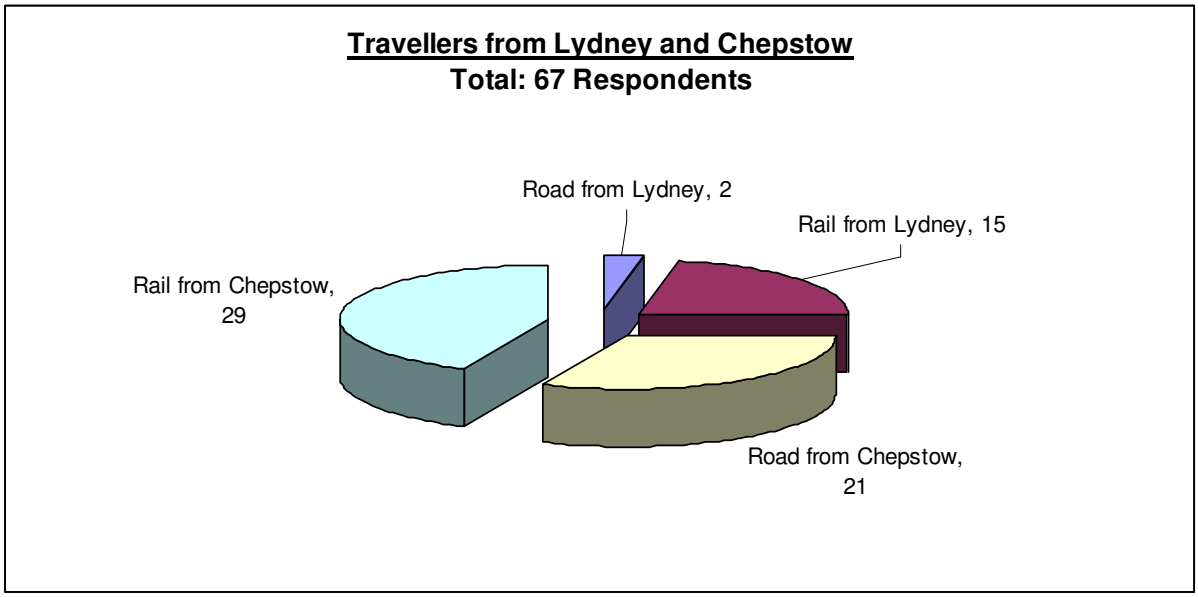


Numbers:

Bus (inc Grass Routes)	Kiss & Drop	Car Park: Station CP	Car Park: Football Field	Car Park: Across Road Bridge	Car Park: In village	Cycle	Taxi	Interchange off Cheltenham line	Walk
7	71	101	24	49	29	21	3	46	68

Note: Four (4) respondents said they used the grass routes bus. Twenty four (24) respondents said they would use a bus if it were available at convenient times.

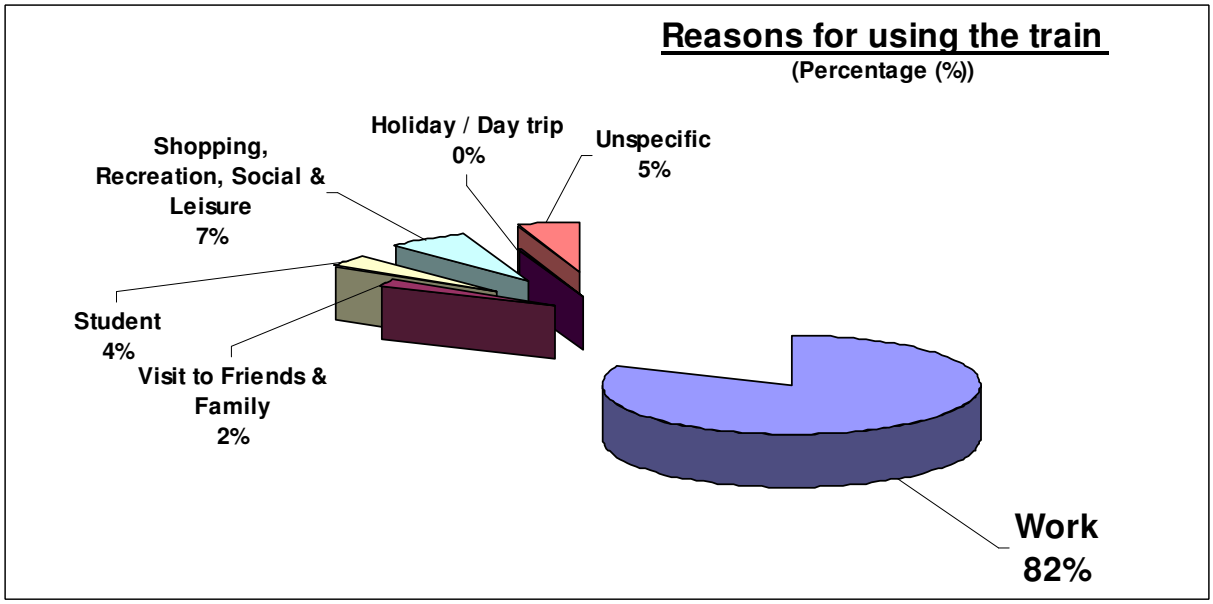
12. Lydney and Chepstow users of Severn Tunnel Junction and how they get there:

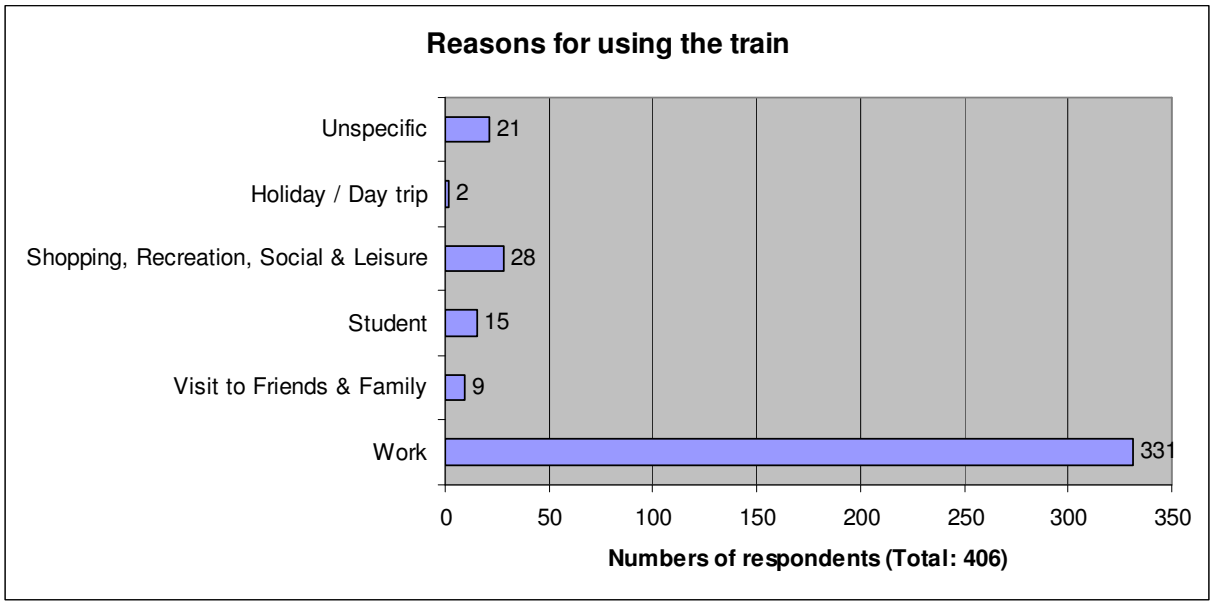


	Lydney	Chepstow	Total
By Road	2	29	31
By Rail	15	21	36
TOTAL	17	50	67

13. Reasons for using the train

406 respondents

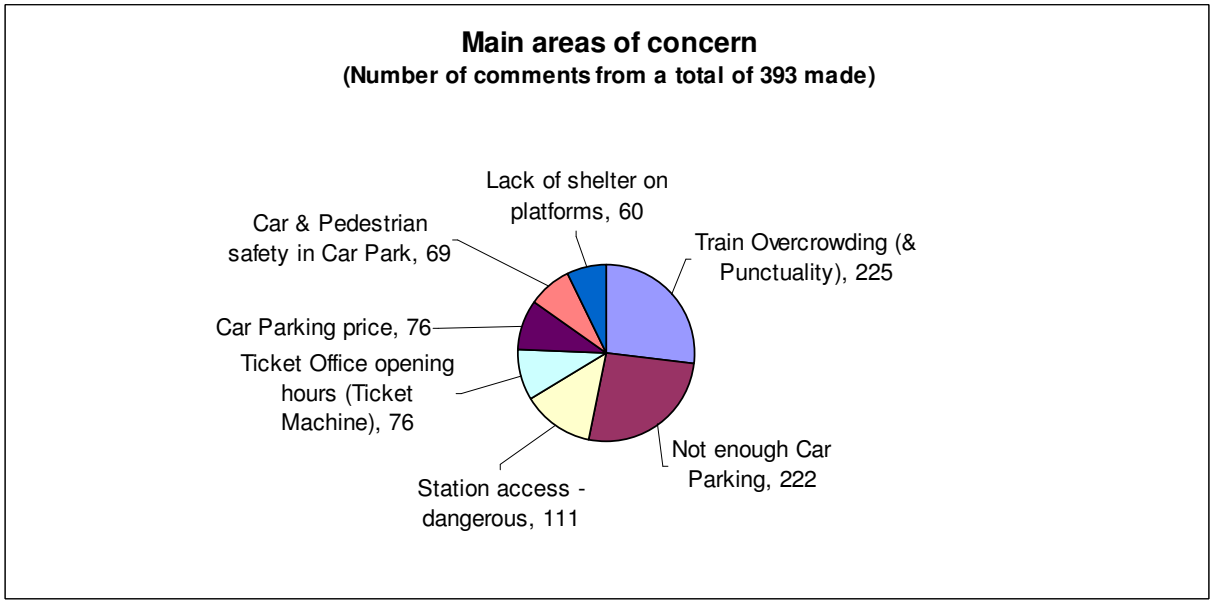




14. Respondents' main concerns

393 Respondents

The following are the main concerns that respondents have. However, we have disregarded comments regarding the closure of the Severn Tunnel, the dismantling and rebuilding of the new road bridge, and the forthcoming changes to the GWR rolling stock.



Concerns were expressed by 92.3% of all respondents

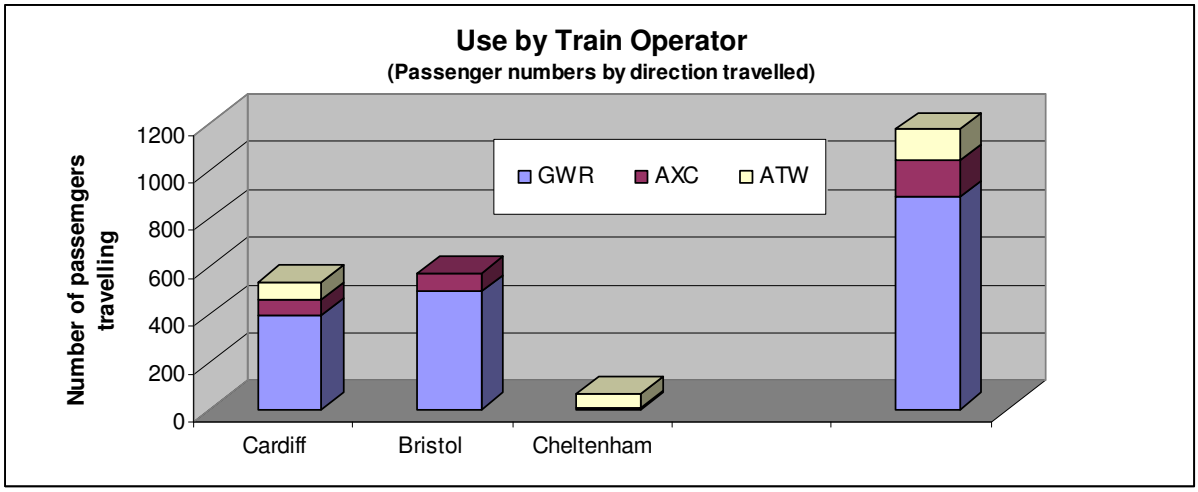
15. Footfall Survey Results

Observances:

A survey observing footfall on and off each train was undertaken on three separate days, namely:

- Tuesday 10 May, 2016, between 06.00 and 10.00hrs
- Wednesday 13 April, 2016, between 10.00 and 20.30hrs
- Thursday 26 May, 2016, between 20.30 and 00.15hrs the following day

Over this period 1,173 observations were made, leading us to conclude that our survey had been completed by something like 70% of those who travel regularly during the working week. This means a possibility of over 1,250 entry, exit and interchange passengers on some weekdays.



	Train operating Company				
To/From	**GWR**	**AXC**	**ATW**	**Total**	**%**
Cardiff	396	66	72	534	45.5
Bristol	494	77	0	571	48.7
Cheltenham		9	59	68	5.6
Total	**890**	**152**	**131**	**1173**	100

ATW – Arriva Trains Wales
AXC – Arriva Cross Country
GWR – Great Western Railway

Transfers:

During the observance periods:

- Sixty persons transferred from one line to another – but just twenty one of these were in the evening.
- The most transfers were:
  - Twenty six persons off the 07.42 AXC train from Lydney, Chepstow or Caldicot, and joining the 07.55 GWR service toward Bristol.
  - Eight persons off the 08.39 AXC service from Lydney, Chepstow or Caldicot, and joining the 08.55 GWR service toward Bristol.
  - Eleven off the 17.16 GWR service from Bristol, and joining the 17.39 ATW service to Cheltenham

Bikes:

We observed twenty two (22) bikes being carried by trains, mostly in peak times. Of these the:

- 07.05 AXC service to Cheltenham - three bikes
- 08.26 GWR service to Bristol - three bikes
- 07.56 GWR to Bristol – two bikes, and
- 17.16 GWR from Bristol - two bikes
- The remaining bikes were singly placed on trains.

Note: In the open ended part of the questionnaire some survey respondents voiced a dislike of those who take bikes onto crowded trains at peak times.

Peak services:

The observance confirmed the following peaks (those trains on which more than 20 passengers entered or exited):

Morning Peaks:

- 06.53 to Bristol (GWR) – 52 entries
- 07.25 to Bristol (AXC) – 77 entries
- 07.42 to Cardiff (AXC) – 26 exits
- 07.56 to Bristol (GWR) – 122 entries
- 8.26 to Bristol (GWR) – 54 entries
- 8.55 to Bristol (GWR) – 27 entries

The 07.56 to Cardiff (GWR) has 19 entries

Evening Peaks:

Concentrating on those services with more than 20 twenty exits (there are no trains after 19.00 attracting more than 20 entries)

- 16.49 GWR from Bristol - 20 exits (severely late arriving)
- 17.16 GWR from Bristol - 91 exits*.
- 17.55 GWR from Cardiff – 21 exits
- 18.15 GWR from Bristol – 48 exits

Note: 17.39 ATW to Cheltenham - 19 joiner entries, 11 of which transferred from the 17.16 (GWR) service from Bristol

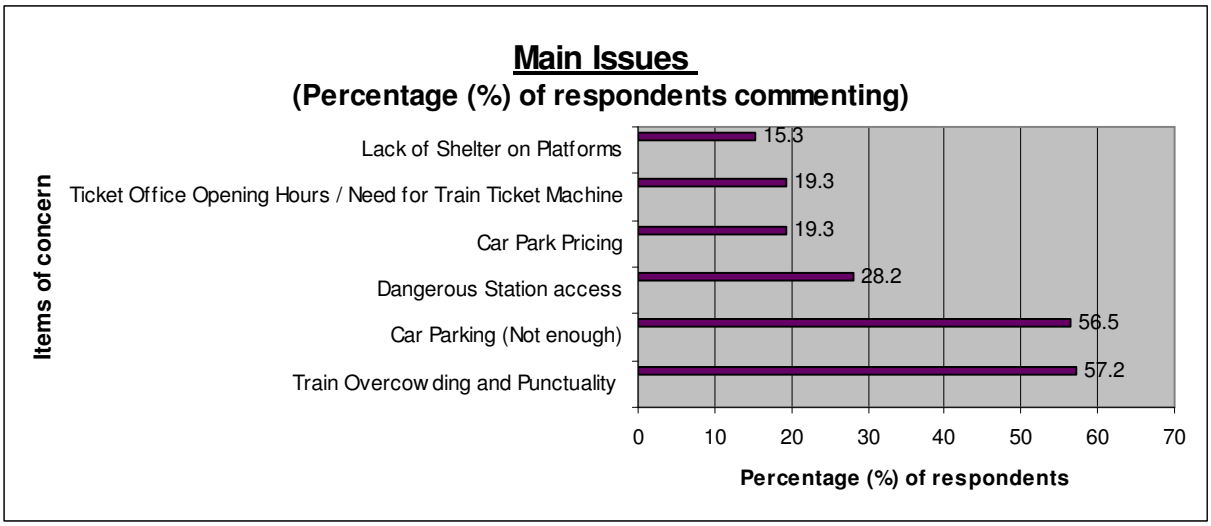
* We believe this to be excessive and due to the lateness of the earlier service.

Respondents comments

The comments respondents made were to open ended questions. We have attempted to categorise these into simplified headings.

A summary of the key points raised by the 393 respondents follows.

Summary of main issues:



1. Train Overcrowding and punctuality

Overcrowding on trains proved important to nearly 60% of respondents (punctuality less so)

Main points:

- All peak time trains from Severn Tunnel toward Bristol: most notably the AXC at 07.25; and the GWR 07.55 service.
- Peak trains from Bristol to Severn Tunnel: in particular the 16.25 & 17.25 off Bristol Temple Meads (BTM) from Taunton – when formed with only two carriages
- Short forming of trains generally
- All trains when a big event is on in Cardiff

Other Comments:

- Longer or more frequent trains are needed during rush hour
- Can't get on the train at 15.21 at BTM so have to wait and use a later train
- All short-formed trains (those with fewer carriages than usual) - particularly the 07.55 to BTM – results in passengers not being able to board the train
- Would like more than one train an hour on the Portsmouth Harbour line through Bath
- We need more scheduled (timetabled) services
- Too many bikes on the trains: should only permit fold-up bikes at peak times (Several similar to this) / Need more space for bikes
- Need regular half hourly trains throughout the day to Bristol & Cardiff / Need more timetabled trains
- Concerned that the rolling stock that is to be cascaded will be inadequate

- Evening peak trains with just two carriages is ridiculous. Would like an earlier train in the morning
- 17.12 ATW from Cardiff is awful. Peak services should be a minimum of three carriages
- Overcrowding is dangerous
- I have personally witnessed 2 people faint in these GWR carriages during the summer months, when the temperature in severely crowded carriages reaches dangerously high levels.

In addition, there were particular requests:

- The 15.54 GWR service off Bristol Temple Meads should stop at Severn Tunnel Junction. This was most commented on by users of Filton Abbey Woods station
- The 07.54 off Bristol Temple Meads to stop at Severn Tunnel Junction (approx 8.15): this to fill the gap in the service at Severn Tunnel Junction that currently exists between the 07.55 GWR service and the 08.39 ATW service.

2. Car Parking

Current Car Parking Provision

Car park (Operator)	Current Cost (24 hrs)	Car Park Capacity (no. of cars)	Notes
Station Car Park (NCP)	£3.40	112	During recent months parking has been restricted to around 90 cars. This due to station and passenger footbridge upgrade. Post upgrade the capacity is due to be 112 plus 6 disabled bays. (Note: Newport Station Car Park (NCP) charges £7.50 a day)
Football Pitch Car Park (Community Council and Monmouthshire County Council)	£0.00	68	Recently upgraded at a cost of £40,000, and thanks to grants from Welsh Government and Great Western Railways. Ticket machines are yet to be set up: the charge will be £2.60 a day. Ticket machines are due to be installed in June.
Emergency Car Parks across the road bridge (Monmouthshire County Council)	£0.00	70	The main car park had £6,000 worth of improvements in the Summer of 2013 to satisfy short-term needs. The County Council are currently examining the possibility of using alternative sites, and providing additional capacity

Total 250

Over 50% of respondents are concerned at the lack of car parking provision at the station.

Nearly 20% of respondents complained about the cost of parking

Comments made included:

- Free parking should encourage more vehicles off the road
- Reduced price at weekends
- Resents paying for weekly parking only to find no space!
- Poorly lined parking spaces leading to fine!
- Pick up & Put down area / Taxi Rank needed

- Would like dedicated moped or m/cycle parking
- Electric charging points
- Need large station car park with access that by-passes the village
- Concerned parking will get worse when new M4 junction opens
- Travels by car from Chepstow because of that station's lack of parking space
- Wants a 'Parkway Station' with large parking space and direct trains to London
- Severnside Parkway should be developed at Llanwern, not Rogiet! (Note: passenger lives in Rogiet!)

See also items 10 and 11

3. Safety concerns regarding station access and station car park

Safety concerns have been expressed by 110 respondents regarding the area between Station Road and the Station itself. This represents about a third of all persons that we estimate use this route.

Note: This number discounts respondents who interchange, and those who arrive by either walking/cycling the footpath through the Sports Fields, or arrive via the Ash Path from Caldicot (that enters the car park near the Ticket Office)).

Comments include:

- Drivers travel too fast in the Car Park, need pavements and safe walking areas
- The pedestrian route from the station to the main road is positively DANGEROUS and in bad weather pedestrians get soaked by passing cars due to poor drainage.
- Designated Pedestrian Footpath needed through car park as well as up the entrance lane.
- Lighting on the entrance lane not good enough + Need better lighting on the entrance lane
- I've been struck by cars three times over the last 2 years.
- Parking spaces at the entrance should be taken out and a safe pedestrian access/egress installed.

Please note the letter in the appendix.

Three pedestrian users complained of being hit by passing cars in the lane.

4. Ticket Office:

Comments were primarily about the opening hours, need for a ticket machine and the manning levels.

The nineteen per cent of all respondents - 56 persons - commented on the number of hours/days of the week the ticket office wasn't open (Note: if we exclude those interchange respondents the percentage rises to 22.2% of respondents).

In addition, 50 persons also commented on the lack of ticket clerks at peak times. This was jointly the third biggest area on contention among respondents who are likely to buy tickets at the station.

The Ticket Clerk (Michelle) also came in for much praise.

Comments included:

- There are no ticket machines for collecting pre bought tickets. This means having to drive 20miles to Newport to collect them, and the day before travelling
- No ticket machine when ticket office is shut
- Ticket Office needs to be open for longer
- Extra ticket staff needed, particularly on Mondays
- Why can't Michelle sell monthly tickets in advance? (e.g. on Fridays!)
- The ticket office cannot meet the needs during rush hour
- Lack of ticket staff adds to barrier problem at Bristol Temple Meads
- Can't get a ticket because of queues, then stopped from catching train by ticket inspectors
- We need external ticket machines both to relieve pressure on the ticket office, and also to enable passengers to buy tickets when the office is closed.
- There should be a self ticket machine as the cabin is often very busy even though Michelle tries her best to get through the queue. This is especially a problem when Arriva Trains Wales inspectors turn up questioning why people haven't purchased tickets in advance and preventing people from boarding the train. STJ is a no penalty fare station, so if you expect people to purchase before they board the train, get better facilities.
- Ticket staff in the evening?
- Michelle, who operates the ticket office franchise provides an excellent service and always goes out of her way to assist,

5. Shelter on platforms and other facilities around the station

- Lack of shelter on platforms attracted 60 comments, and
- Lack of toilets attracted 70 comments

Comments on other facilities included (number of respondents in brackets):

- Need for warm and safe waiting area (51)
- Lack of refreshments availability (50)
- Congestion / safety on platforms (15)
- Station signage (4)

Comments included:

- Signage to say where which platforms are, and train destinations from those platforms
- Steps on footbridge are dangerous when wet
- (Station) more like a Mickey Mouse set up at the moment with a part time Portakabin and no facilities, and really needs multi story car park. Missed opportunity really for a cafe/shop too?
- Potentially the most soul-destroying place I have ever visited. I genuinely fear for my sanity when I have hour-long waits for connections here.

- Lack of information about delayed trains
- No Wi-Fi
- Safety for lone travellers, especially at night
- Need a phone
- Be good to see some historical information about STJ and the Tunnel displayed at the station. In addition station needs 'soft' landscaping
- No online/app function for daily tickets to Cardiff, only for travel further afield.
- Clean seats and shelters; Planters and other means of making station look attractive and cared for!

6. Interchange (transfers from / to Cheltenham line)

Forty three respondents commented that they wanted better connections off the Cheltenham line to Bristol.

Fifty six respondents commented that they wanted one or more of:

- More trains on the Cheltenham line
- All trains to Cheltenham to stop at Severn Tunnel Junction
- A regular service on the Cheltenham line
- Direct trains from Lydney & Chepstow to Bristol

Given that only 67 Lydney, Chepstow or Caldicot respondents travel by train via Severn Tunnel Junction, a number of comments were received. These included:

- The fact you have to change from Chepstow to get to Bristol makes it a hugely lengthy journey. If the service went straight through many more people would travel by train. Without it the journey takes 90 minutes: sometimes 3 x longer than driving.
- Be great if MCC could encourage more across the border train travel. It would make our area more viable.
- More trains to Birmingham
- All Cross Country Nottingham service should stop at STJ,
- Be good if London trains stopped and connected with trains to/from Lydney & Chepstow.
- Integrated transport to Bristol not entailing multiple changes would be very useful. Current services are orientated from Wales to London or the Midlands. Severn Tunnel Junction (STJ) is not being used effectively as a hub.
- STJ to Lydney train quite often doesn't turn up! With NO information given that it was going to be late or cancelled, and no information given to explain delays
- Need good interconnections from Lydney to Bristol

Note regarding difference in numbers between those interchanging in the morning, versus those interchanging later in the day:

> Because of the generally longer waits between connections in the evenings, we believe some walk back to Severn Tunnel Junction, or get a lift to Caldicot or Chepstow. For comments about the Caldicot to Severn Tunnel walking link see ‘Walking and Cycling.’:

7. Walking and Cycling

Thirty one respondents stated that they wanted more cycle storage provision. Some of these were concerned about security of their bikes (possibly following a spate of incidents involving partial or complete cycle theft last year – as reported to the Transport Police) and asked that lockable storage be provided.

Other comments included:

- Better foot / cycle path between Caldicot and STJ
- If there was a proper footpath from Caldicot to STJ - maybe from the rugby club area - I would walk to the station.
- Safe walking & cycling path from Undy and Magor (six respondents commented on this!)
- CCTV on bike sheds.

8. Trains

A number of respondents commented about the trains, as:

- Seventy six respondents claimed that the cost of parking, in addition to the cost of rail tickets, made train travel only marginally financially viable (passengers to Newport and Filton Abbey Wood predominated in this category)
- Thirty respondents called for either direct trains to London to stop, or a direct service to Bristol Parkway
- Twenty four respondents commented detrimentally about the condition or cleanliness of rolling stock, and/or the price of train travel, and/or the lack of designated cycle storage on trains.
- Several respondents wanted all Bath trains to stop at Severn Tunnel Junction
- Quite a few wanted more timetabled trains between Cardiff and Bristol
- Nine respondents asked for either earlier or later trains from Bristol (one cited the problems of getting a train following an evening theatre visit), More wanted earlier rather than later trains.

Other comments included:

- Need a Cardiff bound train between 07.56 and 8.38
- Particularly keen that the 15.01 and 16.01 off Filton Abbey Wood stops at STJ
- More carriages needed when big events are taking place in Cardiff (e.g. Rugby Internationals)
- More timetable choice at weekends
- Looking for re-assurance for child safety when young travellers are alone on the train
- More space for bikes on trains
- Please can the Newport to London train stop at Severn Tunnel at least once in the morning and the evening
- We have never used this station, and drive over to Bristol Parkway instead to catch a train to London. We never travel westbound by train...
- Lack of information at STJ about delayed trains
- Toilets on the train are poor.
- Several complained that the train heating is switched on in summer: it makes overcrowding even more unbearable
- Rises in Season ticket prices have been too steep of late
- As a strategic route between Cardiff and the Midlands, consideration should be given to electrifying that route

9. Buses

Twenty four respondents commented on the subject of buses

These were some of the comments:

- Have to run to get bus at Rogiet Pool (Lives in Undy)
- Need a bus service that is reliable: the one that has recently been cancelled was very unreliable. I need a bus shortly after 8.00am due to child care being provided.
- Bus service didn't connect! Grass Routes reliability?
- When the bus was still running it only came to the station from one direction (Magor) and was infrequent. Usually using it entailed a 50 minutes wait for the train.
- Bus service to Magor requested
- Bus: Caerwent to Station.
- If there was a good bus service I would catch the bus! No Grass Routes bus service for early trains?
- Better bus turning area so regular scheduled 74 services can serve Severn Tunnel Junction to replace the recently withdrawn 75 service.
- I have difficulty walking and do not drive, there used to be a bus that went into the station car park which was excellent for me, unfortunately this service has stopped so I can no longer use the train station as it's too far to walk from the nearest bus stop on the main road. I would like to see this bus service reintroduced, thank you.

10. Parking over the road bridge

The following comments have been made by respondents. Several mentioned safety, security and lighting in the 'Emergency' parking area.

- Could do with steps up the embankment as a short cut to the road bridge
- Concerned about security in Emergency Car Park
- Safety walking to Emergency Car Park
- Need lighting on road bridge
- Wants lighting in Emergency Car Park

11. Parking in Rogiet village, and access to the B4245

Approximately twenty comments were made, mainly by Rogiet residents. The following gives a taste of those issues that are concerning these people:

- Annoyed at commuters cars clogging up residential streets. Feels local roads (including B road) were never built for current level of traffic
- Need controlled access onto the 'B' road from Station Road
- Road access to station from main roads and m/way is poor
- The parking in residential streets is horrendous and is causing a serious risk to pedestrians, especially children crossing roads between parked cars and trying to catch the school bus.
- I live in the village and unfortunately it has become a car park village
- Number of cars driving up & down Station Road is a problem
- Concerned about station road access post M4 improvements
- Thinks station will get busier when new M4 is built - need direct access to car parking off 'B' road
- Ideally new car park with access that by-passes Rogiet village
- Living in Rogiet I get fed up with commuters parking in our streets, particularly those who park across my driveway
- "Road access remains poor, and driving behaviour through the village is also questionable as people rush to meet trains."
- Need more road calming measures at the station, in the village, and particularly outside the school. People drive too fast.

12. Rail Replacement Buses

Quite a bit of concern was expressed regarding the plans for the period when the Severn Tunnel will be closed. This is a taste of the responses received:

- Poor communication regarding the closure in September, more information needed from all parties.
- Concerned by the lack of information being released by GWR with regards to the replacement bus service or alternative routes (i.e. via Gloucester) during the tunnel electrification works. Considering my season ticket runs through to November 2016, I expect to be given a comparable service - that is what I paid for.
- With an annual season ticket I'm concerned whether or not I will be able to use it when the tunnel is shut.

In addition STAG (Severn Tunnel Action Group) are aware that commuters do not want to be taken by bus to Bristol Parkway, but rather directly to Bristol Temple Meads. Also that their starting and ending times at work aren't compromised.

13. Other comments

- The dependence on Bristol of this part of SE Monmouthshire isn't understood or appreciated
- Station needs clean seats and shelters*; also planters and other means of making station look attractive and cared for!
- Station needs a public telephone
- Contractors to Network Rail have been blocking the car park with vehicles at peak travel times…. This is dangerous.(at lest two other comments like this)
- Re: 7.25 Cross Country and overcrowding - Never get a seat and if you can its in first class and your thrown out by the conductor.
- The price to travel from South Wales to London is extortionate. If you compare the pricing from say Birmingham to London our fares are far more expensive. I'm a small businessman and feel that rail prices discriminate against business in Monmouthshire.

14. Respondents asking for a Magor/Undy Station

This totalled 12 respondents (unprompted)

* STAG (Severn Tunnel Action Group) state that they have witnessed people using the Passenger Shelters as if they were Public Toilets. Other parts of the station have likewise been used. They are aware that the Station Cleaning Team occasionally face unsavoury tasks, and with limited resources (e.g. no access to running water when Ticket Office is closed.)

Appendix

1. Where respondents live

Nearest Town or Village to where you live	No. of responders	Nearest Town or Village to where you live	No. of responders
Abergavenny	1	Bath	1
Bridgend	1	Bristol	1
Brockweir	1	Caerleon	3
Caerwent	16	Cardiff	2
Caldicot	86	Chepstow	50
Cinderford	1	Coleford	1
Crick	1	Cwmbran	1
Devauden	2	Itton	1
Langstone	3	Llanfihangel Rogiet	1
Llangwm	2	Llanvair Discoed	4
Llanvaches	3	Lydney	16
Magor	50	Monmouth	4
Newport	3	Penderyn	1
Penhow	3	Pontypool & Little Mill	2
Portskewett	18	Pucklechurch	1
Pwllmeyric	1	Raglan	1
Redwick	1	Rhoose	1
Rogiet	57	Shirenewton	6
St Braivels	1	Staunton	1
Sudbrook	3	Treharris	1
Trellach	4	Tutshill	1
Underwood	1	Undy	55
Usk	5	Woolaston	1
Wooton-under-Edge	1		
		Total	**421**

2. Respondents rail destinations

415 respondents

Station	No. of respondents	Station	No. of respondents
Barry Docks	1	Gloucester	3
Bath Spa	12	London Paddington	17
Birmingham	3	Lydney	2
Bristol Lawrence Hill	1	Nailsea & Blackwell	1
Bristol Parkway	5	Newport (S. Wales)	17
Bristol Patchway	3	Reading	1
Bristol Temple Meads	202	Rhoose (Cardiff)	1
Cardiff	57	Salisbury	2
Cardiff Bay	2	Southampton	2
Carmarthen	1	Swansea	1
Catthys	1	Swindon	1
Cheltenham	1	Weston–super-Mare	2
Filton Abbey Wood	76		
		Total	**415**

3. Data for Footfall Survey

The following pages show the data collected on the following days:

- Tuesday 10 May, 2016, between 06.00 and 10.00hrs
- Wednesday 13 April, 2016, between 10.00 and 20.30hrs
- Thursday 26 May, 2016, between 20.30 and 00.15hrs the following day

The report appears as item 15 on page 26

Footfall at Severn Tunnel Junction Station

on Thursday 14 April, 2016 (10.00 'til 20.26), Tuesday 10 May, 2016 (6.00 'till 10.00am), Thursday 26 May, 2016 (20.30 'till 00.15)

Time	to Cardiff						to Bristol				to Cheltenham				Notes
	GWR		AXC		ATW		GWR		AXC		AXC		ATW		
	Join	Alight	Join	Alight	Join	Alight	Join	Alight	Join	Alight	Join	Alight	Join	Alight	
6.17	3	0													
6.31					0	4									
6.39													1		1 bike on
6.50	4	1													1 transfer off
6.53							52	1							
6.58			4	3											3 transfers off
7.05											4	0			3 bikes on
7.14	14	0													
7.25									77	0					1 bikes
7.39													3	1	
7.42			18	26											26 transferred off, 1 bike on & 1 off
7.56							122	2							2 bikes on
7.56	19	0													1 bike on
8.26							54	0							3 bikes on
8.39					14	9									8 transferred off
8.49	5	0													
8.55							27	0							
9.26							6								
9.38					0	0									
9.41					10	3									
9.47	4	3													1 transfer off
9.55							15	0							1 bike on
10.26							5	1							
10.38													1	1	
10.49	5	6													
11.26							4	2							
11.40					1	1									
11.48	2	3													
12.26							7	1							

12.39															5	3		
12.39					3	0												
12.47	1	7																
13.26								2	3									
13.39															0	0		
13.47	4	6																
14.26								1	5									
14.39					1	0												
14.49	1	5																
15.26								3	5									
15.29					1	0												
15.39															1	5		
15.48	1	30																
16.26								3	11								1 bike on	
16.38															1	4	1 bike on	
16.49	0	9															Very late - arrived at 17.23	
16.56								1	6								1 bike on	
17.16	7	91															11 t/fers, 2 bikes off	
17.26								0	39									
17.39															19	11		
17.40					3	6											1 bike off	
17.48	1	67																
17.55								5	21									
18.15	1	48															1 bike off, 3 t/fers	
18.26								0	14									
18.38					3	3												
18.40	7	4															1 t/fer	
18.53								1	27									
18.55								1	4									
19.15	0	13															1 t/fer	
19.26								1	10								1 bike off	
19.41					0	10												
19.46	0	5															1 t/fer	
20.15														4	0			
20.16	0	7																
20.26								4	7									
20.36			1	10														

20.38					0	0													
21.13	0	2																	
21.25								0	8										
21.38																	0	3	1 T/fer
21.46	1	1																	
21.54								0	2										
22.01			0	4															2 t/fer
22.17	0	2																	
22.35								2	3										
23.11								0	3										I t/fer
23.16	0	6																	
23.54					0	0													
0.01								0	3										
0.15															1	0			Replacement bus
total	**80**	**316**	**23**	**43**	**36**	**36**		**316**	**178**	**77**	**0**		**9**	**0**	**31**	**28**			

Time	**to Cardiff**							**to Bristol**					**to Cheltenham**					
	GWR		**AXC**		**ATW**			**GWR**		**AXC**			**AXC**		**ATW**			**Notes**
	Join	Alight	Join	Alight	Join	Alight		Join	Alight	Join	Alight		Join	Alight	Join	Alight		

4. E-mail regarding safety on the approach road

From: (E-mail address withheld by reports authors[3])
Sent: 13 May 2016 07:55
To: Contact <Contact@monmouthshire.gov.uk>
Subject: Seven Tunnel rail - survey

Morning,

Yesterday I did the above survey and my main point was pedestrian safety in the car park or on the platform.

Car park- Safe access as there is no pavement or step up onto the road bridge so we have an unsafe walk.

Platform- new handrail holding people next to the yellow line while 125's pass (set back under the main access ramp, safety and shelter as the main shelter on the East is full)

With regards the car park the main issue was safe access as there is no pavement. Last night I was struck by a car trying to drive past another, while trying to walk out of the car park. Luckily it was just a glancing blow for my arm on the wing mirror which was bent in (Jag LE III), arm hurts.

Please can the comments in the survey be taken seriously re the safe pedestrian access. Can this be passed onto the relevant team.

Regards

See note 3 below

[3] This is to protect the author and follows legal advice

Severn Tunnel Junction Station Consumer Questionnaire (2016)

Kindly complete the form and place it in the 'Survey' box provided in the ticket booking hall. You can also complete it on-line by going to: https://www.surveymonkey.co.uk/r/SevernTunnelJunctionstation

Please respond before 10.30am on Monday 16th May.

1. Your nearest town or village?

2. Your gender

- ☐ Male
- ☐ Female

3. Your age (Please select one answer):

- ☐ Under 15
- ☐ 15 -24
- ☐ 25-44
- ☐ 45-64
- ☐ 65 or over

How do you travel?

4. For how many years have you been using Severn Tunnel Junction station? (Please tick one box only):

- ☐ Less than one year
- ☐ 1 – 5 years
- ☐ 6 – 10 years
- ☐ More than ten years

5. How many times a month do you normally travel by train using Severn Tunnel Junction? (Please select one box only):

- ☐ Once a month
- ☐ More than once, but less than four times a month
- ☐ At least five times a month (but not daily)
- ☐ Two or three days a week
- ☐ Daily (At least four times a week)

6. To which station do you most frequently travel? (Please name the station):

7. What time train do you generally catch from Severn Tunnel Junction Station? (Please state the time using the 24 hour clock e.g. 07.26)

Outward Journey (departure time)

Return Journey (arrival time)

8. Do you normally change trains at Severn Tunnel Junction? (Please select one box only):

☐ Yes

☐ No

9. From which of the following stations do you normally commence your travel? (Please select one box only)

☐ Severn Tunnel Junction

☐ Chepstow

☐ Caldicot

☐ Lydney

Other (please specify)

10. How do you normally travel from your home to/from Severn Tunnel Junction Station? (Please select the answer that most usually applies)

11. Please state your main reason for travelling by train today:

What are your main concerns/needs? *In the spaces below please tell us about your single biggest concern or needs . . .*

12. Regarding the station premises and parking

13. Regarding the trains you most regularly use – as in question 7 above

14. Any comments about Severn Tunnel Junction station or the services operation to, from, or at it:

All information supplied will be held by Monmouthshire County Council in accordance with the Data Protection Act 1998 and will remain secure and confidential. Your details will only be used by departments within the council and Severn Tunnel Action Group, who have commissioned this questionnaire, for the purpose station improvements. It will not be passed on to any other parties or used for marketing purposes.

Readers Notes

Published by

Severn Tunnel Action Group

and

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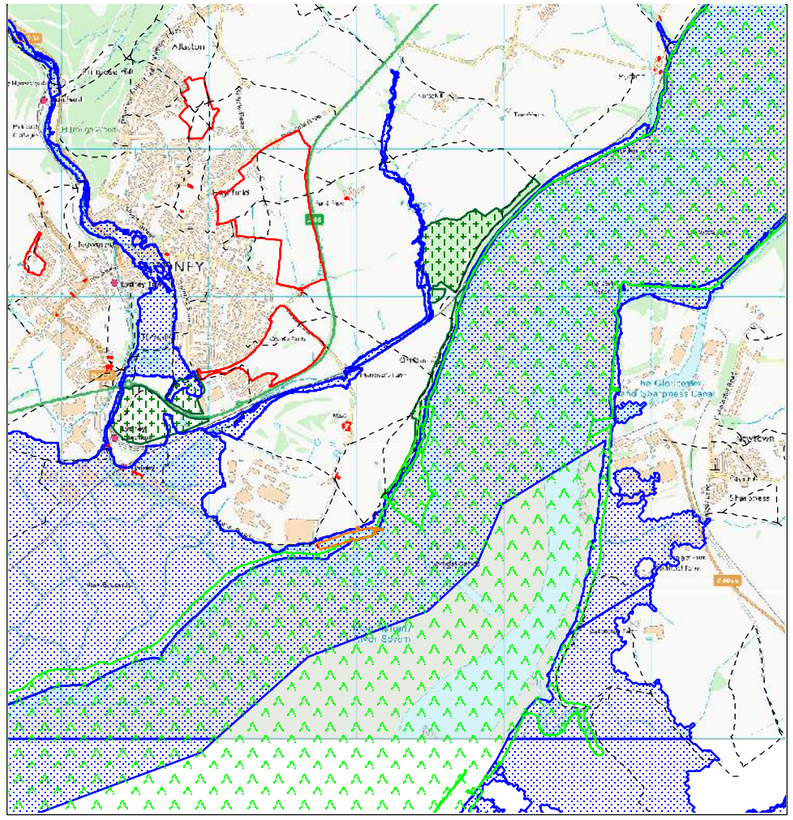
Monmouthshire County Council
8 June 2016

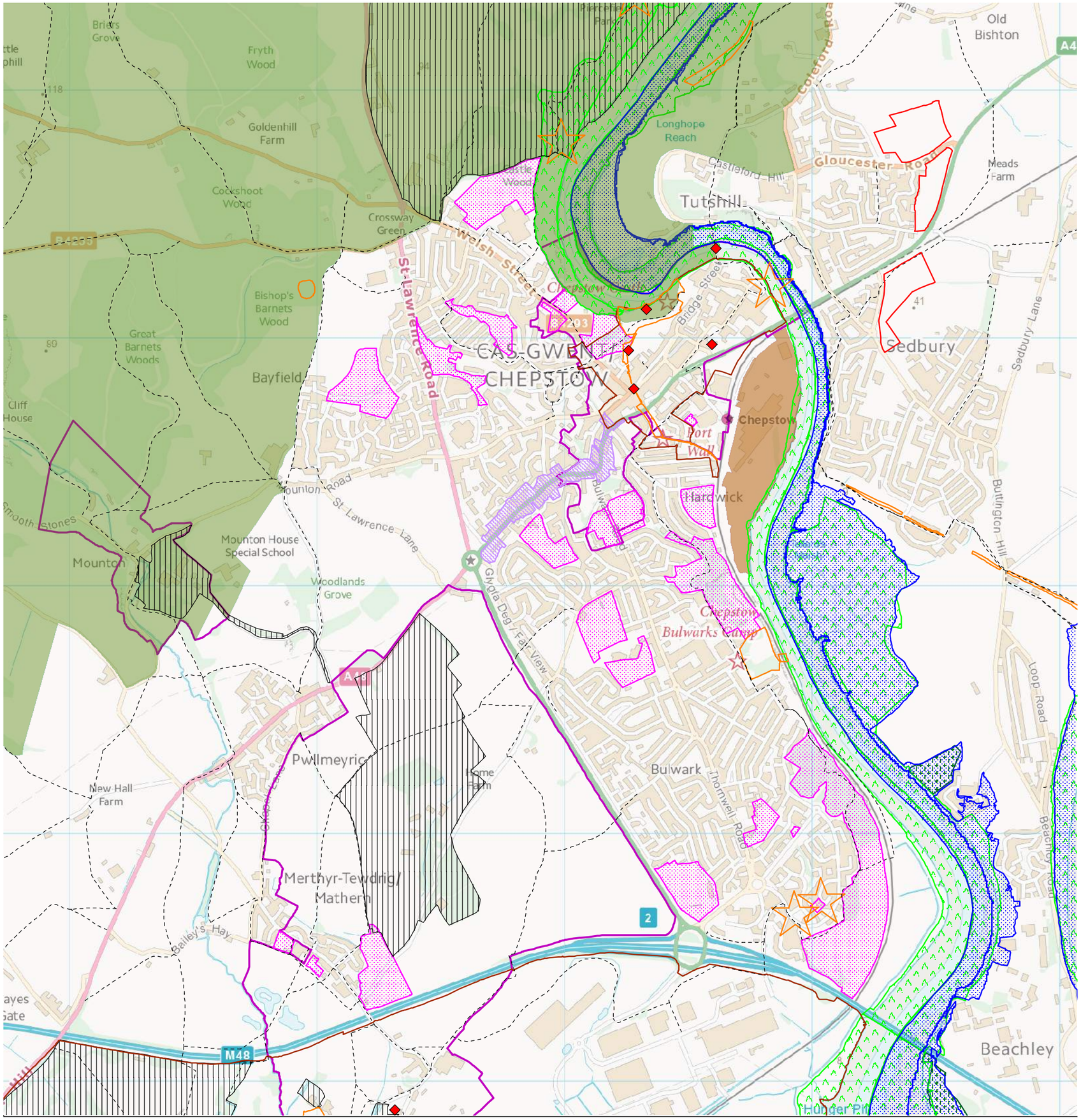
Appendix G
Constraints Map

Study Area Constraints Map



Legend:

- Area of Outstanding Natural Beauty
- Strategic Mixed Use Site
- Parks and Gardens
- Ancient Monument
- Housing Allocations
- Air Quality Management Area
- Sites of Special Scientific Interest
- Flood Zone
- Conservation Area
- Area of Amenity Importance
- Key Wildlife Sites
- Archaeologically Sensitive Area
- Public Rights of Way
- Listed Buildings



Appendix H

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

Highways England and
Welsh Government

Severn Crossing Tolls: Model Build and Options Assessment

Technical Report

Issue | 26 October 2018

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 256434

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ARUP

Contents

Appendices

1 Introduction

1.1 Background

In July 2017, UK Government announces that tolls would be abolished at the Severn River Crossings by the end of 2018. On 2 October, a further announcement was made that tolls will be abolished on 17 Dec 2018.

This report is provided by Highways England and the Welsh Government. On our behalf, Arup have developed the Severn Crossings Transport Model (SCTM) to improve our understanding of the impact of traffic demand on performance of the Strategic Road Network (SRN) in England and Wales following the UK Government's decision to abolish tolls before the end of December 2018. An expanded modelled area has been considered to a greater level of detail and accuracy, through combining data from three donor models which encompass the English and Welsh networks around the Severn Crossings.

The new Severn Crossings Transport Model (SCTM) provides:

- more realistic estimates of the short-term (2019) and medium-term (2024) impacts of removing the tolls, taking account of the ramping up of the demand response over time
- an improved understanding of the impact on traffic conditions on the Strategic Road Network in England and Wales as well as some major local roads
- a tool for modelling and appraising potential interventions and mitigations measures, including as part of forthcoming detailed study work by Highways England to inform future Road Investment Strategy (RIS)

1.2 Impact Assessment

This report sets out the findings of an impact assessment carried out using the new SCTM model. The assessment considers the implications for traffic conditions of the short-term and medium-term changes that are expected to result from the removal of the tolls.

The impact assessment is focused on, but not limited to, the SRN in England and the Trunk Road Network in Wales. A key objective of the impact assessment is to identify a number of 'key priority areas' (in both England and Wales) that would be the focus of any options identification exercise in relation to mitigating highway measures.

This report includes estimates of the changes in traffic flow following the removal of the tolls and provides an indication of where issues of congestion are likely to worsen. The impact of tolling (and in particular the removal of tolls) on travel demand and traffic patterns is a highly challenging area. This is both because of the limited number of examples of toll removal elsewhere and because the impacts of tolls on traffic demand is highly context specific. As a consequence,

there is a level of uncertainty associated with the estimates set out in this report. Notwithstanding these challenges, the modelling work has been undertaken using up to date modelling techniques and in accordance with good practice.

2 Approach

2.1 Severn Crossings Transport Model

The development of the SCTM is described in detail in the Model Development Report. Essentially, the original Severn Crossings model was retained as the starting point for model development. This development incorporated a much greater level of detail and accuracy on the English side of the Severn, particularly in the West of England urban area. The additional detail was derived from information extracted from the South West Regional Traffic Model and the M49 Avonmouth Junction Traffic Model, as illustrated in Figure 2.1.

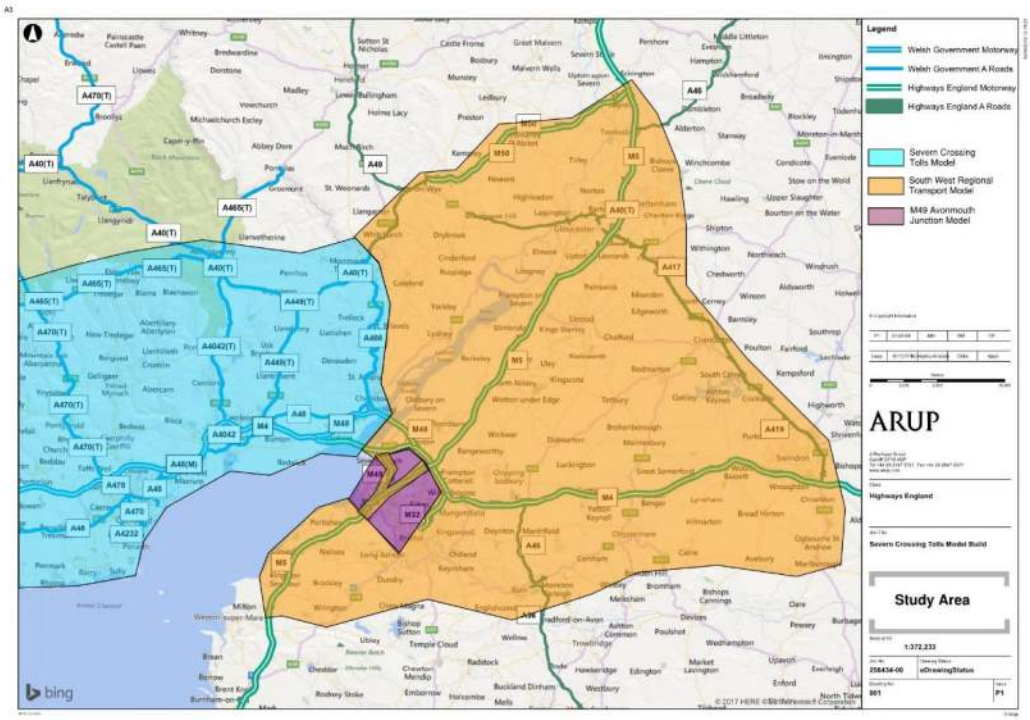


Figure 2.1: Severn Crossings Transport Model Development

The SCTM uses variable demand modelling to consider the effects on travel demand and trip distribution that result from changes in travel times and costs, including changes to the toll charging regime across the Severn. Responses to these changes are considered separately for five different travel demand segments:

- Cars – Commuting
- Cars – Employers' Business
- Cars – Other
- Light Goods Vehicles
- Heavy Goods Vehicles

2.2 Modelling Traffic Responses to the Severn Tolls

During the concession period the Severn Crossing Tolls were fixed in real terms, with toll charges being increased annually in line with the rate of inflation.

Following the transfer of the crossings to public ownership on 8 January 2018, toll charges were reduced to reflect the fact that VAT is no longer charged, whilst no inflationary increase was applied between 2017 and 2018. Tolls are due to be removed completely by the end of 2018. Table 2.1 shows the tolls charged at the crossings in recent years.

Table 2.1: Severn Crossing Toll Charges

Year	Cars	Light Goods Vehicles	Heavy Goods Vehicles
2015	£6.50	£13.10	£19.60
2016	£6.60	£13.20	£19.80
2017	£6.70	£13.40	£20.00
2018	£5.60	£11.20	£16.70

Model forecasts have been developed for 2019 (representing a short-term response to toll removal) and 2024 (medium-term response). For both years, three toll charge scenarios have been modelled:

- Full Toll (equivalent in real terms to the toll prices for the period 2015 to 2017 in Table 2.1 which include VAT)
- Post-Concession Toll (equivalent in real terms to the toll prices charged in 2018 in Table 2.1 to which VAT is no longer applied)
- No Toll (tolls no longer applied and toll booths removed)

Behavioural responses to the removal of the tolls are expected to play out over different timescales, and the model has been developed in such a way to reflect this. For example, route choice responses for westbound traffic would be expected to occur immediately. In contrast, choices about where to live or work will take time to adjust to the new circumstances. In general, it is expected that the change in traffic using the Severn Crossings as a result of the removal of the tolls will be lower in the short term than in the long term.

Toll booth delays are also incorporated into the transport model. Delays are significantly longer on the M4 Prince of Wales Bridge (formerly the Second Severn Crossing) than on the M48 Severn Bridge, and are most severe in the PM Peak, particularly on Fridays and during holiday periods. In the PM peak, this can lead to some significant volumes of traffic switching to the M48 crossing in order to avoid the toll booth queues on the M4.

An additional No Toll scenario has also been modelled for 2024, to include the effects of implementing the proposed M4 Corridor around Newport (M4CaN) scheme, comprising a new 3-lane motorway to the south of Newport, between Junction 23 and Junction 29.

2.3 Impact Assessment

An exercise has been undertaken to identify the key congestion problems that may result from the removal of the tolls. From this analysis a number of 'key priority areas' have been identified which are likely to form the focus of any options identification exercise to examine potential mitigating interventions.

Parts of the Strategic Network in South East Wales and the South West of England are already congested and will continue to be so irrespective of the toll charged on the Severn Crossings. Existing conditions are described in Section 3.4 of this report. Amongst other areas, this particularly highlights existing congestion issues at the M4 around Newport to the west of the Crossings and on the motorway network serving the West of England urban area including sections of the M5, the Almondsbury Interchange and on the M32 between Bristol and Junction 19 of the M4. Consequently, the approach has been to identify those sections of the network for which the removal of the tolls either causes or substantially exacerbates congestion.

3 Existing Conditions and Trends

3.1 Traffic Flows

As shown in Table 3.1, the two Severn Crossings carried a combined Annual Daily Traffic (AADT) flow of 87,800 vehicles in 2017. The M4 Prince of Wales Bridge carried 68,200 vehicles[1] in total across both directions on an average day in 2017, whereas the M48 Severn Bridge carried 19,600 vehicles[2]. This reflects the current role of the M48 Severn Bridge, which serves a more localised catchment area with a high proportion of trips starting or finishing their journey in Monmouthshire/ West Gloucestershire. In contrast, the M4 Prince of Wales Bridge is more strategic in nature, as the main road link between the South and West of England and South Wales.

Table 3.1: Severn Crossings – Observed Traffic Volumes

Annual Average Daily Traffic, 2017	Eastbound Vehicles	Westbound Vehicles	Two-Way Traffic Flows
M48 Severn Bridge	9,982	9,598	19,580
M4 Prince of Wales Bridge	35,657	32,512	68,169
TOTAL	**45,639**	**42,110**	**87,749**

There is a small but significant directional imbalance in traffic flows with around 8% less traffic using the Severn Crossings westbound compared with the eastbound direction. This suggests that some travellers are deterred from paying the westbound tolls and find alternative routes through the network. This is particularly the case for heavy goods vehicles. The primary alternative routes for cross-Severn movements are via the M5/M50/A40 for longer distance trips and via the A40/A48 from the Gloucester area.

There is a degree of tidality to traffic flows with higher eastbound flows in the AM peak period and higher westbound flows in the PM peak, reflecting the fact that the dominant commuting flows are towards the employment areas of Bristol, South Gloucestershire, BANES and North Somerset.

[1] Annual average daily traffic based on Traffic Wales MIDAS data

[2] Annual average daily traffic based on Traffic Wales ATC data

3.2 Recent Trends

A comparison of traffic growth at the Severn Crossings with growth elsewhere on the motorway network is given in Figure 3.1. The Crossings' data is taken from the Severn River Crossings Annual Reports which records the number of toll-paying vehicles and therefore includes only westbound traffic.

The data shows that generally, traffic growth between 2010 and 2013 was modest in all areas. Growth since 2013 has been much stronger, in part because of the reduction in fuel prices at filling stations, which fell by over 25% in the three-year period to January 2016[3].

Overall, westbound traffic across the Severn has increased by nearly 20% since 2010. However, growth has been particularly strong since 2014, exceeding growth elsewhere on the motorway network in both England and Wales. This indicates that there is already growing demand for travel across the Severn Estuary which may itself reflect particular changes in local socio-economic conditions in the 'Severnside' area (such as increasing commuting between South Wales and the Greater Bristol Area).

Toll booth data for the first four months of 2018 also appears to show continued strong growth in traffic flows across the Severn. While it is too early to draw firm conclusions from this, it may suggest that the Post-Concession reduction in the tolls is already having some impact in stimulating further growth in traffic levels on the Crossings. Although more difficult to evidence, it may also be the case that (nearly a year on from political announcements on toll removal) some users are already changing their travel behaviour in anticipation that the tolls will be removed.

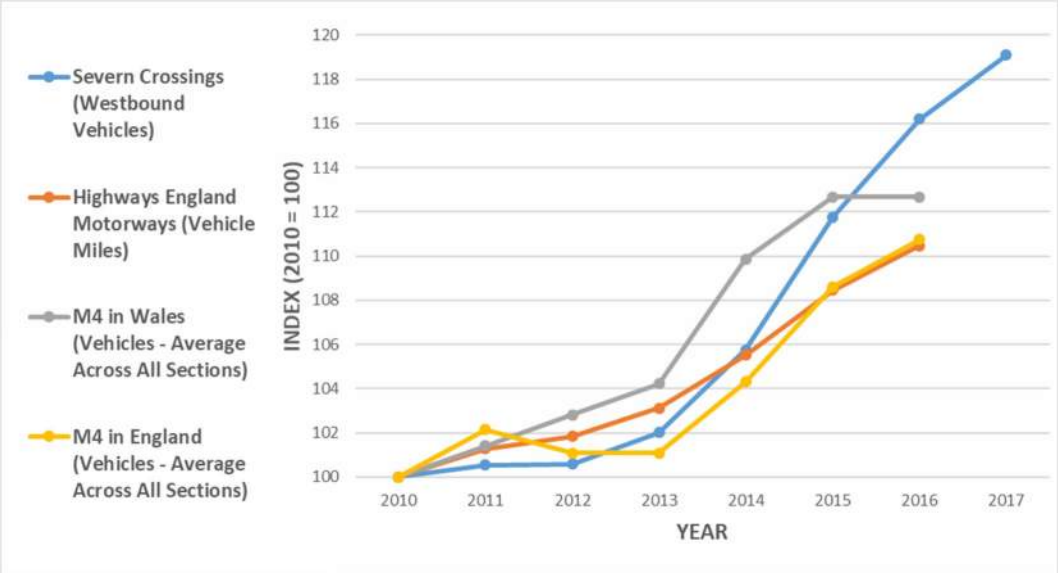


Figure 3.1: Traffic Growth Trends on the Motorway Network

[3] https://www.racfoundation.org/data/uk-pump-prices-over-time

3.3 Traffic Patterns

Figures 3.2 and 3.3 show the distribution of eastbound traffic across the two crossings in the AM peak hour using data from the SCTM base year (2015) model. The figures provide an indication of the routing of trips using the Crossings, providing evidence of the parts of the network which would be most affected by the removal of the tolls.

Figure 3.2 shows where eastbound trips approaching the crossings from Wales in the AM peak join the motorway network. It indicates that 20% of trips across the Severn join from the A466 at Junction 2 of the M48, while 78% of trips travel via the M4, the great majority from the Newport area or further west. The model shows that about 13% of trips join the M4 at Junction 24 (Coldra) which serves east Newport, while nearly 60% are longer distance movements, joining either at Junction 25A (A4042 Malpas Bypass) or at junctions west of the Brynglas Tunnels.

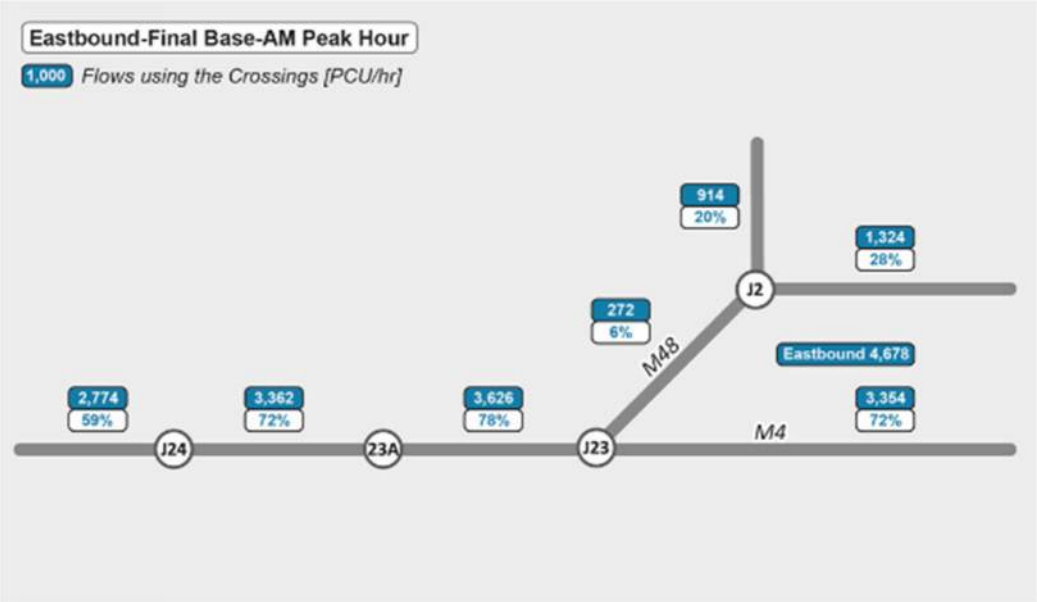


Figure 3.2: Severn Crossings Traffic Distribution, AM Peak - Eastbound

On the English side of the Crossings, trips are spread across a greater number of routes. Around two-thirds (65%) of cross-Severn trips remain on the M4 as far as Junction 20 (Almondsbury). This proportion reduces to less than half (42%) beyond the Junction with the remainder joining the M5 at Almondsbury. The M32 into Bristol accounts for a quarter of the eastbound trips, reducing to 13% south of Junction 1.

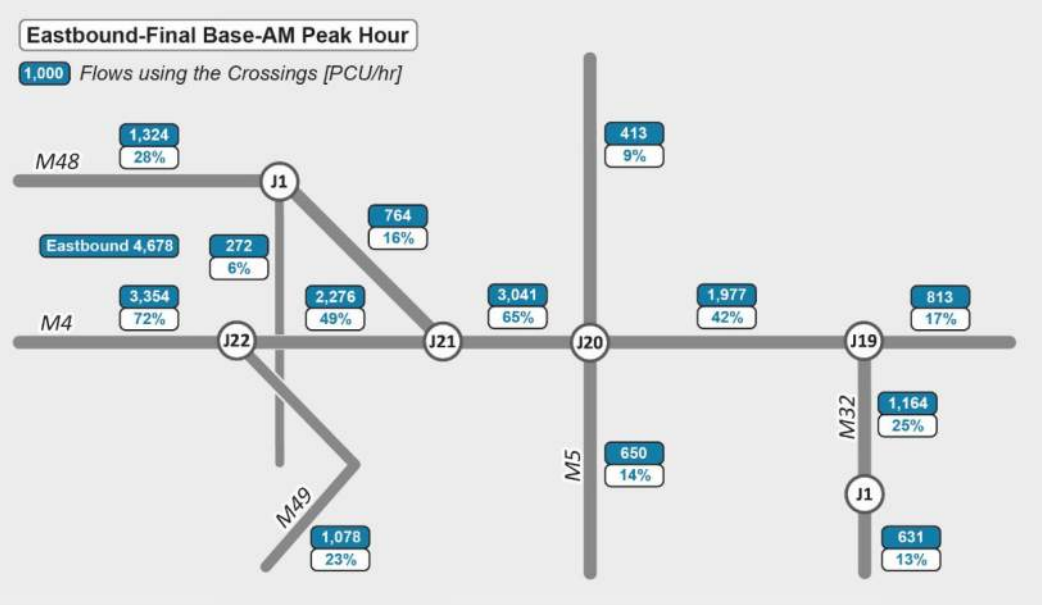


Figure 3.3: Severn Crossings Traffic Distribution, AM Peak - Eastbound

The corresponding distribution of westbound trips across the Severn in the AM peak hour is shown in Figures 3.4 and 3.5. The distribution of westbound trips across the network in England is similar to the eastbound trips, although the proportions of traffic using the M4 to the east of the Crossings and M32 motorways are slightly lower, while nearly 30% of westbound trips use the M49 to access the M4 Prince of Wales Bridge.

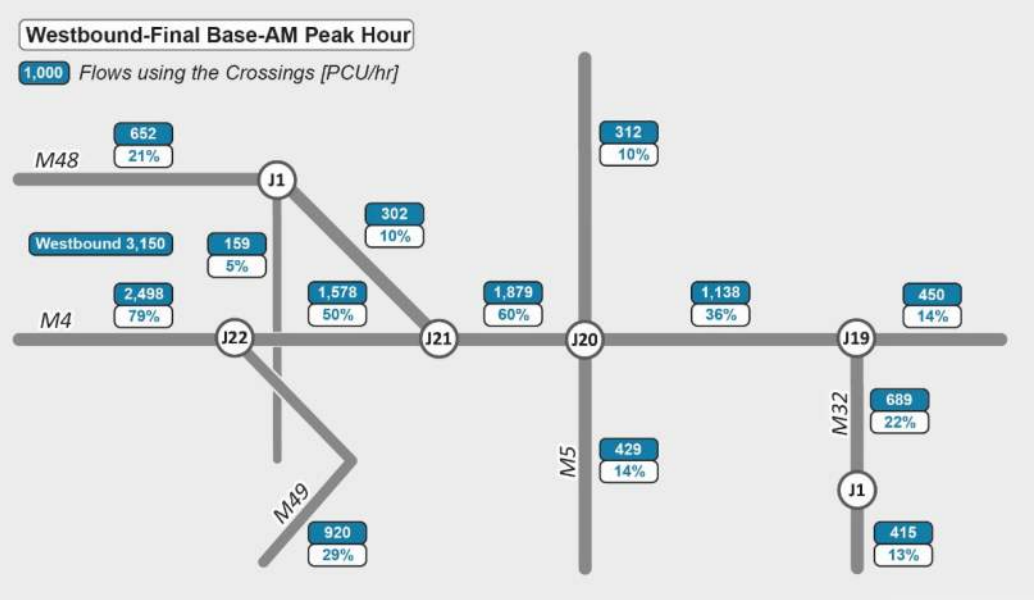


Figure 3.4: Severn Crossings Traffic Distribution, AM Peak - Westbound

On the Welsh side, the proportion of trips using the M48 Severn Bridge and the A466 is considerably lower than in the eastbound direction, with a correspondingly higher proportion of trips using the M4 towards Newport and Cardiff. This reflects the greater number of employment destinations located along the M4 corridor that attract trips in the AM peak.

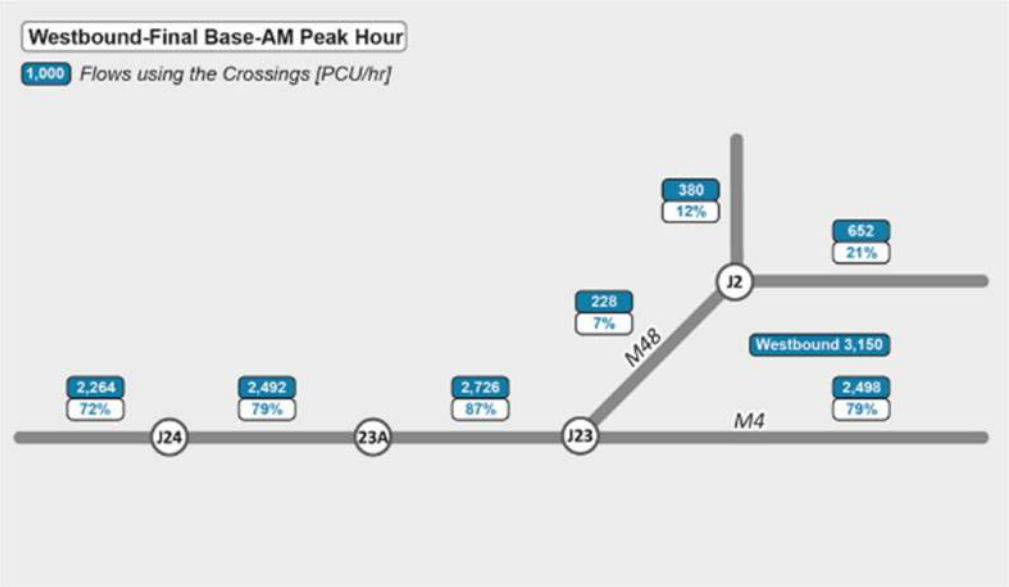


Figure 3.5: Severn Crossings Traffic Distribution, AM Peak - Westbound

3.4 Network Conditions

3.4.1 Existing Problem Locations

Figures 3.6 and 3.7 illustrate the strategic network on either side of the Severn Crossings, and identify the main existing peak period congestion points on the network. The analysis is largely focused on the Strategic Road Network / Trunk Road Network rather than local roads. Congestion issues have been identified based on the SCTM results together with local knowledge of existing traffic conditions and known problem locations across these networks.

On the Welsh side of the Severn, congestion issues are dominated by the lack of capacity on the M4 around Newport, particularly at the Brynglas tunnels (Junctions 25 to 26). While this was partially relieved by the construction of the Malpas Relief Road slip roads from Junction 25A in the mid-1990s, traffic growth since then means that the tunnels remain a major bottleneck for the South Wales region.

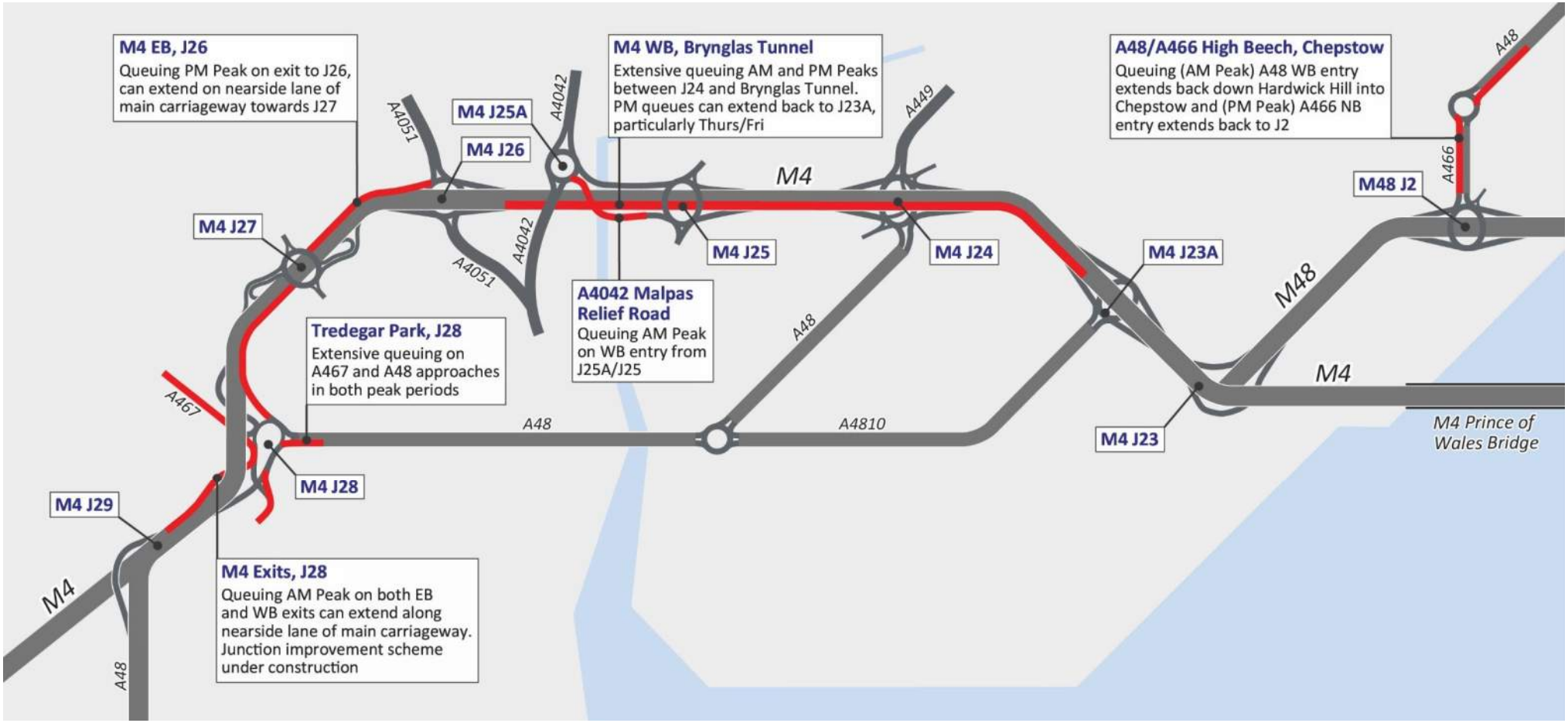


Figure 3.6: Existing Congestion Points – West of Severn Crossings

On the English side of the Severn, congestion issues are generally associated with junctions rather than link capacity, in particular the junctions giving access to the West of England urban area. The most significant of these issues are at M4 Junction 19 and M5 Junction 16.

At M4 Junction 19, congestion occurs on both entries from the M4 as well as the M32 and the closely associated Junction 1 with the A4174 Avon Ring Road. Queuing on the M4 slip roads can extend back to the mainline carriageway and interfere with through traffic on the motorway.

Junction 16 on the M5 is located very close to the M4/M5 Almondsbury interchange, where three exits from the Almondsbury interchange converge and traffic is required to weave over the very short distance (about 450m) to Junction 16. Significant congestion occurs at the Junction 16 roundabout in the AM peak associated with traffic travelling into the South Gloucestershire and Bristol urban area (and particularly the Aztec West employment area), and this combines with the short weaving area to produce lengthy queuing that can extend into the Almondsbury interchange.

The Severn Crossings themselves operate well within capacity, although as noted in Figure 3.7 there can be significant queuing and delays at the toll booths on the M4 Prince of Wales Bridge, particularly on Fridays and during holiday periods.

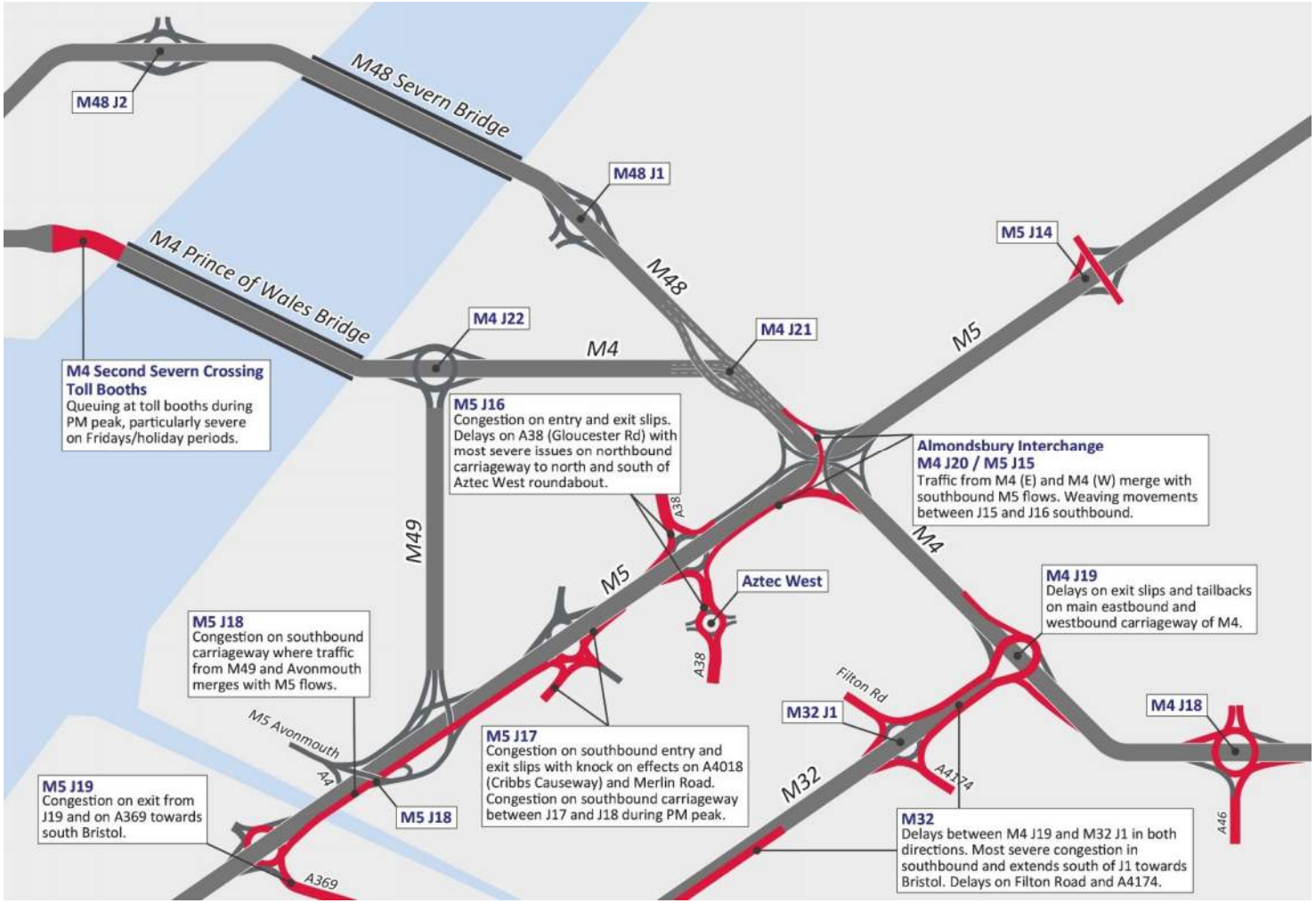


Figure 3.7: Existing Congestion Points – East of Severn Crossings

3.4.2 Forecast Link Capacity Issues

Figure 3.8 shows the forecast flow to capacity ratios on links in the 2019 forecast year. These figures only consider link capacity and therefore ignore congestion at junctions. It should also be noted that forecasts represent the averages over the peak hour, and so may not reflect the very busiest times within the peak, nor any fluctuations occurring due to, for example, holiday periods.

On the English side of the Severn, the figures show that there would be link capacity constraints on the M32 in South Gloucestershire & Bristol and on the M5 to the south of the M4.

Within Wales, the figures reflect the link capacity issues on the M4 around Newport that were noted above, particularly the key bottleneck on the approaches to the Brynglas Tunnels (Junction 25 to Junction 26).

Patterns are broadly similar in the PM peak but traffic levels are generally higher than in the AM peak.

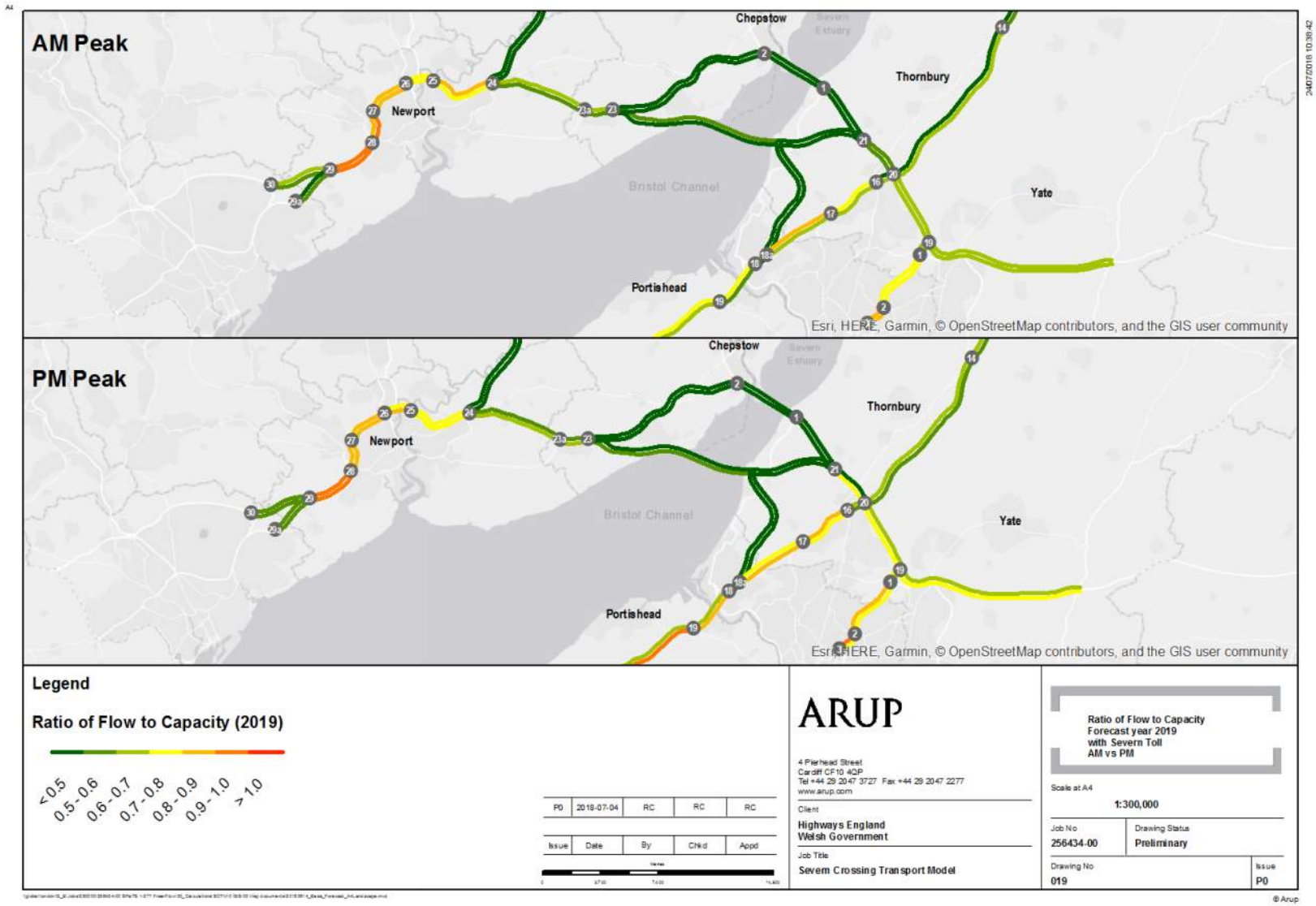


Figure 3.8: Ratio of Link Flow to Capacity, 2019 AM vs PM Peak

4 Traffic Response to Toll Removal

4.1 Impacts on Traffic Flows at Severn Crossings

Figure 4.1 shows the effect of the different toll scenarios on daily traffic volumes using the Severn Crossings in both 2019 and 2024, and indicates the percentage change from the 'full toll' scenario for each of the forecast years. The percentage changes are summarised in Table 4.1, while full details of the changes are contained in Appendix A.

As described in Section 2, the modelled toll scenarios are as follows:

- Full Toll (equivalent in real terms to the toll prices for the period 2015 to 2017 in Table 2.1 which include VAT)
- Post-Concession Toll (equivalent in real terms to the toll prices charged in 2018 in Table 2.1 to which VAT is no longer applied)
- No Toll (tolls no longer applied and toll booths removed)

The 2019 forecasts are intended to provide an indication of the short-term impacts of removing the tolls. In practice, users will take time to adjust to the new situation and as such traffic levels would be expected to increase progressively during 2019. In practical terms, forecasts for this year are representative of the uplift in traffic expected to occur 12 months after the removal of the toll.

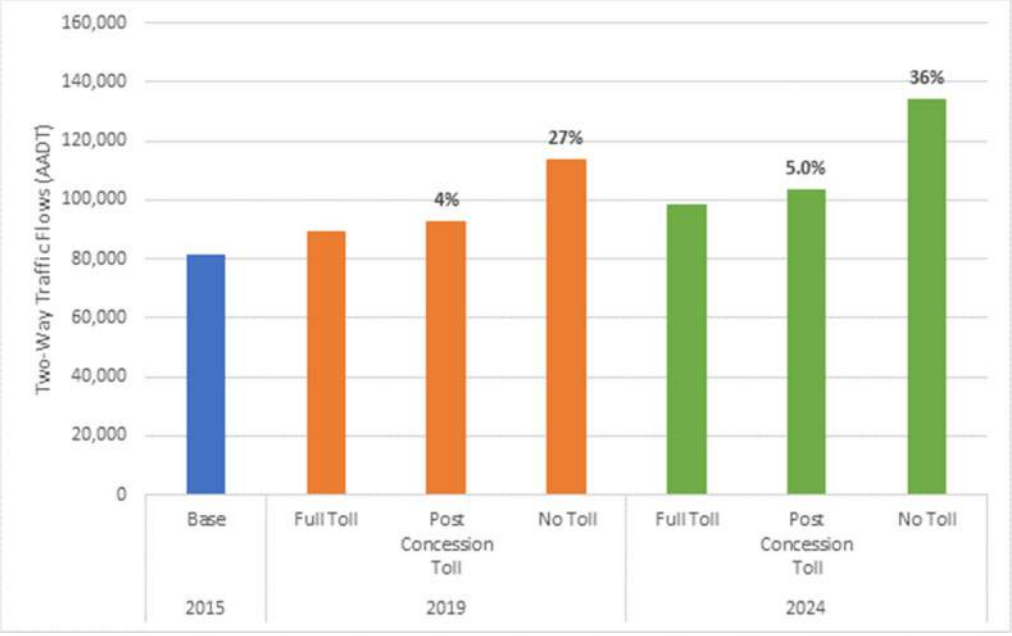


Figure 4.1: Daily Traffic Volumes at Different Toll Levels

The results indicate a small increase resulting from the change in the Post-Concession toll, and a much larger increase when the tolls are removed completely. In the short-term, the model suggests a 4% increase in traffic using the crossings as a consequence of moving to the post-concession toll. This increases to 27% due to complete removal of the tolls. By extension, the effect of

moving from the 'post concession toll' (the toll level charged in 2018) to a No Toll scenario is a 23% increase in traffic.

As previously described, the current directional imbalance between eastbound and westbound flows using the Crossings is around 8%. Given the increases in modelled traffic responses this demonstrates that demand responses (changes in trip frequency and distribution) account for the majority of the increase in traffic.

As hypothecated in Section 2.2, the response to the removal of the toll is likely to be lagged as decisions over where to live and work take time to play out. As a result, the forecast change in traffic levels are higher in 2024 than in 2019. By 2024, the model suggests a 5% increase in traffic as a consequence of moving to the Post-Concession toll and a 36% increase in traffic as a consequence of moving from Full Toll to No Toll.

Table 4.1: Percentage Changes in Severn Crossings Traffic (as compared to the 'Full Toll' Scenario

Scenario	2019				2024			
	AM	Inter Peak	PM	AADT	AM	Inter Peak	PM	AADT
Stage 1: Full Toll to Post-Concession Toll	4%	3%	4%	4%	6%	4%	6%	5%
Stage 2: Post Concession Toll to No Toll	24%	22%	23%	23%	32%	31%	26%	30%
Stage 1 and 2: Full Toll to No Toll	28%	26%	29%	27%	39%	37%	33%	36%

Figure 4.2 shows the variation in daily traffic flows between Full Toll and No Toll by direction and by crossing. This shows that the M4 crossing has a much greater increase in traffic in the westbound direction, while conversely the M48 crossing shows a much larger increase in the eastbound direction. This variation results from the removal of the delays at the toll booths for westbound traffic which, as noted in Section 2.2, are significantly greater on the M4 crossing, causing some traffic to switch to the M48. The removal of the toll booth delays results in some traffic switching back from the M48 to the M4 crossing. This effect inflates the westbound increase in traffic on the M4 crossing, with a corresponding lower increase in westbound traffic on the M48 crossing.

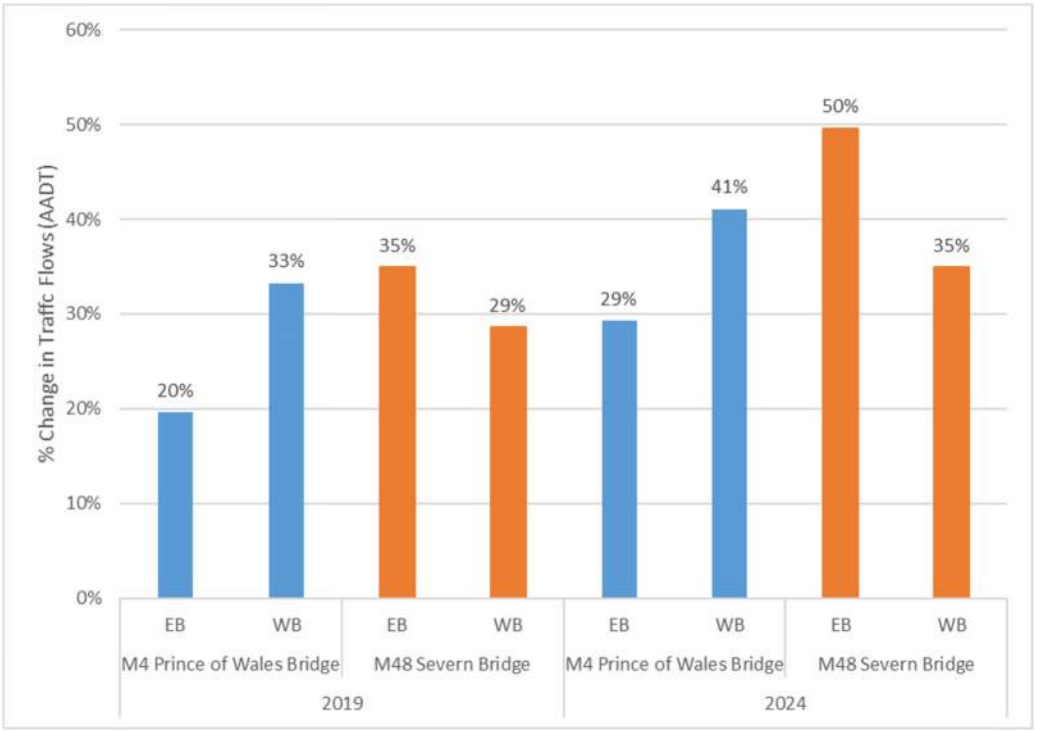


Figure 4.2: Change in Daily Traffic Flows by Crossing and Direction (No Toll vs Full Toll)

Tables 4.2 and 4.3 show the comparison between Full Toll and No Toll scenarios in more detail, for each of the modelled time periods as well as the daily flow.

The forecasts indicate a significant response to the removal of tolls on the Severn Crossings. Total traffic volumes across the Severn are predicted to increase by about 28% during the 2019 peak hours, and by 33-38% in the 2024 peak hours.

The results indicate a slightly higher response during the AM peak period than at other times of the day. This reflects the dominance of commuter traffic at this time of day, which has a much stronger response to the removal of tolls than other types of vehicles.

Table 4.2: Severn Crossings – 2019 Forecast Traffic Volumes

		M4 Prince of Wales Bridge		M48 Severn Bridge		Total
		E/B	W/B	E/B	W/B	2-way
AM Peak	Full Toll	3,180	2,300	1,170	540	**7,190**
	No Toll	3,840	2,950	1,590	840	**9,220**
	% change	+21%	+28%	+36%	+55%	**+28%**
Inter Peak	Full Toll	2,390	2,060	560	590	**5,600**
	No Toll	2,800	2,630	740	880	**7,050**
	% change	+17%	+28%	+32%	+49%	**+26%**
PM Peak	Full Toll	2,500	2,910	540	1,590	**7,540**
	No Toll	3,080	4,220	760	1,630	**9,690**
	% change	+23%	+45%	+41%	+3%	**+29%**
AADT	Full Toll	36,100	32,100	9,800	11,300	**89,300**
	No Toll	43,100	42,700	13,200	14,500	**113,500**
	% change	+19%	+33%	+35%	28%	**+27%**

Table 4.3: Severn Crossings – 2024 Forecast Traffic Volumes

		M4 Prince of Wales Bridge		M48 Severn Bridge		Total
		E/B	W/B	E/B	W/B	2-way
AM Peak	Full Toll	3,370	2,560	1,330	610	**7,870**
	No Toll	4,400	3,520	1,920	1,110	**10,950**
	% change	+31%	+38%	+44%	+82%	**+39%**
Inter Peak	Full Toll	2,670	2,180	640	740	**6,230**
	No Toll	3,380	3,090	960	1,090	**8,520**
	% change	+27%	+42%	+50%	+47%	**+37%**
PM Peak	Full Toll	2,750	2,960	630	1,880	**8,220**
	No Toll	3,660	4,240	1,020	2,030	**10,950**
	% change	+33%	+43%	+62%	+8%	**+33%**
AADT	Full Toll	39,500	34,000	11,200	13,500	**98,200**
	No Toll	51,100	47,900	16,700	18,300	**134,000**
	% change	+29%	+41%	+49%	+36%	**+36%**

4.1.1 Impacts on Traffic Flows on the Strategic Road Network

Figures 4.3 and 4.4 show the changes in traffic volumes (numbers of vehicles) resulting from the removal of tolls on the rest of the Strategic Road Network in 2019 and 2024 respectively. These show that the increase in traffic due to the removal of the tolls dissipates rapidly with distance from the Crossings, so that

there is a significant drop off in the traffic response to the east of Junction 20 and to the west of Junction 24. Changes in traffic flows then become relatively slight beyond Junction 19 in the east and beyond Newport in the west.

While this decay in the level of traffic response reflects the pattern of trips using the Crossings, it also takes account of the fact that shorter distance trips starting and/or finishing in close proximity to the Crossings are more sensitive to the toll charges than longer distance trips.

The percentage change in link flows during the peak hours that result from the removal of tolls is illustrated in Figures 4.5 and 4.6. These show that large changes in flow of 10% or more at peak times are limited to the area between the M5 (Junction 20) and the Brynglas Tunnels in Newport. Some significant changes in flow are also evident on the M49. The figures confirm the rapid decay in the increase in traffic with distance from the Crossings. The largest increases occur on the Crossings themselves and their more immediate approaches. On the English side of the Severn, this extends to the Almondsbury interchange with the M5 at Junction 20.

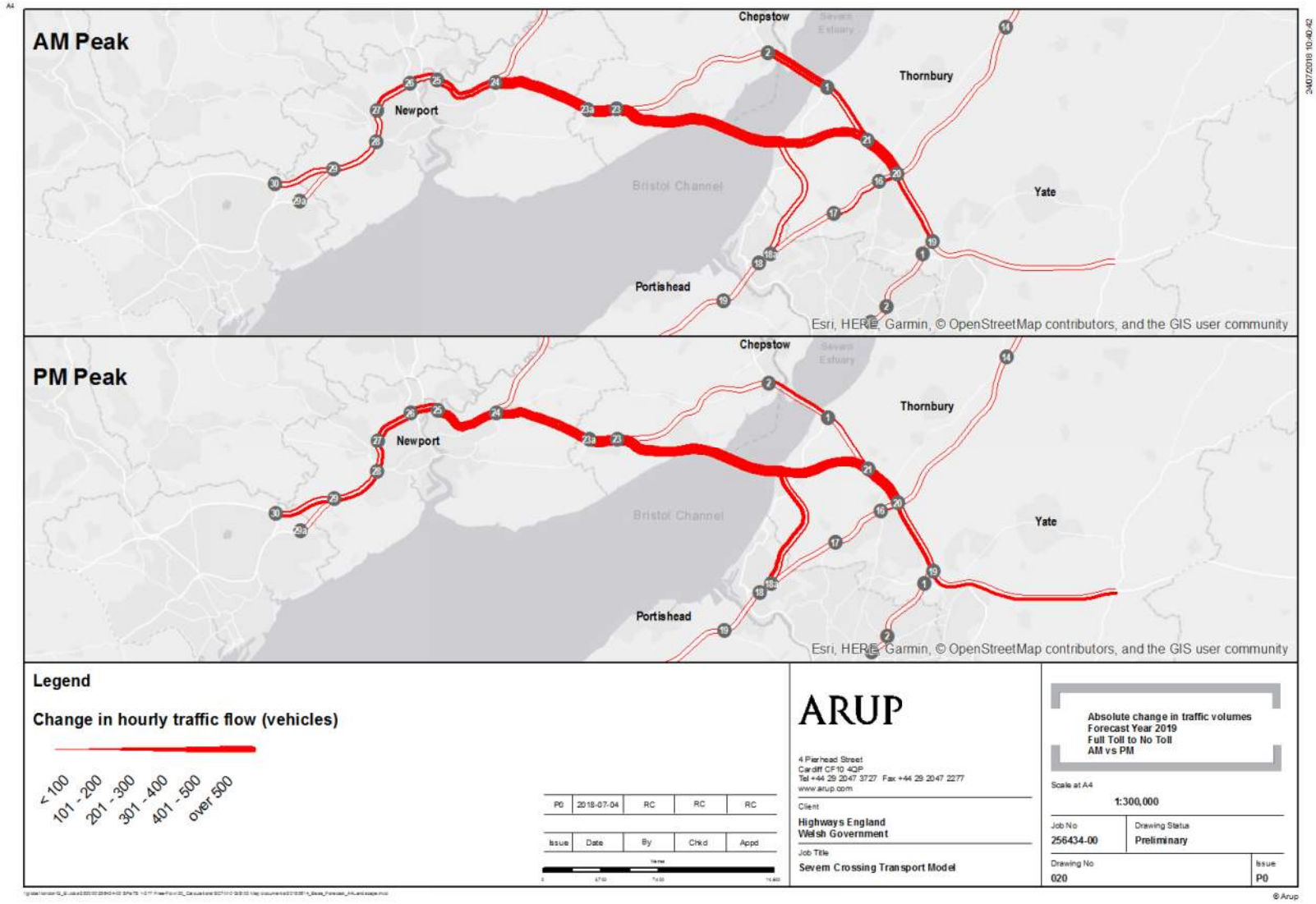


Figure 4.3: Changes in Traffic Volumes, 2019 AM vs PM Peak

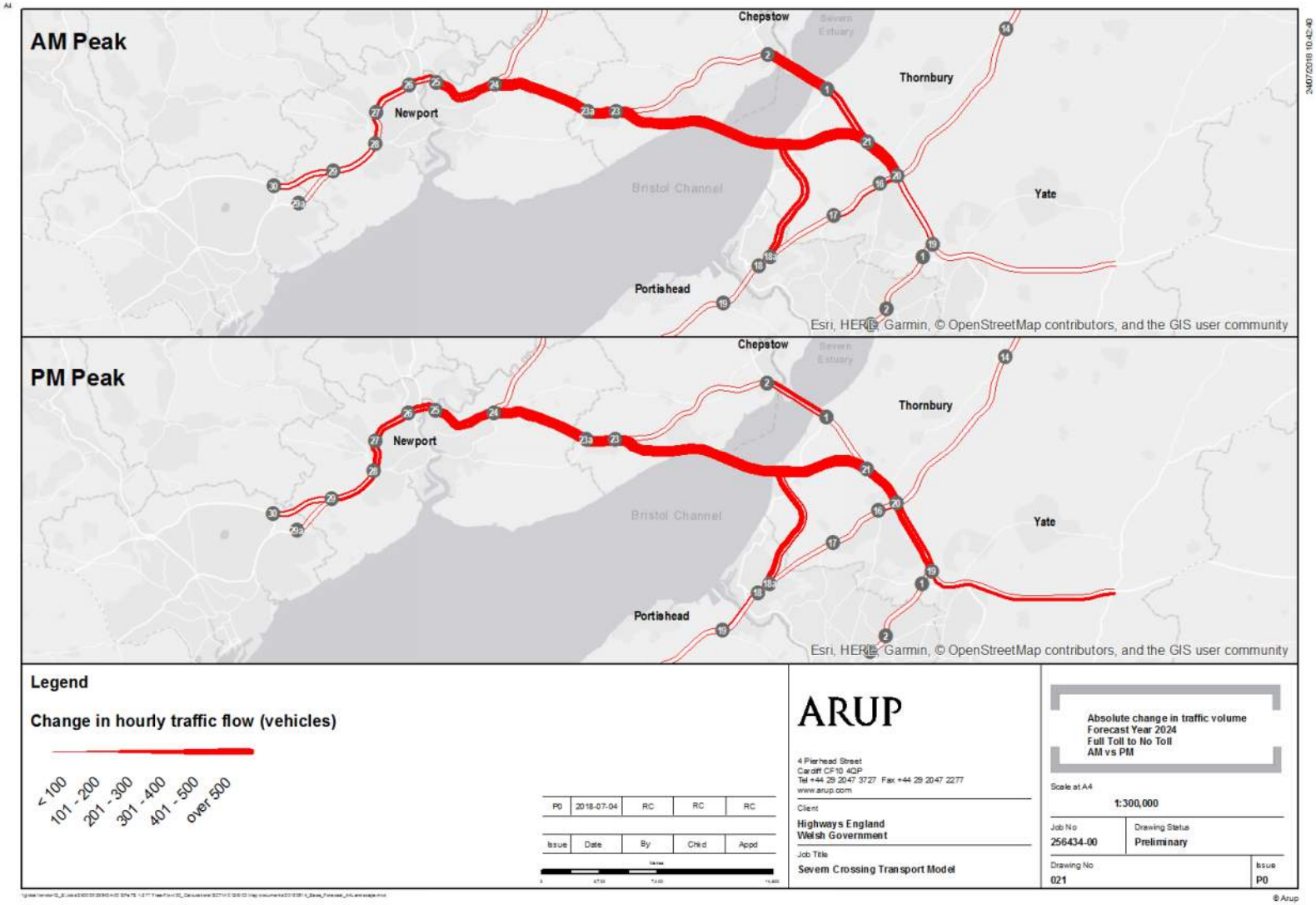


Figure 4.4: Changes in Traffic Volumes, 2024 AM vs PM Peak

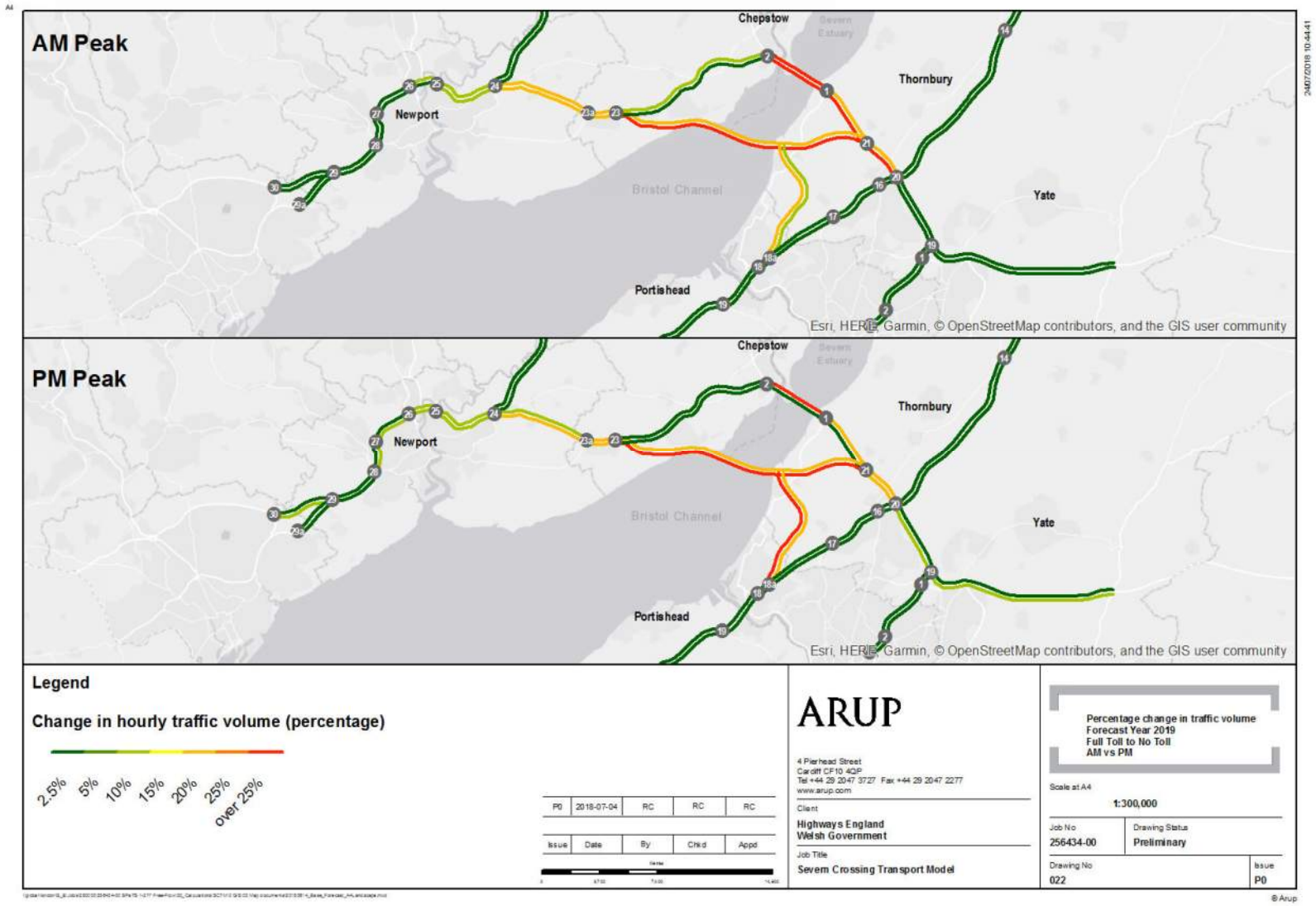


Figure 4.5: Percent Change in Traffic Volume – 2019 AM vs PM Peak

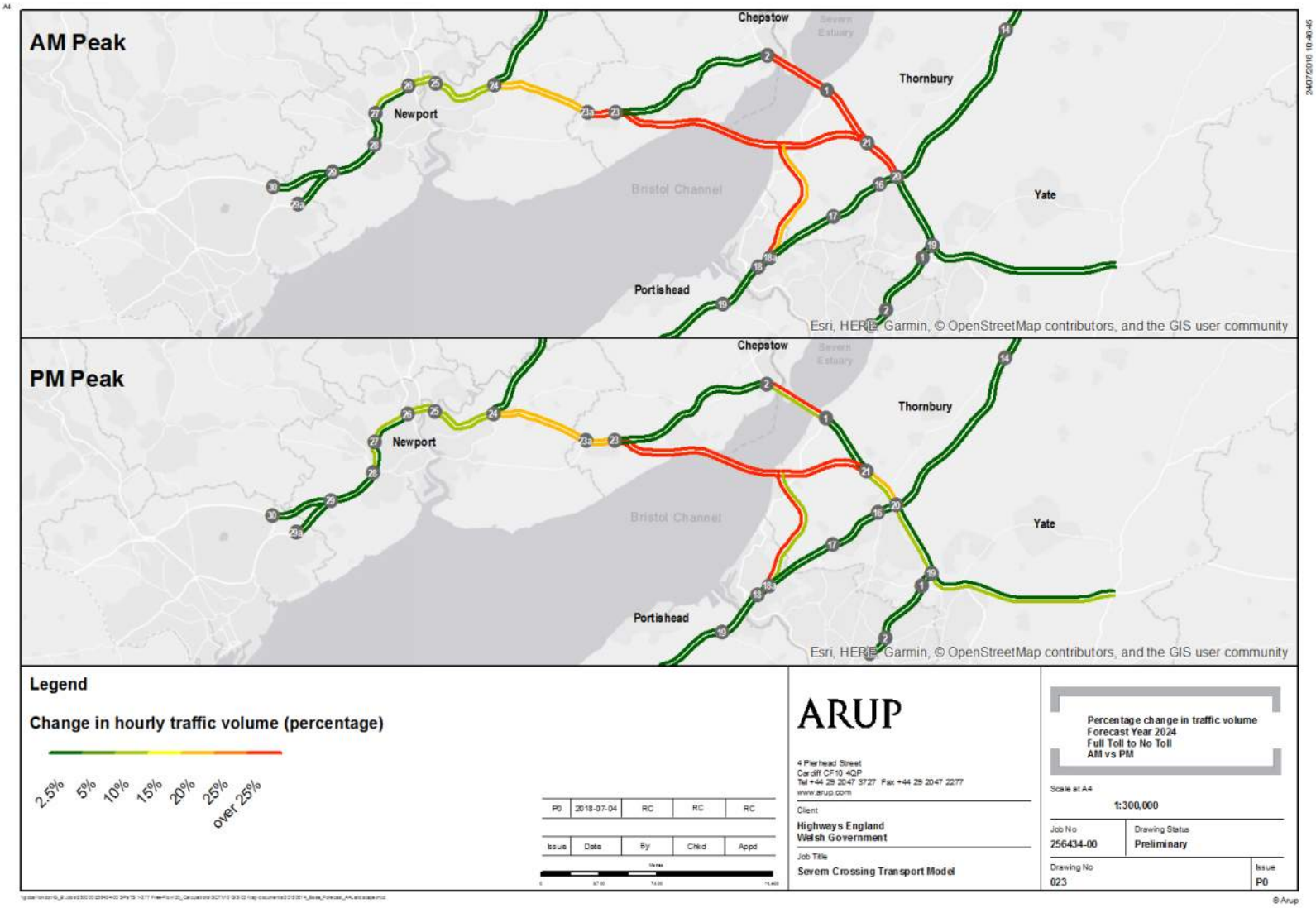


Figure 4.6: Percent Change in Traffic Volume – 2024 AM vs PM Peak

5 Impacts on Operating Conditions

5.1 Link Speeds and Journey Times

Figures 5.1 and 5.2 show changes in the predicted vehicle speeds on motorway links at peak times as a result of the removal of tolls on the Severn Crossings. These should be considered alongside the analysis in Section 5.2 which considers not only link speeds but delays at junctions.

Note that large changes in speed do not necessarily indicate high levels of congestion. Links which experience limited congestion at present may have a greater scope for a reduction in vehicle speeds. In general, the links identified with the largest changes in speeds do not reflect the links with existing capacity constraints that were identified in Section 3, because the scope for large changes in speed on these links will be much lower.

In the short term, to the east of the Crossings, significant changes in link speeds of between 5mph and 10mph are predicted to occur in the medium term on the M4 between Junction 20 and Junction 21 (on the eastbound approach to Junction 20), on the M4 westbound approach to J22 and on the northbound carriageway of the M49.

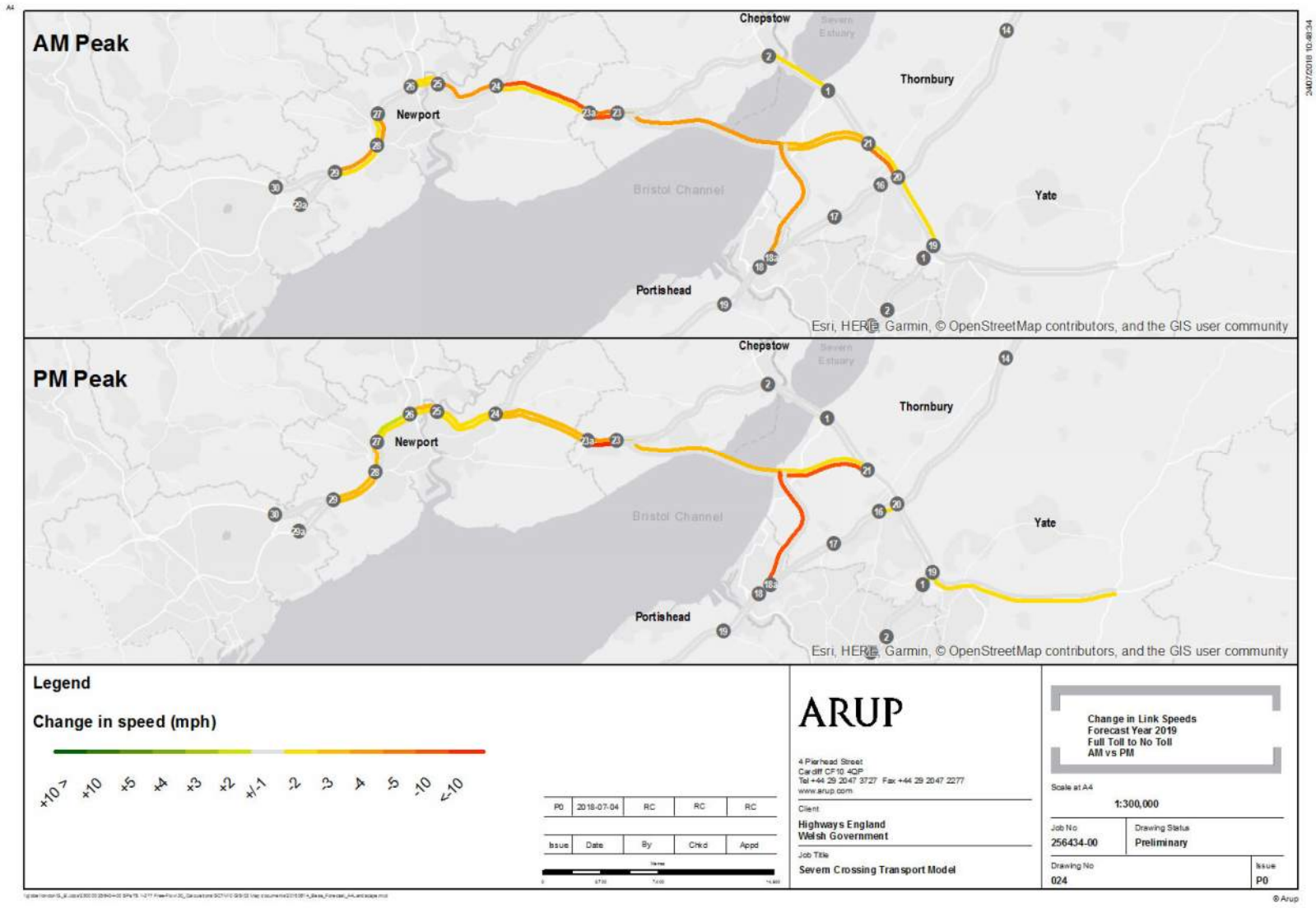


Figure 5.1: Changes in Link Speeds, 2019 AM vs PM Peak

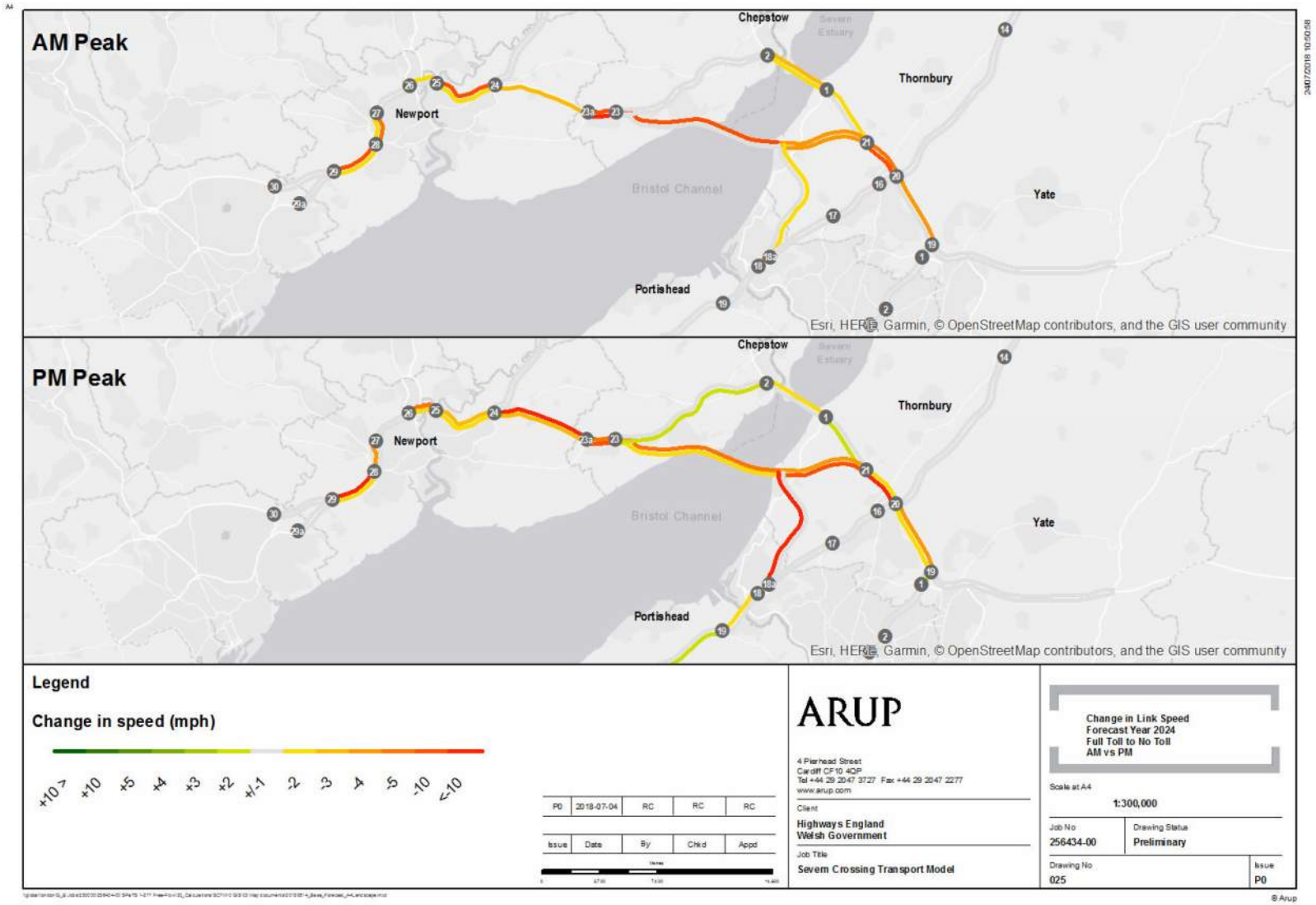


Figure 5.2: Changes in Link Speeds, 2024 AM vs PM Peak

An analysis of the changes in journey times has been undertaken for some selected trips in the model network. Three routes have been chosen as being representative of trips using the Crossings whilst also passing through areas of the network which are expected to experience significant increase in traffic flows. The routes are as follows:

- Chepstow (M48 Junction 2) to the centre of Bristol via the M48 Severn Bridge, M4 and M32 motorways;
- Newport (M4 Junction 24) to Aztec West Business Park via the M4 Prince of Wales Bridge, M5 Junction 16 and the A38 Gloucester Road;
- Cardiff (M4 Junction 29) to Bath via the M4 Prince of Wales Bridge, M4 Junction 18 and the A46 to Bathampton.

Table 5.1 shows the results obtained from the 2019 forecasts, while Table 5.2 shows the results in 2024.

Table 5.1: Journey Time Impact, 2019

Route	Direction	AM Peak				PM Peak			
		Full Toll	No Toll	Difference	% Difference	Full Toll	No Toll	Difference	% Difference
Chepstow-Bristol	Eastbound	27:10	28:19	01:09	4.2%	26:02	26:46	00:44	2.8%
	Westbound	19:49	20:09	00:20	1.7%	22:06	24:19	02:13	10.0%
Newport-Aztec West	Eastbound	24:35	26:23	01:48	7.3%	17:55	18:31	00:36	3.3%
	Westbound	18:35	19:38	01:03	5.7%	22:49	26:58	04:09	18.2%
Cardiff-Bath	Eastbound	52:27	55:00	02:33	4.9%	51:48	52:52	01:04	2.1%
	Westbound	56:11	58:00	01:49	3.2%	60:03	65:06	05:03	8.4%

The results obtained for 2019 show that the effect on travel times in the AM peak is relatively slight, with an increase in the average journey time of about one or two minutes for eastbound journeys.

During the PM peak, larger increases in journey times would result with the removal of tolls. For example, the trip between Aztec West (A38) and Newport would increase by about four minutes, owing to increased delays at Junction 16 of the M5, at Junction 20 (Almondsbury) and on the two-lane section of the M4 on the westbound approach to Junction 21.

Table 5.2: Journey Time Impact, 2024

Route	Direction	AM Peak				PM Peak			
		Full Toll	No Toll	Difference	% Difference	Full Toll	No Toll	Difference	% Difference
Chepstow-Bristol	Eastbound	27:49	29:13	01:24	5.0%	27:11	28:16	01:05	4.0%
	Westbound	20:57	22:10	01:13	5.8%	23:42	26:41	02:59	12.6%
Newport-Aztec West	Eastbound	24:46	29:09	04:23	17.7%	18:17	19:41	01:24	7.7%
	Westbound	19:38	22:50	03:12	16.3%	24:29	34:08	09:39	39.4%
Cardiff-Bath	Eastbound	54:17	59:25	05:08	9.5%	53:39	56:18	02:39	4.9%
	Westbound	58:21	61:30	03:09	5.4%	62:45	68:30	05:45	9.2%

By 2024, the increases in delay become more severe as the demand response to toll removal grows. The routes from Newport and Cardiff experience increased delays at J23A in both directions as a result of congestion at the lane drops through the junction, while the Newport route also incurs increased delays at M5 Junction 16. Westbound routes in the PM peak all suffer increased delays joining the M4 at Junction 20 (Almondsbury) and between this junction and the M48 (Junction 21).

It is apparent that the increasing delays are the result of congestion at a limited number of locations on the network, which are explored in more detail in the following section.

5.2 Key Short and Medium-Term Priority Areas

The results of the modelling have been used to identify a number of key issues on the Strategic Road Network in England and Wales that are expected to occur or worsen in the short to medium-term following the removal of the tolls.

In order to identify priorities, the model has been examined to determine those links and junctions that experience a significant increase in delays due to toll removal. These locations have been ranked to take account of both the size of the increased delay and the number of vehicles affected. In this way, the short and medium-term issues can be narrowed to a limited number of locations.

The key priority areas are set out and described in Sections 5.2.1 and 5.2.2. The analysis refers to changes in the 'volume to capacity ratio (VCR)' of sections of the network. This measure is intended to provide a broad indication of the level of service provided by links and junctions. There is no absolute measure of 'congestion', in the same way as there is no trigger point of capacity at which the network fails. Increased traffic flows lead to decreasing speeds, deterioration of operating conditions or a declining level of service as perceived by road users. In practice, operational problems may occur before traffic flows reach 100% of capacity.

The theoretical hourly capacity of a link (as defined in DMRB) is based on the mid-link capacity and does not take into account the impact of junctions upstream and downstream. Nor does it take into account transitions from three to two lanes,

variations from the average vertical and horizontal alignments, and other factors such as percentage of heavy goods vehicles which can impact on actual capacity.

5.2.1 Strategic Road Network in England

Five key priority areas on the Strategic Road Network in England have been identified. These are described below and illustrated in Figure 5.3. A summary of changes in traffic flows due to the removal of the toll is given in Table 5.3.

In addition to the five key priority areas on the SRN, there are also a range of other locations for which the transport model shows an increase in delays. In the majority of these cases (particularly in the urban areas of Bristol & South Gloucestershire) these locations exhibit a sizeable increase in delay even with very slight increases in traffic flow. This can occur where the network already operates at capacity. In practical terms, removing the tolls would only be a relatively minor contributor to the overall delay. In other cases, whilst there may be a significant increase in traffic levels due to toll removal, the issues occur on minor roads and thus impact relatively limited numbers of users. These areas are recorded separately in Table 5.5.

Key Priority Areas in England

The key priority areas on the SRN in England are:

1. **M4 Junction 19 (M32)**
    a. M4 eastbound entry to the roundabout – an existing problem resulting from the high volume of traffic heading into Bristol & South Gloucestershire in both peak periods, which would be exacerbated by toll removal. The volume to capacity ratio (VCR) increases from 119% to 122% in the 2024 AM peak, and from 118% to 120% in the PM peak.
    b. M32 northbound entry to roundabout - an existing problem resulting from the high volume of traffic leaving Bristol in both peak periods, which would be exacerbated by toll removal. The VCR increases from 102% to 104% in the 2024 AM peak, and from 107% to 111% in the PM peak.
2. **M5 Junction 16 (A38)**
    a. M5 southbound entry to roundabout - an existing problem resulting from the high volume of traffic heading into Bristol & South Gloucestershire in the AM peak, which would be exacerbated by toll removal. Problems caused by the lack of capacity at the signalised entry to the roundabout are compounded by large volumes of weaving traffic over the short distance between Junction 15 (Almondsbury) and Junction 16. Three separate streams of traffic from the Almondsbury interchange come together in quick succession, with traffic weaving to either the Junction 16 roundabout or southbound onto the M5. With a weaving distance of less than 500m available, static queuing can quickly build up. The VCR increases from 112% to 116% in the 2024 AM peak.

b. A38 northbound entry to roundabout - an existing problem resulting from the high volume of traffic leaving Bristol & South Gloucestershire in both peak periods but particularly the PM peak, which would be exacerbated by toll removal. The VCR increases from 100% to 101% in the 2024 AM peak, and from 108% to 110% in the PM peak.

3. **M4 Junction 20 to Junction 21**The westbound link between Junction 20 (Almondsbury) and Junction 21 (M48) has only two lanes, and the relatively short distance (1.75km) between merge and diverge means that weaving traffic could exacerbate capacity issues, particularly with vehicles travelling at higher speeds on the downhill gradient. With the tolls removed, 2024 PM peak traffic volumes increase by 9% from 3750 to 4070, so that the VCR increases from 89% to 101%. The two-lane westbound link through the Almondsbury interchange between slips would also be at capacity.

4. **M4 Junction 20 (M5) – merge onto M4 (West)**

   a. Linked to the above problem, traffic from the M5 (both north and south) joining the M4 westbound at Junction 20 would have problems at the westbound merge by 2024, because the mainline M4 through the junction and down to Junction 21 would be running at capacity. As a result, the capacity of the westbound merge is greatly reduced. This leads to a reduction in demand because fewer merging vehicles are able to join the M4 during the modelled hour and because users would seek alternative routes towards South Wales (most notably via the M49 and Junction 22 of the M4 or via the M32 and Junction 19 of the M4) to avoid the lengthy delays at this point. Even with the reduced flow, the VCR for merging traffic at this point increases from 82% with tolls to 120% without tolls.

5. **M4 Junction 22 (M49)**

   a. M49 northbound entry – one likely alternative for M5 traffic seeking to avoid the congestion in merging onto the M4 at Almondsbury. This, together with Severnside traffic from the new junction on the M49, results in a large increase in traffic entering Junction 22 from the south. As there is only one lane available on the M4 westbound on-slip, traffic needs to enter the roundabout in the nearside lane for this movement. As flows increase following the toll removal, however, some traffic is forced to use the offside lane and circle around the roundabout before accessing the on-slip – which in turn reduces the capacity of the nearside lane. The VCR increases from 100% to 101% in the 2024 AM peak, and from 101% to 120% in the PM peak.

   b. M4 eastbound diverge – the eastbound M4 has a single lane drop at Junction 22, which would be running close to capacity even with the tolls. The VCR increases from 101% to 102% in the 2024 AM peak, and from 95% to 103% in the PM peak.

Table 5.3: Key Issues, East of the Crossings

Location	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)
1. M4 J19 (M32)	M4 EB entry to rbt	+2.2%	120%	+1.8%	116%	+2.4%	122%	+2.3%	120%
	M32 NB entry to rbt	+2.5%	100%	+1.1%	107%	+1.4%	104%	+3.8%	111%
2. M5 J16 (A38)	M5 SB entry to rbt	+2.2%	114%	+11.3%	48%	+3.1%	116%	+3.4%	58%
	A38 NB entry to rbt	+1.8%	98%	+1.7%	108%	+0.6%	101%	+1.5%	110%
3. M4 J20 (M5)	Merge from M5 to M4 WB	+44.2%	69%	+10.9%	102%	+50.7%	84%	-45.1%	120%
4. M4 J21 (M48)	M4 WB link	+26.4%	76%	+16.1%	100%	+29.7%	87%	+8.7%	101%
5. M4 J22 (M49)	M49 NB entry to rbt	+16.2%	100%	+22.7%	103%	+26.1%	101%	+17.0%	120%
	M4 EB diverge	+4.1%	103%	+9.0%	96%	+1.2%	102%	+8.0%	103%

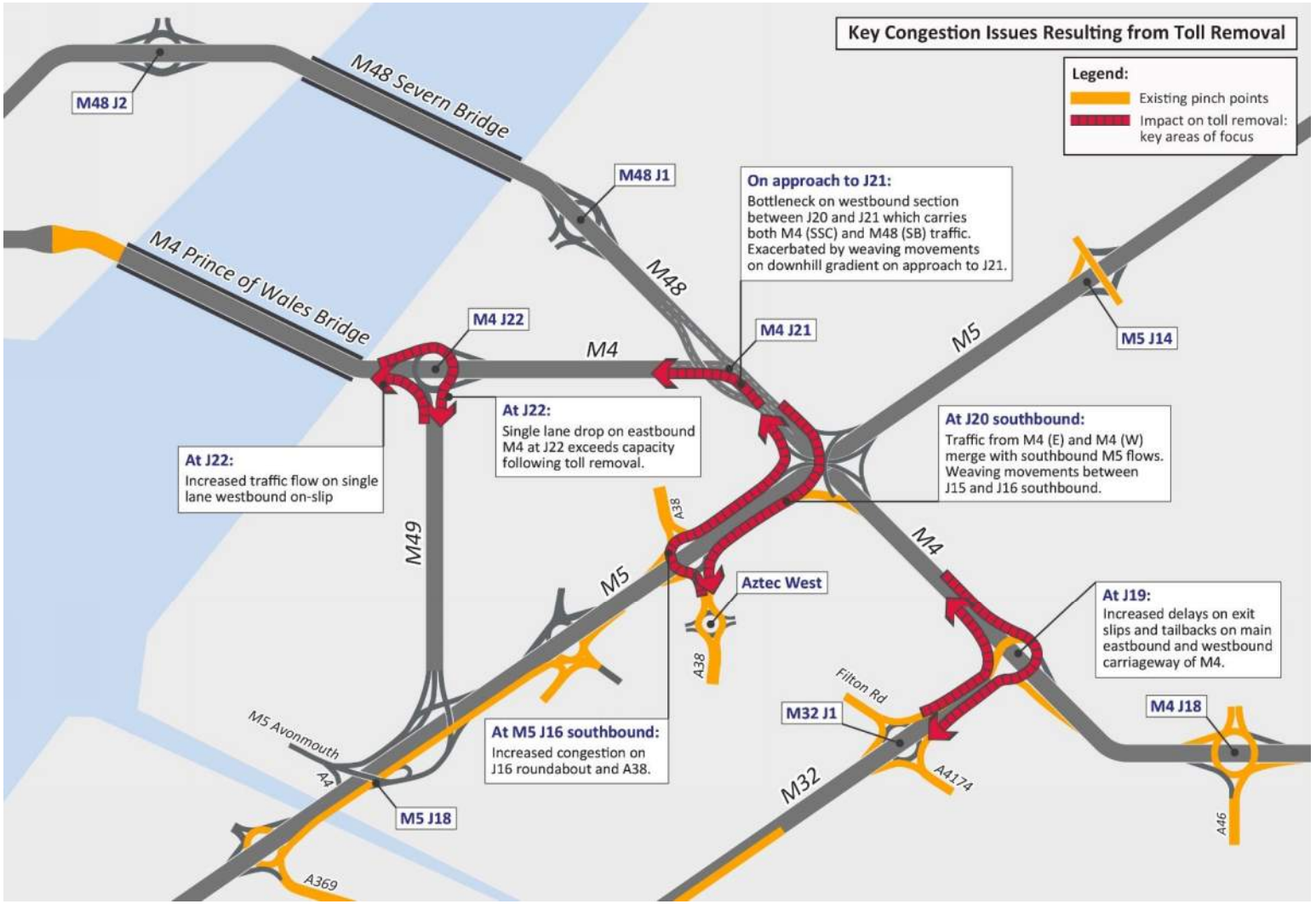


Figure 5.3: Key Issues, East of the Crossings

For the identified key issues, Table 5.4 uses interpolation of the transport model outputs to identify the year in which capacity will be reached, either at existing toll levels or with the tolls removed. Beyond the model year of 2024, extrapolation of the trend between 2019 and 2024 has been used, as far as 2029. This extrapolation should be treated with caution, as it takes no account of any reassignment or variable demand effects that may occur with increasing congestion. This analysis is intended to highlight the extent to which issues of congestion can be attributed to the removal of the tolls.

At location 1 (M4 Junction 19) and 2 (M5 Junction 16), the routes identified already operate at or above capacity with the tolls in place. Hence, whilst the removal of the tolls exacerbates traffic problems, these issues are present irrespective of the tolls. This is also the case for the section of motorway between Junction 20 (Almondsbury) and M5 Junction 16.

At Almondsbury, the merge of traffic from the M5 to the westbound carriageway of the M4 reaches capacity in 2019 under the No Toll scenario, albeit only during the PM peak given the tidal nature of traffic movements using the Severn Crossings. Capacity at this location would not be exceeded under the tolled scenario even by 2029. This location operates at 102% of capacity in 2019 although this rises to 120% by 2024 and as such this could be characterised as a short to medium-term issue.

Similarly, the issues identified on the westbound approach to Junction 20 (location 5) only become apparent in the medium-term under the No Toll scenario. This is also primarily a PM peak issue. This could also be characterised as a short to medium-term issue.

At Junction 22 of the M4 (location 5), the removal of the toll results in a large increase in traffic and as such capacity issues are realised much sooner than would otherwise be the case. As such this becomes a potential issue in the short to medium-term following removal of the tolls when otherwise it is unlikely that problems would become evident for many years.

A key aspect of the traffic issues identified at Junction 22 is the interaction between this location and problems identified further to the east. It is apparent that the lack of capacity for traffic to merge from M5 (south) onto the M4 westbound at the Almondsbury interchange is forcing vehicles to seek alternative routes between the M5 and the Severn Crossings. The most likely of these alternatives is the M49, which is likely to be a significant factor behind the capacity issues at the M49 northbound entry into Junction 22. It may be, therefore, that an improvement to the westbound merge capacity at Junction 20 could attract such trips back to this route, thereby reducing the pressure on the M49 at Junction 22.

Table 5.4: Year in which Capacity is exceeded

Location	Issue	Year in which Capacity exceeded				No. of Years Accelerated	
		AM Peak		PM Peak			
		With Toll	No Toll	With Toll	No Toll	AM	PM
1. M4 J19 (M32)	M4 EB entry to rbt	before 2015	before 2015	before 2015	before 2015	-	-
	M32 NB entry to rbt	2022	2019	before 2015	before 2015	3	-
2. M5 J16 (A38)	M5 SB entry to rbt	before 2015	before 2015	before 2015	before 2015	-	-
	A38 NB entry to rbt	2024	2023	before 2015	before 2015	1	-
3. M4 J20 (M5)	Merge from M5 to M4 WB	after 2029	after 2029	after 2029	2019	n/a	11+
4. M4 J21 (M48)	M4 WB link	after 2029	after 2029	2028	2019	n/a	9
5. M4 J22 (M49)	M49 NB entry to rbt	2024	2019	2024	2019	5	5
	M4 EB diverge	2022	2018	2028	2022	4	6

Examination has also been made of average vehicle speeds on motorway links in the model, together with journey times on key routes through the region, to determine how these might change as a result of the removal of toll charges.

Increases in the journey time experienced at some of the key priority areas in England are shown in Figure 5.4. Consistent with the journey times' analysis shown in Section 5.1, congestion issues are more severe in the PM peak. The largest increase in delay shown in Figure 5.4 is for movements using Junction 16 of the M5 and then Almondsbury interchange in order to travel westbound on the M4. This movement takes in both priority areas 3 and 4.

With regard to southbound movements between the Almondsbury interchange and the roundabout at Junction 16, it is likely that the model will under-represent delays at peak times because of the difficulty in accurately modelling the interaction between delays at the roundabout entry and delays incurred by traffic over the very short weaving length between the two junctions. From observations, this under-representation is particularly likely to occur in the AM peak period.

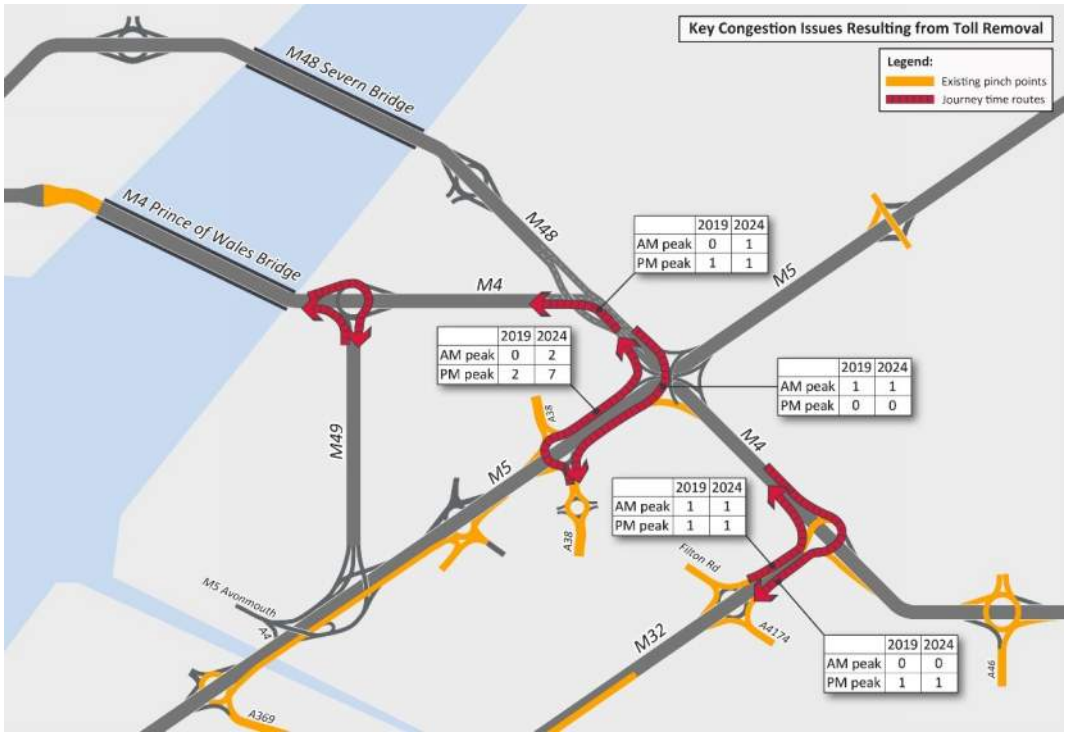


Figure 5.4: Increases in Journey Delays at Key Priority Areas

Other Locations

In general, the impact of toll removal on conditions in the West of England urban area away from the key priority areas identified is very limited. There are, however, a number of locations on the non-Strategic Road Network to the east of the Crossings which may experience increased congestion problems following toll removal, albeit in many cases this would be an exacerbation of an existing problem.

Some of the more prominent of these locations are shown in Table 5.5, although it should be noted that this list is not exhaustive. The first location in the table, at the junction of the A4 Portway with the A4176 Bridge Valley Rd, is typical of many locations in central Bristol – the eastbound link is already congested, and the toll removal would add only a small volume of traffic at this location.

There are some locations closer to the Crossings which experience significantly greater responses in traffic volumes. This includes two of the entries at the M48 Junction 1 roundabout (Aust), and the Aust Road/Redhill Lane junction to the east of Junction 1. In both cases, the large vehicle responses only create a problem in one peak period at 2024. At Junction 1, the entry from A403 into the roundabout actually shows a reduction in traffic despite the large increase in VCR – as with the westbound merge onto the M4 at Junction 20 (key issue 4 above), this occurs because of a large increase in the controlling flow (in this case circulating around the roundabout) which reduces the capacity available for the entry flow.

Table 5.5: Other Locations, East of the Crossings

Location	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)
A4 Portway/ A4176	A4 EB	+1.4%	107%	0.0%	111%	+1.8%	108%	+0.2%	112%
A369 east of M5 J19	A369 EB	+1.5%	101%	+0.8%	89%	+1.6%	105%	+1.5%	91%
A370 Brunel Way / Jessop Underpass	NB merge	+11.8%	103%	+0.6%	76%	-7.5%	103%	+1.4%	76%
A4032 / Houlton Way	A4032 SB	+0.3%	103%	-0.1%	104%	+0.1%	103%	-0.2%	104%
A4018 north of Knole Lane	A4018 SB	+1.6%	100%	+0.5%	115%	+1.4%	101%	-0.3%	111%
A4174/B4058 Hambrook	A4174 WB	+2.4%	96%	+2.8%	84%	+0.6%	101%	+1.4%	88%
M48 J1 rbt	A403 NB	+16.4%	14%	+27.9%	81%	+30.7%	23%	-16.4%	111%
	M4 EB entry	+41.9%	88%	+40.2%	43%	+47.1%	103%	+58.1%	56%
A48/B4228 east of Chepstow	B4228 SB entry	-5.8%	114%	+10.6%	100%	-5.7%	123%	+4.7%	113%
A4018 Whiteladies Rd	A4018 NB	-0.1%	107%	+0.3%	100%	0.0%	108%	+3.0%	105%
Aust Rd / Redhill Lane	Aust Rd (E)	+11.2%	47%	+3.9%	18%	+17.8%	64%	+158.4%	104%
B4058/Church Rd, Frampton Cotterell	Perrinpit Rd right turn	+1.9%	92%	+16.3%	97%	+12.7%	95%	+19.2%	111%
M5 J17 rbt	B4055 entry	+1.5%	83%	+0.7%	87%	-27.6%	111%	-3.7%	105%
B4058/B4059 Yate Rd/ Watton Rd	B4058 Yate Rd WB	+1.1%	67%	-1.2%	49%	-12.5%	116%	-0.7%	35%
A38/Over Lane, Almondsbury	Over Lane right turn	+0.3%	91%	+4.7%	111%	+30.2%	112%	-22.6%	119%
St Michaels Hill/Horfield Rd	St Michaels Hill SB	+1.3%	136%	+0.5%	110%	+2.5%	141%	+0.5%	113%
B4058/Beacon Lane, Winterbourne	B4058 SB	+0.8%	109%	-0.1%	80%	+3.1%	121%	0.0%	100%

5.2.2 Trunk Road Network in Wales

The transport model has also been used to identify key issues on the road network on the Welsh side of the crossings in the short to medium term.

Key Priority Areas in Wales

Key priority areas identified in Wales are illustrated in Figure 5.5 and described below, with a summary given in Table 5.6.

1. **M4 Junction 23A (A4810)**
   a. Link capacity issue resulting from lane drop through the junction, particularly eastbound in the AM peak and westbound in the PM peak. The VCR in the 2024 AM peak reaches 101% eastbound and 94% westbound, while the corresponding VCRs in the PM peak are 96% and 98%.
   b. In response to this congestion, the model indicates that some traffic would resort to using the slip roads and travelling through the roundabout before re-joining the motorway, resulting in congestion problems at the roundabout entries, again particularly eastbound in the AM peak and westbound in the PM peak.
2. **M4 Junction 24 (A449)**
   a. Link capacity issue resulting from lane drop through the junction, particularly eastbound in the AM peak. The VCR in the 2024 AM peak reaches 100% eastbound and 92% westbound.
3. **M4 Brynglas Tunnels**
   a. Existing link capacity issue westbound between Junction 24 and the Brynglas Tunnels would become exacerbated by the removal of tolls. Average VCRs would reach 93% in the 2024 AM peak and 95% in the PM peak, but there is currently great variability in the congestion levels, and more extreme congestion could be expected at times, particularly in the PM peaks on Thursday and Friday.
4. **M4 Junction 27 (B4591)**
   a. Capacity issue westbound at the merge point in the AM peak, with high volumes of merging traffic forcing a large proportion of mainline traffic into the offside two lanes. The VCR reaches 100% in the 2024 AM peak.
5. **M4 Junction 28 to Junction 29**
   a. Link capacity issue in both directions on the busiest section of the M4 in Wales. In 2024 with the tolls removed, the VCR reaches 99% eastbound in both AM and PM, while in the westbound direction the VCR would reach 96% in the AM peak and 95% in the PM peak.
6. **A48/A466 High Beech, Chepstow**
   a. 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%.

Table 5.6: Key Issues, West of the Crossings

Location	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)
1. M4 J23A (A4810)	EB lane drop	+10.8%	96%	+15.8%	85%	+11.2%	101%	+22.3%	96%
	WB lane drop	+19.1%	85%	+8.7%	95%	+18.0%	94%	+4.2%	98%
	EB entry to rbt	+25.1%	68%	-14.2%	42%	+23.5%	101%	+1.7%	62%
	WB entry to rbt	+24.3%	69%	+95.0%	95%	+72.7%	92%	+75.8%	100%
2. M4 J24 (A449)	EB lane drop	+12.9%	96%	+12.7%	81%	+11.5%	100%	+19.0%	92%
3. M4 Brynglas Tunnel	WB link capacity	+3.6%	84%	+7.5%	92%	+3.8%	93%	+6.4%	95%
4. M4 J27 (B4591)	WB merge	+3.0%	97%	+4.5%	81%	+2.2%	100%	+5.1%	82%
5. M4 J28 to J29	EB link capacity	+4.2%	95%	+4.1%	91%	+5.9%	99%	+5.5%	99%
	WB link capacity	+2.2%	92%	+4.6%	95%	+2.3%	97%	+3.5%	96%
6.A48 / A466 Chepstow	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%

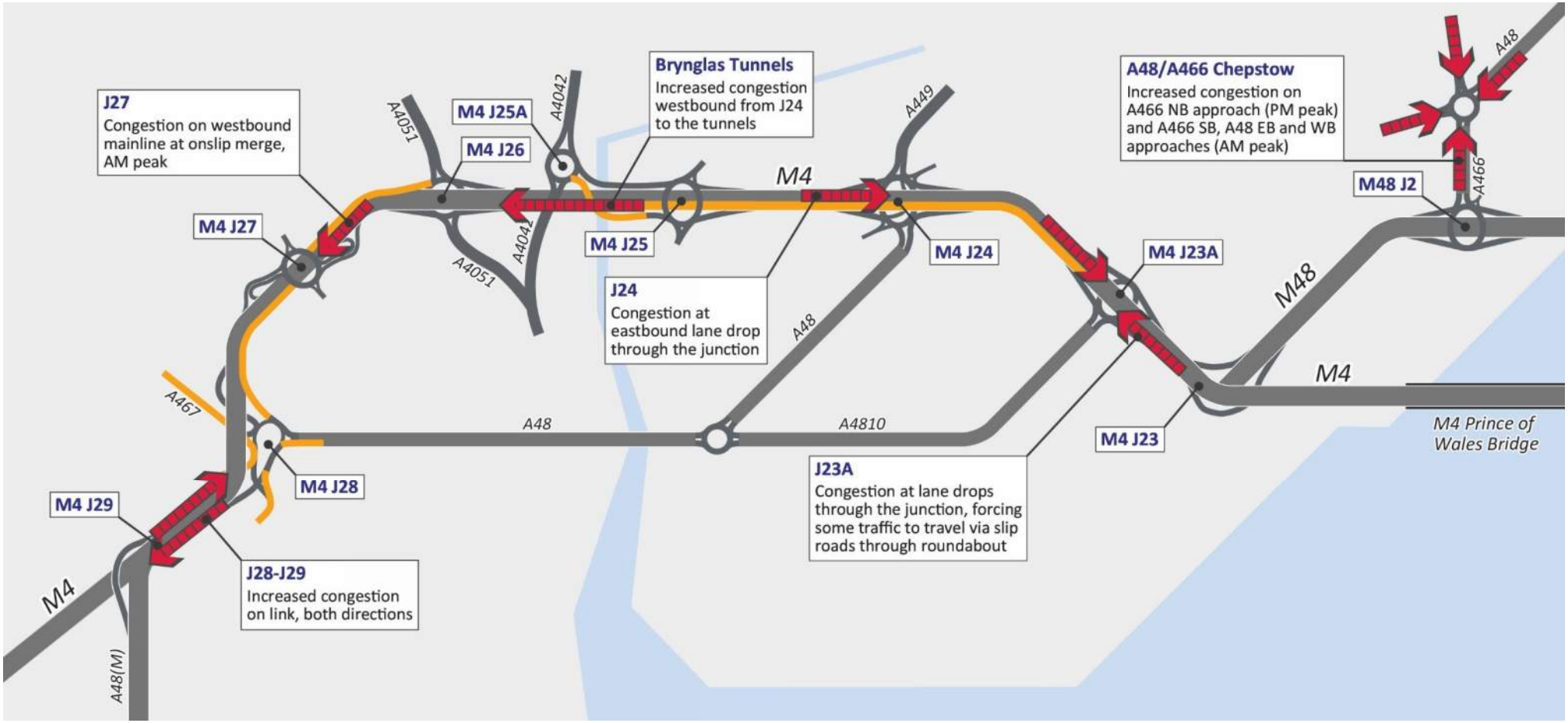


Figure 5.5: Key Issues, West of the Crossings

For the identified key issues, Table 5.7 uses interpolation of the transport model outputs to identify the year in which capacity will be reached, either at existing toll levels or with the tolls removed. As for Table 5.4, traffic volumes for the period 2024 to 2029 have been extrapolated and should therefore be treated with caution.

Table 5.7: Year in which Capacity is exceeded

Location	Issue	Year in which Capacity exceeded				No. of Years Accelerated	
		AM Peak		PM Peak			
		With Toll	No Toll	With Toll	No Toll	AM	PM
1. M4 J23A (A4810)	EB lane drop	after 2029	2023	after 2029	2026	7+	4+
	WB lane drop	after 2029	2028	2028	2027	2+	1
	EB entry to rbt	after 2029	2024	after 2029	after 2029	6+	n/a
	WB entry to rbt	after 2029	2026	2028	2024	4+	4
2. M4 J24 (A449)	EB lane drop	after 2029	2024	after 2029	2028	6+	2+
3. M4 Brynglas Tunnel	WB link capacity	after 2029	2028	after 2029	after 2029	2+	n/a
4. M4 J27 (B4591)	WB merge	2025	2024	after 2029	after 2029	1	n/a
5. M4 J28 to J29	EB link capacity	after 2029	2025	2026	2025	5+	1
	WB link capacity	2029	2027	after 2029	after 2029	2	n/a
6.A48 / A466 Chepstow	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

Other Locations

There are a number of other locations on the non-Strategic Road Network to the west of the Crossings which may experience increased congestion problems following toll removal, albeit in many cases this would be an exacerbation of an existing problem. Some of the more prominent of these locations are shown in Table 5.8.

Table 5.8: Other Locations, West of the Crossings

Location	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)
A4810, south of J23A	A4810 SB link capacity	+9.6%	85%	+13.4%	96%	+5.6%	100%	+2.4%	103%
A4042 Brynglas Relief Rd	EB link to J25A	+6.6%	94%	+4.8%	96%	+11.4%	96%	+1.1%	100%
A48 SDR / Corporation Rd	Right turn from south	-0.9%	63%	-0.1%	193%	-1.6%	61%	0.1%	164%
A48 SDR / Nash Rd	A48 EB entry to rbt	+4.4%	77%	+0.6%	100%	+12.0%	91%	2.0%	106%
A48/Station Rd, Chepstow	A48 EB at signals	+19.1%	55%	5.5%	104%	+19.8%	54%	+3.7%	106%

5.2.3 Implications of the M4CaN Scheme

The proposed new M4 Corridor around Newport (M4CaN) scheme has been the subject of a recent Public Inquiry, and the decision of the Inspector is currently awaited. The scheme would create a new 3-lane motorway around the south side of Newport, extending from Junction 23 (M48) to Junction 29 (A48(M). It would relieve the existing M4 route through the Brynglas Tunnels, which would be downgraded to an all-purpose route. The M4CaN scheme is scheduled to open by 2024.

Table 5.9 compares the No Toll scenario forecasts with and without the M4CaN scheme in place. Of the key issues to the west of the Crossings that were noted in Table 5.6, the first five all relate to the section of the M4 around Newport that would be relieved by the M4CaN scheme.

Table 5.9: Effect of M4CaN on Key Issues

Location	Issue	2024			
		AM		PM	
		Vol/Cap Ratio (No Toll)	Vol/Cap Ratio (No Toll + M4CaN)	Vol/Cap Ratio (No Toll)	Vol/Cap Ratio (No Toll + M4CaN)
1. M4 J23A (A4810)	EB lane drop	101%	46%	96%	46%
	WB lane drop	94%	54%	98%	58%
	EB entry to rbt	101%	30%	62%	24%
	WB entry to rbt	92%	86%	100%	71%
2. M4 J24 (A449)	EB lane drop	100%	51%	92%	58%
3. M4 Brynglas Tunnel	WB link capacity	93%	50%	95%	55%
4. M4 J27 (B4591)	WB merge	100%	65%	82%	48%
5. M4 J28 to J29	EB link capacity	99%	62%	99%	63%
	WB link capacity	96%	57%	95%	60%

6 Summary and Conclusions

In July 2017, UK Government announces that tolls would be abolished at the Severn River Crossings by the end of 2018. On 2 October, a further announcement was made that tolls will be abolished on 17 Dec 2018. Highways England, in partnership with the Welsh Government, commissioned Arup to develop a transport model which would provide an improved understanding of the likely impacts on traffic conditions.

An impact assessment has been carried out which is focused on, but not limited to, the Strategic Road Network in England and the Trunk Road Network in Wales. A key objective of the impact assessment is to identify a number of 'key priority areas' (in both England and Wales) that would be the focus of any options identification exercise in relation to mitigating highway measures.

The impact on traffic demand of the removal of the Severn Crossings has been modelled both in the short-term (2019) and medium-term (2024). The results indicate that, in the short-term, moving from the current Post Concession Toll to no toll will increase traffic flows over the Crossings by around 23%. By 2024, this increases to a 31% increase. These responses are in addition to any change in demand due to the reduction in toll prices introduced in January 2018 following the return to public ownership.

The results of the modelling have identified a number of key priority areas on the Strategic Road Network on the English side of the crossings in the short to medium-term. These are:

1. M4 Junction 19
2. M5 Junction 16
3. M4 Junction 20 to 21
4. M4 Junction 20 – merge from M5 onto M4 (West)
5. M4 Junction 22 (M49).

At locations 1 and 2, removal of the tolls results in incremental deterioration of existing congestion issues.

Locations 3, 4 and 5, the issues could be characterised as being problems that would not otherwise have arisen over the timescales of this assessment. Indications are that congestion issues at these locations may not be very severe in the immediate aftermath of the removal of the toll but that conditions will worsen over time.

In general, the impact of toll removal on conditions in the West of England urban area away from key priority areas identified is very limited. There are, however, a number of locations on the non-Strategic Road Network to the east of the Crossings which may experience increased congestion problems following toll removal, albeit in many cases this would be an exacerbation of an existing problem.

In Wales, the following key priority areas have been identified:

1. M4 Junction 23A (A4810)
2. M4 Junction 24 (A449)
3. M4 Brynglas Tunnels
4. M4 Junction 27 (B4591)
5. M4 Junction 28 to Junction 29
6. A48/A466 High Beech, Chepstow

Of the above listed areas to the west of the Crossings, the first five all relate to the section of the M4 around Newport that would be relieved by the planned M4CaN Scheme which, if progressed, is due to open in 2024.

Figure 6.1: Key Priority Areas, West of the Crossings

Appendix A

Severn Crossings - Response to Toll Removal

A1 Short-Term Response (2019)

A1.1 Step 1: Full Toll to Post-Concession Toll

	AM	IP	PM	AADT
TOTAL (Both Crossings / Both Directions)	**260**	**180**	**310**	**3,100**
	4%	**3%**	**4%**	**4%**
Both Crossings eastbound	160	70	110	1,400
	4%	3%	4%	3%
Both Crossings westbound	100	110	200	1,700
	4%	4%	5%	4%
M4 Prince of Wales Bridge eastbound	100	50	80	1,000
	3%	2%	3%	3%
M4 Prince of Wales Bridge westbound	60	70	80	1,000
	3%	3%	3%	4%
M48 Severn Bridge eastbound	60	20	30	400
	5%	4%	6%	4%
M48 Severn Bridge westbound	40	40	120	700
	7%	7%	8%	6%

A1.2 Step 2: Post-Concession Toll to No Toll

	AM	IP	PM	AADT
TOTAL (Both Crossings / Both Directions)	**1,770**	**1,280**	**1,840**	**21,100**
	24%	**22%**	**23%**	**23%**
Both Crossings eastbound	920	520	690	9,000
	20%	17%	22%	19%
Both Crossings westbound	850	760	1150	12,100
	29%	28%	24%	27%
M4 Prince of Wales Bridge eastbound	560	360	500	6,000
	17%	15%	19%	16%
M4 Prince of Wales Bridge westbound	590	500	1230	9,600
	25%	23%	41%	29%
M48 Severn Bridge eastbound	360	160	190	3,000
	29%	28%	33%	29%
M48 Severn Bridge westbound	260	260	-80	2,500
	45%	42%	-5%	21%

A1.3 Steps 1 and 2 Combined: Full Toll to No Toll

	AM	IP	PM	AADT
TOTAL (Both Crossings / Both Directions)	**2,030**	**1,460**	**2,150**	**24,200**
	28%	**26%**	**29%**	**27%**
Both Crossings eastbound	1,080	590	800	10,400
	25%	20%	26%	23%
Both Crossings westbound	950	870	1,350	13,800
	33%	33%	30%	33%
M4 Prince of Wales Bridge eastbound	660	410	580	7,000
	21%	17%	23%	19%
M4 Prince of Wales Bridge westbound	650	570	1310	10,600
	28%	28%	45%	33%
M48 Severn Bridge eastbound	420	180	220	3,400
	36%	32%	41%	35%
M48 Severn Bridge westbound	300	300	40	3,200
	56%	52%	3%	28%

A2 Medium-Term Response (2024)

A2.1 Step 1: Full Toll to Post-Concession Toll

	AM	IP	PM	AADT
TOTAL (Both Crossings / Both Directions)	**440**	**270**	**470**	**5,000**
	6%	**4%**	**6%**	**5%**
Both Crossings eastbound	260	140	200	2,500
	6%	4%	6%	5%
Both Crossings westbound	170	130	270	2,400
	5%	5%	6%	5%
M4 Prince of Wales Bridge eastbound	150	100	140	1,700
	4%	4%	5%	4%
M4 Prince of Wales Bridge westbound	90	40	110	1,000
	4%	2%	4%	3%
M48 Severn Bridge eastbound	110	40	60	800
	8%	6%	9%	8%
M48 Severn Bridge westbound	80	90	160	1,400
	13%	12%	8%	11%

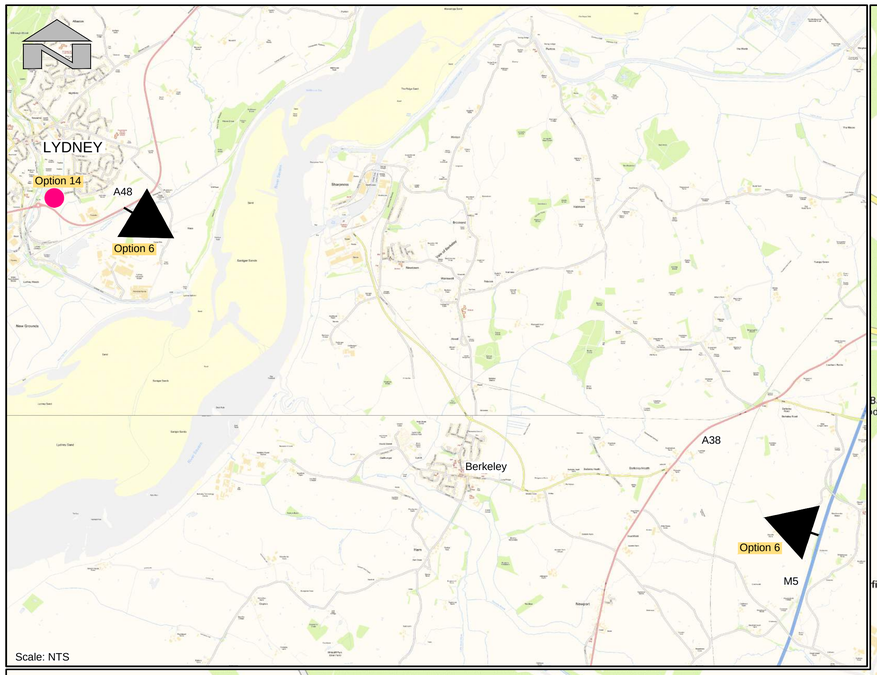
A2.2 Step 2: Post-Concession Toll to No Toll

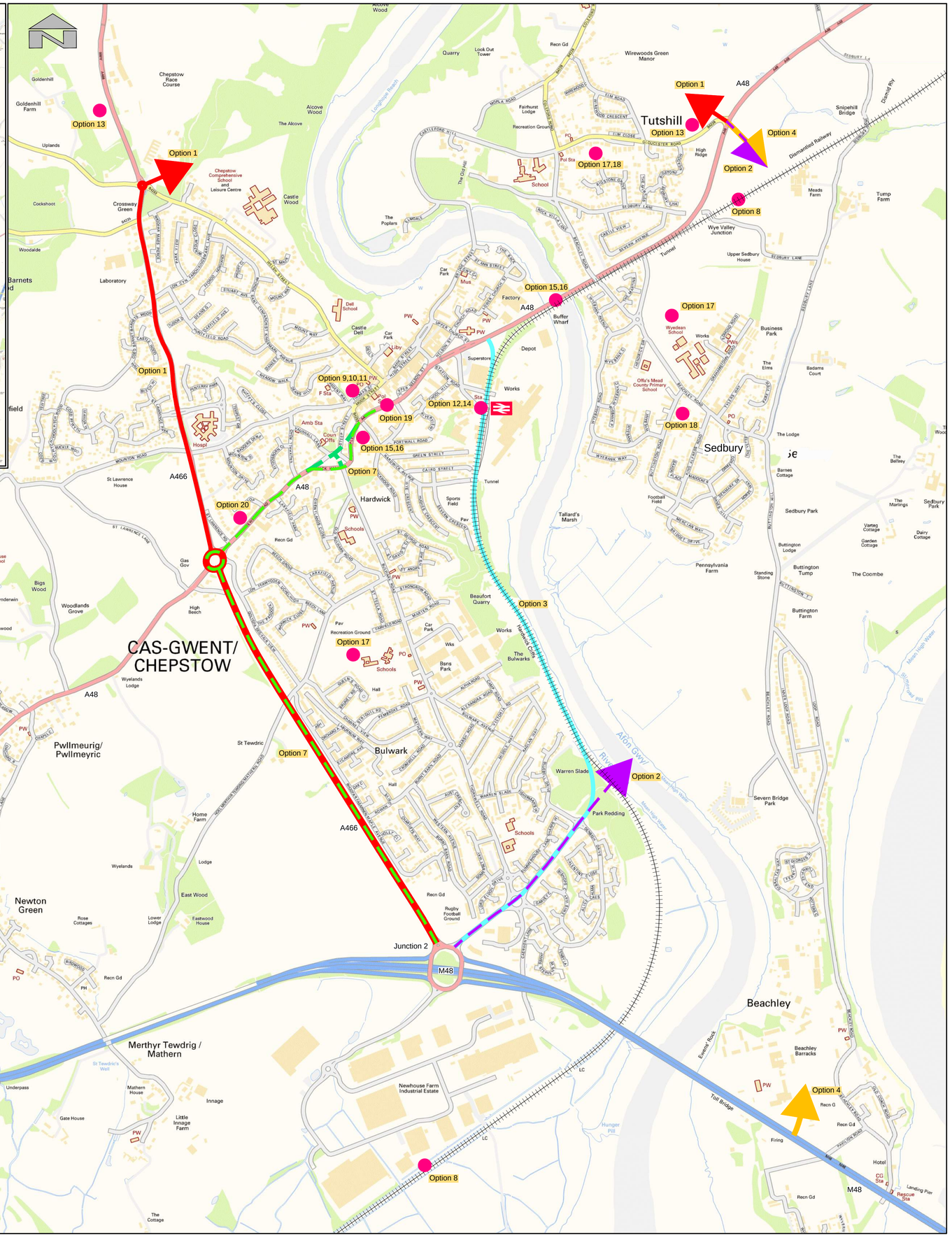
	AM	IP	PM	AADT
TOTAL (Both Crossings / Both Directions)	**2,630**	**2,020**	**2,270**	**30,800**
	32%	**31%**	**26%**	**30%**
Both Crossings eastbound	1,350	890	1,110	14,600
	27%	26%	31%	27%
Both Crossings westbound	1,280	1,130	1,170	16,300
	38%	37%	23%	33%
M4 Prince of Wales Bridge eastbound	880	610	780	9,900
	25%	22%	27%	24%
M4 Prince of Wales Bridge westbound	870	870	1,170	13,000
	33%	39%	38%	37%
M48 Severn Bridge eastbound	480	280	330	4,700
	33%	41%	48%	39%
M48 Severn Bridge westbound	410	270	0	3,300
	60%	32%	0%	22%

A2.3 Steps 1 and 2 Combined: Full Toll to No Toll

	AM	IP	PM	AADT
TOTAL (Both Crossings / Both Directions)	**3,070**	**2,290**	**2,740**	**35,800**
	39%	**37%**	**33%**	**36%**
Both Crossings eastbound	1,620	1,030	1,310	17,100
	34%	31%	39%	34%
Both Crossings westbound	1,450	1,270	1,430	18,700
	46%	43%	30%	39%
M4 Prince of Wales Bridge eastbound	1,030	710	920	11,600
	30%	27%	33%	29%
M4 Prince of Wales Bridge westbound	960	910	1,280	13,900
	37%	42%	43%	41%
M48 Severn Bridge eastbound	590	320	390	5,500
	44%	49%	62%	50%
M48 Severn Bridge westbound	490	360	150	4,700
	81%	49%	8%	35%

Appendix I
Option Drawing





Notes:

Option 1	Chepstow Bypass - Land north of Tutshill including upgrading the A466
Option 2	Chepstow Bypass - Beachley and Sedbury
Option 3	Chepstow Bypass - following the line of the Railway
Option 4	Chepstow Bypass - Beachley and Sedbury direct from M48
Option 5	New M48 Junction at Hayes Gate/St. Pierre Golf Course
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	New Direct Rail Link to Bristol
Option 13	Park and Ride (Bus) Park & Share
Option 14	Park and Ride (Rail) Lydney - Chepstow
Option 15	Active Travel Upgrades
Option 16	Active Travel Additions
Option 17	Reducing the need for travel
Option 18	Containment of Settlements
Option 19	Congestion Charge
Option 20	Do Minimum

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Rev	Drwn	Chkd	Apprd	Description	Date
P04	YW	DB	MNJ	Railway logo added	11/12/2018
P03	YW	DB	MNJ	Showing indicative location for Option 5	02/10/2018
P02	YW	DB	MNJ	Showing indicative arrows, texts amended	20/09/2018
P01				Initial issue	

Purpose of Issue
S2 - Suitable for information

Classification
Commercial in Confidence

Client
CYNGOR monmouthshire COUNTY COUNCIL sir fynwy

Project
Chepstow Transport Study
WelTAG Stage 1 (Strategic Outline Case)

Drawing
Long List of Options
(Indicative only)

Scale @ A1	Drawn	Checked	Approved
NTS	YKW	DEB	DEB

Project No.: CS/095012
Date: 10/05/2018

Drawing Identifier (Project - Originator - Zone - Level - File Type - Role - Number): CTS-CAP-00-XX-DR-C-0001
BS1192 Compliant revision: P04

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Print Date:13/12/2018 10:41:49

Appendix J
Worksheet 5 to 11

Worksheet 5: Appraisal of Options against the Wales Transport Strategy 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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.

Worksheet 6: Appraisal of Options against the Well-being of Future Generations (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
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

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

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.

Worksheet 7 - Local & Regional Policy Appraisal

Option Ref.	Option	Local Transport Plan Objectives: Monmouthshire LTP * — 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.	Local Transport Plan Objectives: Gloucestershire LTP — Support sustainable economic growth	Enable communily connectivity	Conserve the environment	Improve communityi health and wellbeing	Cardiff Capital Region Strategic Objectives: Prosperity & Opportunity — 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	Inclusion & Equality — 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	Culture, Community & Sustainability — 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
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
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
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
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
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
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
8	New Railway Stations	+ +	+	+	+	+ +	+ +	+	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
11	Public Transport Upgrades (Local)	+	+	+	+	+	+	+	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
13	Park & Ride/Share	+ +	+	+	+	+	+	+	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
15	Active Travel Upgrades	+	+	+ +	+	+	+	+	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
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
18	Containment of Settlements	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
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.

Key

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

Worksheet 8: Appraisal of Scheme Options against 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

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

Worksheet 9: High Level Appraisal of Options (Appraisal Summary Table)

Criteria	Qualitative Assessment																			
	Option 1 Bypass - Land north of Tutshill	Option 2 Bypass - Beachley and Sedbury	Option 3 Bypass - following alignment of railway	Option 4 Bypss - 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
Economic																				
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	- -	-
Environment																				
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
Social																				
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	+	+	+ +	+	+	+	+	+	+	-	-
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
Public Accounts																				
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	NVA	NVA	NVA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA	NYA
Occurrence of Impacts # #																				
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	Not applicable	Not applicable	Operational stage	Not applicable
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	Not applicable	Not applicable	Users that will be subject to congestion charge	Not applicable

Notes
Although Affordability (Value for Money) has yet to be assessed in terms of a numerical Benefit to Cost Ratio, Worksheet 11, Options Deliverability includes an assessment as to how each option may be able to generate benefits, in qualitative terms.
Occurrence of impacts text is preliminary only.

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

Worksheet 10: Appraisal of Options against Deliverability

Option No.	Option	Feasibility (Technical)	Cost band *	Ability to Generate Benefits **	Acceptability	Timescale	Risks	Comments
			Cost Band					
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	- -	£100m plus	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.	- -	- -	- - -	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	- -	£100m plus	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.	+	- -	- - -	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 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	Chepstow Bypass - following the alignment of the railway	- - -	£100m plus	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.	- - -	- - -	- - -	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	Chepstow Bypass - Beachley and Sedbury direct from M48	- -	£50m - £100m	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.	- -	- - -	- - -	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 (Possible Location Hayes Gate/St. Pierre Golf Course)	+	£10m - £15m	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.	+	+	- -	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.
6	Severn Crossing between Lydney and A38/M5	-	£100m plus	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.	- -	- - -	- - -	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	+	£25m - £50m	This option will continue to carry existing traffic flows along the existing A48 with marginal gains in economic benefits and many non-monetised disbenefits.	- -	+	-	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.

8	New Railway Stations	- - -	£5-10 million (per station, no costs for operating services to stop included)	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 increase. Catchments for new station users could be limited due to proximity to existing Chepstow station.	+	- - -	- -	• 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. • 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 & 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. • 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. • 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.
9	Public Transport Integration	- -	£100m plus (for all Wales scheme)	Large capital cost. May not generate traditional benefits which could be monetarised.	+ +	- - -	- -	• 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 (evidence in the 'Chepstow Rail Corridor Option Development & 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 good local bus connections from surrounding suburb areas including Tutshill and Sedbury – reducing journeys using A48 into Chepstow)
10	Public Transport Upgrades (Regional)	+	£1-5 million (per annum operating costs)	Catchment area, population density and journey time of service likely to impact benefits. Congestion at end destinations to services will impact benefits.	+	- -	- -	• 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. - Potential for high running costs to service, 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.
11	Public Transport Upgrades (Local)	+	£1-5 million (per annum operating costs)	Increase in frequency may lead to benefits for local journeys.	+ +	+	-	- 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. - 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. - Could be high operational costs to services if number of passengers are not achieved to make services viable.
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	Improved frequency, linkages and a reduction in waiting time for connections will create journey time benefits as well as increased patronage.	+ + +	- -	- -	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. • A previous report 'Chepstow Rail Corridor Option Development & 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. • 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 (WelTAG stage 2). • Any assessment of improving frequencies would need to consider freight movements on the line. • 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. 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) • Would require infrastructure at STJ to allow turnaround of the service. • 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. • If service travelling just between STJ and Lydney in a loop would need turn back infrastructure at Lydney.
13	Park & Ride (Bus)/Park & Share	- -	£5-10 million (with approx. £2.5 million per annum of this operating costs to service)	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. • 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. • 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. • 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.
14	Park & Ride (Rail)	-	£1-5 million (excluding cost of any additional rail services)	Accompanied with service frequency enhancements and better connection with Bristol services at STJ could lead to increase in patronage.	+	-	-	• 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. - 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. - Without service frequency enhancement may not result in modal shift and traffic relief on A48.
15	Active Travel Upgrades	+	Over £1 million	Could lead to safety benefits as well as public health improvement benefits	+ +	+	-	- 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. - 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.
16	Active Travel Additions	+	Over £1 million	Could lead to safety benefits as well as public health improvement benefits	+ +	+	-	- This option 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.
17	Reducing the need to travel	- -	**N/A**	**N/A**	+	- -	-	- 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.
18	Containment of Settlements	- -	**N/A**	**N/A**	-	- - -	-	- 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. - Would take time to develop required services to contain the settlements. - Likely to be public opposition from residents who see Chepstow as their local service centre.
19	Congestion Charge on A48	-	**N/A**	**N/A**	- - -	- -	- -	- Extremely difficult option to implement with large public opposition. - Unlikely to raise enough revenue to fund operational costs of the scheme. - 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.
20	Do Minimum	-	**N/A**	**N/A**	- -	-	-	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.

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

Notes

* This is a high level qualitative assessment with no Value for Money calculation undertaken to date (BCR). Costs are high level estimates. This assessment would be revisited at WelTAG Stage 2 when quantitative data was available.
** Qualitative comment on some benefits that may be generated as part of the option that may be considered in a Value for Money assessment. These are indicative only at this stage and actual benefits will be calculated as part of a Value for Money assessment at WelTAG Stage 2.

Worksheet 11: Summary of Option Appraisal against the Strategic, Transport, & Management Cases

Option Ref	Option	Wales Transport Strategy Outcomes			WBOFGA Goals	Local Transport Plan Objectives		Cardiff Capital Region Strategic Objectives	Objectives						Appraisal Summary Table				Cost Band	Delivery
		Soc.	Econ.	Env.		MCC	GCC		O1	O2	O3	O4	O5	O6	Econ.	Env.	Soc.	Pub. Acc.		
1	Chepstow Bypass - Land north of Tutshill including upgrading the A466	+	+	-	0	+	0	0	+	+ +	0	0	+ +	+	+ +	- -	+	NYA	>£100m	- -
2	Chepstow Bypass – Beachley and Sedbury	+	+	-	0	+	+	0	+ + +	+ + +	0	0	+ + +	+ + +	+ + +	-	+ +	NYA	>£100m	- -
3	New highway Route following line of Railway	+	+	0	0	0	0	0	+	+	0	0	+ +	+	+	-	+	NYA	>£100m	- - -
4	New By pass utilising junction from M48.	0	0	0	0	0	0	0	+ +	+	0	0	+ +	+ +	+ + +	-	+ +	NYA	£50m - £100m	- - -
5	New M48 Junction (Possible Location Hayes Gate/St. Pierre Golf Course)	+	+	0	0	0	0	0	+	0	0	0	+	+	+	0	0	NYA	£1m - £5m	-
6	Severn Crossing between Lydney and A38/M5	0	0	0	0	0	0	0	+	+	0	0	0	0	+ +	- -	+	NYA	>£100m	- -
7	A48 and A466 Upgrades	+	+	-	0	0	-	0	+	-	-	0	+	+	+	-	+	NYA	£25m - £50m	-
8	New Railway Stations	+	+	+	+	+ +	+	+	+	+	+ +	+ +	+	0	+	0	+	NYA	£5m - £10m per station	- -
9	Public Transport Integration	+	+	+	+	+	+	0	+	0	+	+	+	0	+	+	+	NYA	>£100m	-
10	Public Transport Upgrades (Regional)	+	+	+	+	+	+	+	+	+	0	+ +	+	0	+	+	+	NYA	£1m - £5m	-
11	Public Transport Upgrades (Local)	+	+	+	+	+	+	+	+	+	+	+	0	0	0	+	+	NYA	£1m - £5m	+
12	Improved Rail Services to Bristol	+	+	+	+	+ +	+	+	+ +	+	+	+	+ +	+	+ +	0	+ +	NYA	£10m - £15m	-
13	Park & Ride/Share	0	+	+	+	+	+	+	+	+	+ +	+ +	+	0	+	0	+	NYA	£5m - £10m per station	-
14	Park & Ride (Rail)	+	+	+	+	+	+	+	+	+	+	+ +	+	0	+	0	+	NYA	£1m - £5m	-
15	Active Travel Upgrades	+	+	+	+	+	+	+	+	+	+ +	0	0	0	+	0	+	NYA	<£1m	+
16	Active Travel Additions	+	+	+	+	+	+	+	+	+	+ +	0	0	0	+	0	+	NYA	<£1m	+
17	Reducing the need to travel	0	0	+	+	+	+	0	+	0	+	0	+	0	+	+	+	NYA	N/A	-
18	Containment of Settlements	+	0	+	+	+	+	0	+	0	+	0	+	0	+	0	+	NYA	N/A	-
19	Congestion Charge on A48	-	-	+	0	+	-	0	+	0	+	0	0	- -	- -	0	0	NYA	N/A	- - -
20	Do Minimum	-	-	-	0	-	-	-	- -	- -	-	-	-	0	-	-	-	NYA	N/A	- -

Notes:

This Worksheet gathers together information, in summary form, from Worksheets 5, 6, 7, 8, 9, and 10. In relation to the Value for Money rating (#), this gives only a very high level, mainly qualitative, indication of the economic performance of each option based on costing bands and the broad benefits that may occur.

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

Appendix K
Addressing Problems

Chepstow Transport Study: How the Options will tackle the Identified Problems

The reference numbers of Problems from Worksheet 1 (Appendix C) are shown in brackets.

Option 1: Chepstow Bypass - Land north of Tutshill including upgrading the A466

A48 congestion (1, 2): This option will remove much through traffic from the A48 through Chepstow, which will relieve congestion that occurs in peak periods, particularly on the entrance to the town from Wye Bridge. It will also relieve congestion on the Newport Road approach to High Beech Roundabout. However, with traffic bound for the M48 still having to pass through the roundabout from the north, it is likely that some congestion will continue to occur. The increase in traffic on the A466 between High Beech roundabout and Crossway Green may introduce congestion that does not exist at the present time **+ +**

Rat-running (3): The option should eliminate rat-running via the old Wye bridge although the additional distance that will be introduced between east of Chepstow and the M48 may mean that rat-running through Bulwark and Thornwell will increase. This traffic may continue to use part of the A48 through Chepstow rather than the bypass -

Network resilience (4): This option will provide an additional link between Monmouthshire and Gloucestershire and as a result will greatly improve A48 network resilience **+ + +**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 may be affected by this option if the A466 upgrading impacts upon the laybys that are currently used for this purpose. If they are not affected or laybys are replicated, lift sharing may well continue. The bypass may make a difference to the routes used to get to the laybys **- -**

Future development (6, 7, 10, 14, 24, 25): The option will provide a greatly improved link between Monmouthshire and Gloucestershire, which will be of an appropriate standard to accommodate growth in South Gloucester, Bristol, and in the Chepstow/SE Monmouthshire area. However, its location is not be well placed in relation to improving access to the M48 due to the increased length compared to the existing route **+**

Air Quality (8): Reduced traffic flow on the A48 will greatly improve air quality within the A48 corridor between Moor Street and High Beech Roundabout, which is an Air Quality Management Area. However, there will be reductions in air quality in the Tutshill and Crossway Green areas due to new roads/increases in traffic flow **+ +**

Mineral deposits (9): The option passes through a Mineral Resource Area to the east of Tutshill **-**

Severance/connectivity/access (11, 13, 21): The option will address severance and the lack of connectively across the River Wye by providing an additional link between Monmouthshire and Gloucestershire. However, it will not improve cross A48 trips **+ +**

Increase in A48 traffic (12): The potential increase in traffic flows between the Chepstow area and Gloucestershire following the removal of tolls on the Severn Bridge will be accommodated by this option **+ + +**

Rail links (15, 16): This option will not improve the rail link between Gloucestershire, Chepstow and Bristol **0**

Bus services (17, 18, 19): This option has the potential to improve bus services (local and regional) due to reduced traffic flows on the A48 through Chepstow and the ability to introduce specific associated infrastructure **+ +**

Bus services/school transport (20): .This option it likely to have little or no effect on bus services (including those for schools) within the Sedbury area and further east **0**

Development restrictions (22): This option will eliminate any potential need to restrict future development as congestion issues with the A48 will be removed or reduced **+ + +**

Welsh Government National Transport Finance Plan (23): This document does not include proposals for a Chepstow Bypass **- -**

Funding (26, 27): The cross border (county and country) nature of this option will require a number of funding conditions to be met and ultimately funding may not be available **- -**

Political (28, 29): With this option crossing national and county boundaries, there is potential for political issues **- -**

Active Travel and safety (30, 31, 32, 33): This option will allow improved Active Travel facilities to be provided on the existing A48 corridor in Chepstow due to the reduced traffic flows on the A48. However, the local topography will continue to be a factor in the take up of Active Travel **+ +**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 2: Chepstow Bypass – Beachley and Sedbury

A48 congestion (1, 2): This option will remove the majority of through traffic from the A48 through Chepstow, which will relieve congestion that occurs in peak periods **+ + +**

Rat-running (3): The option should eliminate rat-running via the old Wye bridge. However, trips between east of Chepstow and the Wye Valley will continue to use the existing A48 through Chepstow traffic due to the shorter distance **+ + +**

Network resilience (4): This option will provide an additional link between Monmouthshire and Gloucestershire and as a result will greatly improve A48 network resilience **+ + +**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 is likely to continue although the bypass may make a difference to routes to get to the laybys **0**

Future development (6, 7, 10, 14, 24, 25): The option will provide a greatly improved link between Monmouthshire and Gloucestershire, which will be of an appropriate standard to accommodate growth in South Gloucester, Bristol, and the Chepstow/SE Monmouthshire area **+ + +**

Air quality (8): Reduced traffic flow on the A48 will greatly improve air quality within the A48 corridor between Moor Street and High Beech Roundabout, which is an Air Quality Management Area. However, there will be reductions in air quality in the Beachley and Sedbury areas due to new roads/increases in traffic flow **+ +**

Mineral deposits (9): The option passes through a Mineral Resource Area within Beachley and Sedbury **-**

Severance/connectivity/access (11, 13, 21): The option will address severance and the lack of connectively across the River Wye by providing an additional link between Monmouthshire and Gloucestershire. However, it will not improve cross A48 trips **+ + +**

Increase in A48 traffic (12): The potential increase in traffic flows between the Chepstow area and Gloucestershire following the removal of tolls on the Severn Bridge will be accommodated by this option **+ + +**

Rail links (15, 16): This option will not improve the rail link between Gloucestershire, Chepstow and Bristol **0**

Bus services (17, 18, 19): This option has the potential to improve bus services (local and regional) due to reduced traffic flows on the A48 through Chepstow and the ability to introduce specific associated infrastructure **+ +**

Bus services/school transport (20): This option may lead to the improvement of bus services (including those for schools) within the Sedbury area and further east **+**

Development restrictions (22): This option will eliminate any potential need to restrict future development as congestion issues with the A48 will be removed or reduced **+ + +**

Welsh Government National Transport Finance Plan (23): This document does not include any proposals for a Chepstow Bypass **- -**

Funding (26, 27): The cross border (county and country) nature of this option will require a number of funding conditions to be met and ultimately funding may not be available **- -**

Political (28, 29): With this option crossing national and county and district boundaries, there is potential for political issues **- -**

Active Travel and safety (30, 31, 32, 33): This option will allow improved Active Travel facilities to be provided on the existing A48 corridor in Chepstow due to the reduced traffic flows on the A48. However, the local topography will continue to be a factor in the take up of Active Travel **+ +**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 3: New highway Route following line of Railway

A48 congestion (1, 2): This option will remove the majority of through traffic from the A48 through Chepstow, which will relieve congestion that occurs in peak periods, particularly between Moor Street and High Beech roundabout. However, due to its commencement on the west side of Wye Bridge, queuing/congestion may continue in this area + **+**

Rat-running (3): The option may reduce rat-running via the old Wye Bridge if queuing/congestion on Wye Bridge is reduced. This will largely depend on the way that Option 3 connects to the A48 **+**

Network resilience (4): Although not an additional crossing of the River Wye, this option will provide an additional link between Monmouthshire and Gloucestershire. As a result, this will improve A48 network resilience through Chepstow **+ +**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 is likely to continue although the bypass may make a difference to routes to get to the laybys **0**

Future development (6, 7, 10, 14, 24, 25): Although not an additional crossing of the River Wye, this option will provide an improved link between Monmouthshire and Gloucestershire reducing the need to use the substandard Hardwick Hill by the majority of through traffic. The link will be of an appropriate standard to accommodate growth in South Gloucester, Bristol, and the Chepstow/SE Monmouthshire area **+ +**

Air quality (8): Reduced traffic flow on the A48 will greatly improve air quality within the A48 corridor between Moor Street and High Beech Roundabout, which is an Air Quality Management Area. However, there will be reductions in air quality in the vicinity of this option particularly in the area of Chepstow Railway Station **+**

Mineral deposits (9): The option will have no impact on Mineral Resource Areas **0**

Severance/connectivity/access (11, 13, 21): The option will not address severance and the lack of connectively across the River Wye. However, it will provide an additional link between Monmouthshire and Gloucestershire although contained wholly in Monmouthshire. As a result will not relieve any of the A48 through Gloucestershire or in the vicinity of Wye Bridge. Neither will it improve cross A48 trips **+ +**

Increase in A48 traffic (12): The potential increase in traffic flows between the Chepstow area and Gloucestershire following the removal of tolls on the Severn Bridge may not be accommodated by this option due to possible topography limitations above the railway **+**

Rail links (15, 16): This option will not improve the rail link between Gloucestershire, Chepstow and Bristol **0**

Bus services (17, 18, 19): This option has the potential to improve bus services (local and regional) due to reduced traffic flows on the A48 through Chepstow **+**

Bus services/school transport (20): This option may lead to the improvement of bus services (including those for schools) within the Sedbury area and further east **+**

Development restrictions (22): This option may reduce the need to restrict future development. The extent of this will be dependent upon the way that Option 3 connects to the A48 **+ +**

Welsh Government National Transport Finance Plan (23): This document does not include any proposals for a Chepstow Bypass **- -**

Funding (26, 27): The cross border (county and country) nature of this option will require a number of funding conditions to be met and ultimately funding may not be available **- -**

Political (28, 29): As this option is entirely within Monmouthshire/Wales, there is less likelihood for political issues **-**

Active Travel and safety (30, 31, 32, 33): This option will allow improved Active Travel facilities to be provided on the existing A48 corridor in Chepstow due to the reduced traffic flows on the A48. However, the local topography will continue to be a factor in the take up of Active Travel **+ +**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 4: New Bypass utilising junction from M48

A48 congestion (1, 2): This option will remove some of the through traffic from the A48 through Chepstow, which will relieve congestion that occurs in peak periods. However, as the option meets the M48 well to the east, it may not be attractive to traffic travelling between Gloucestershire and South Wales **+ +**

Rat-running (3): The option should eliminate rat-running utilising the old Wye bridge. However, the existing A48 may still be used by South Wales traffic **+ +**

Network resilience (4): This option will provide an additional link between Gloucestershire and the M48 and as a result will greatly improve A48 network resilience. However, it should be noted that this option is entirely within Gloucestershire **+ +**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 is likely to continue although the bypass may make a difference to the routes used to get there **0**

Future development 6, 7, 10, 14, 24, 25): The option will provide a greatly improved link between Gloucestershire and the M48, which will be of an appropriate standard to accommodate growth in South Gloucester. It will be a less attractive link between Monmouthshire and Gloucestershire in relation of potential growth in the general Caldicot area **+ +**

Air quality (8): Reduced traffic flow on the A48 will improve air quality within the A48 corridor between Moor Street and High Beech Roundabout, which is an Air Quality Management Area. However, there will be reductions in air quality in the vicinity of this option, Beachley and Sedbury **+**

Mineral deposits (9): The option passes through a Mineral Resource Area within Beachley and Sedbury **-**

Severance/connectivity/access (11, 13, 21): The option will address severance and the lack of connectivity across the River Wye by providing an additional link between Gloucestershire and the M48. However, this will be entirely within Gloucestershire and will not improve cross A48 trips **+ +**

Increase in A48 traffic (12): The potential increase in traffic flows between Gloucestershire and the M48 following the removal of tolls on the Severn Bridge will be accommodated by this option. However, the location of the M48 link well to the east will restrict its attractiveness to South Wales **+ +**

Rail links (15, 16): This option will not improve the rail link between Gloucestershire, Chepstow and Bristol **0**

Bus services (17, 18, 19): This option has the potential to improve bus services (local and regional) due to reduced traffic flows on the A48 through Chepstow **+ +**

Bus services/school transport (20): This option may lead to the improvement of bus services (including those for schools) within the Sedbury area and further east **+**

Development restrictions (22): This option will eliminate any potential need to restrict future development as congestion issues with the A48 will be reduced **+**

Welsh Government National Transport Finance Plan (23): This option is entirely within Gloucestershire/England and therefore it is not affected by the existence of this document **0**

Funding (26, 27): Although this option is entirely within Gloucestershire/England, it is likely that it will require funding conditions to be met and ultimately funding may not be available **- -**

Political (28, 29): As this option is entirely within Gloucestershire/England, there is less likelihood for political issues **-**

Active Travel and safety (30, 31, 32): This option will allow improved Active Travel facilities to be provided on the existing A48 corridor in Chepstow due to the reduced traffic flows on the A48. However, the local topography will continue to be a factor in the take up of Active Travel **+ +**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 5: New M48 Junction at Hayes Gate/St. Pierre Golf Course

A48 congestion (1, 2): This option will not remove any through traffic from the A48 through Chepstow and will therefore not reduce congestion. However, it will remove some traffic from High Beech Roundabout as Caldicot traffic will be able to stay on the M48 thus avoiding the need to divert onto the A466 and A48 and pass through the roundabout. A new M48 junction further west that could be associated with development in South East Monmouthshire will also have a similar impact on High Beech Roundabout **-**

Rat-running (3): The option will do nothing to eliminate rat-running utilising the old Wye bridge **-**

Network resilience (4): This option will not provide any additional A48 network resilience through Chepstow although it will give an additional link to and from Caldicot **0**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 will not be affected by this option, however reducing flows on A466 may improve safety of this activity **0**

Future development (6, 7, 10, 14, 24, 25): This option could assist in accommodating more future growth in south east Monmouthshire and Chepstow +

Air quality (8): This option will do very little, or nothing to improve air quality within the A48 corridor between Moor Street and High Beech Roundabout, which is an Air Quality Management Area **0**

Mineral deposits (9): The option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): The option will not address severance and the lack of connectivity across the River Wye will not improve cross A48 trips **-**

Increase in A48 traffic (12): The potential increase in traffic flows between Gloucestershire and the M48 following the removal of tolls on the Severn Bridge will not be accommodated by this option. However it may provide some relief to High beech roundabout providing more direct access to communities such as caldicot etc **+**

Rail links (15, 16): This option will not improve the rail link between Gloucestershire, Chepstow and Bristol **0**

Bus services (17, 18, 19): This option has limited potential to improve bus services (local and regional) on the A48 through Chepstow **0**

Bus services/ school transport (20): This option will have no effect on bus services (including those for schools) within the Sedbury area and further east **-**

Development restrictions (22): This option could provide some could assist in accommodating more future growth in south east Monmouthshire and Chepstow, however will not directly affect the A48 corridor. +

Welsh Government National Transport Finance Plan (23): This option is not within the Welsh Government National Transport Finance Plan **-**

Funding (26, 27): It is likely that it will require funding conditions to be met. Smaller value scheme compared to bypass and therefore may have more funding sources available to bid for +

Political (28, 29): As this option is entirely within Monmouthshire/Wales, there is less likelihood for political issues **+**

Active Travel and safety (30, 31, 32, 33): This option will limit the ability to provide Active Travel facilities in the vicinity of the existing A48 corridor in Chepstow as traffic flows will not reduce **0**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 6: Severn Crossing between Lydney and A38/M5

A48 congestion (1, 2): Although this option may remove some longer distance north/southbound traffic from Chepstow, there will still be a need for local/regional traffic to pass through the town on the A48. There will be some congestion reduction, which can only be determined through a large scale traffic model **-**

Rat-running (3): The option will do nothing to eliminate rat-running utilising the old Wye bridge **- -**

Network resilience (4): This option will not provide any additional A48 network resilience through Chepstow **- - -**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 will not be affected by this option **0**

Future development (6, 7, 10, 14, 24, 25): Although this option may be attractive to future development in the Lydney area and part way south towards Chepstow, it is unlikely to address the access requirements of development in the area of South Gloucestershire immediately north of Chepstow and in South East Monmouthshire - -

Air quality (8): This option will do nothing to improve air quality within the A48 corridor between Moor Street and High Beech Roundabout, which is an Air Quality Management Area **- - -**

Mineral deposits (9): The option may affect Mineral Resource Areas **-**

Severance/ connectivity/ access (11, 13, 21): The option will not address severance and the lack of connectively across the River Wye nor will it improve cross A48 trips **- - -**

Increase in A48 traffic (12): This option is likely to take only limited traffic resulting from the removal of tolls on the Severn Bridge **- - -**

Rail links (15, 16): This option will not improve the rail link between Gloucestershire, Chepstow and Bristol **0**

Bus services (17, 18, 19): This option has only limited potential to improve bus services (local and regional) on the A48 through Chepstow **- -**

Bus services/ school transport (20): This option will have no effect on bus services (including those for schools) within the Sedbury area and further east **0**

Development restrictions (22): This option will not lead to a lifting of the need to restrict future development as congestion issues with the A48 are unlikely to reduce to any great extent **- -**

Welsh Government National Transport Finance Plan (23): This option is entirely within Gloucestershire/England and therefore it is not affected by the existence of this document **0**

Funding (26, 27): Although this option is entirely within Gloucestershire, it is likely that it will require funding conditions to be met and ultimately funding may not be available **- - -**

Political (28, 29): As this option is entirely within Gloucestershire/England, there is less likelihood for political issues **-**

Active Travel and safety (30, 31, 32, 33): This option may only allow limited Active Travel facilities to be provided on the existing A48 corridor in Chepstow as the scale of traffic flow reductions cannot be determined at the present time **- -**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 7: A48 and A466 Upgrades

A48 congestion (1, 2): This option will retain the existing A48 corridor although the highway standards will be improved to cater for anticipated traffic volumes. However, it is not known if the required standard could be achieved. It may be that some congestion could still occur. All traffic will still have to pass through High Beech Roundabout, which will also have to be improved. There will be little effect on congestion at Wye Bridge **-**

Rat-running (3): Depending upon the success of A48 and A466 upgrades, there could still be rat-running utilising the old Wye bridge **- -**

Network resilience (4): This option will be an upgrade to the existing A48 and will therefore not provide any additional A48 network resilience through Chepstow **- - -**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 will be affected by this option if the upgrading impacts upon the laybys that are used for this purpose. Even if this is the case, it is possible that layby provision will be provided **0**

Future development (6, 7, 10, 14, 24, 25): This option is likely to have very limited success in accommodating growth in South Gloucester, Bristol, and Chepstow. The upgrading of an existing road (the A48) may not be seen as enough of an incentive to developments, particularly in the area of Gloucestershire to the north of Chepstow **- -**

Air quality (8): This option is likely to worsen air quality within the A48 corridor between Moor Street and High Beech Roundabout, which is an Air Quality Management Area as traffic flows will increase and properties will be closer to the upgraded road **- - -**

Mineral deposits (9): The option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): The option will not provide any additional transport crossings of the River Wye and therefore severance and the lack of connectively will not be addressed. It will not improve cross A48 trips **- - -**

Increase in A48 traffic (12): It may be possible for this option to accommodate the potential increase in traffic flows between Gloucestershire and the M48 following the removal of tolls on the Severn Bridge. However, the built up area through which it passes may limit what can actually be achieved **+**

Rail links (15, 16): This option will not improve the rail link between Gloucestershire, Chepstow and Bristol **0**

Bus services (17, 18, 19): Unless bus lanes were included in this option, it does not have the potential to improve bus services (local and regional) on the A48 through Chepstow as the existing road will remain the only east/west link through the town **- -**

Bus services/ school transport (20): This option will have no effect on bus services (including those for schools) within the Sedbury area and further east **-**

Development restrictions (22): This option may not lead to a lifting of the need to restrict future development as the improvement may not be seen as an appropriate solution to the problems **-**

Welsh Government National Transport Finance Plan (23): This option is not within the Welsh Government National Transport Finance Plan **-**

Funding (26, 27): Although this option is entirely within Monmouthshire, it is likely that it will require funding conditions to be met and ultimately funding may not be available **-**

Political (28, 29): As this option is entirely within Monmouthshire/ Wales, there is less likelihood for political issues **-**

Active Travel and safety (30, 31, 32, 33): There will be a requirement to consider Active Travel facilities within this option. However, the nature of the area through which it passes and the traffic that will still be using the existing A48 corridor may not be conducive to the promotion of Active Travel. There is potential to introduce Active Travel measures in the vicinity of Wye Bridge **- -**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 8: New Railway Stations

A48 congestion (1, 2): This option would provide two stations to one to the east of Chepstow Station and one to the west which would provide an alternative method of transport to the A48 and possibly result in fewer local journeys along the A48 from the South Gloucestershire area. However, more long distance journeys are likely to be unaffected due to the poor connections at Severn Tunnel Junction for onwards journeys towards Bristol. Catchment for new stations unlikely to be large new users due to abstraction from existing station. **0**

Rat-running (3): This option is likely to only have a limited impact on reducing rat running, as a new station will likely only have an impact on reducing local journeys due to the poor train connections at Severn Tunnel Junction for onward journeys towards Bristol **-**

Network resilience (4): This option will improve network resilience to some extent by providing an alternative method of transport for crossing the River Wye. **+**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 is unlikely to be affected by this option. **0**

Future development (6, 7, 10, 14, 24, 25): This option is likely to have a small positive impact on future development areas by making them more attractive to developments. However, due to the deliverability issues of the scheme such as the likelihood that two stations close to each other will not be feasible, the impact of this scheme on future development will be limited. Without an increase in line frequency, ability to provide alternative access to centres such as Bristol will be limited (as tie into STJ services is sporadic). Tie into wider area metro along only achieved if with increased line frequency. Further development that may be allocated in next phase of MCC and Forest of Dean District Council Developments Plans may increase demand for stations via expansion of local catchments. **0**

Air quality (8): This option will improve air quality to some extent by potentially removing some local trips, however, the scheme is likely only to take demand from the existing Chepstow Railway Station as opposed to creating new demand, so benefits will be limited **+**

Mineral deposits (9): The option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): This option will improve the connectivity between the Tutshill / Sedbury and Newhouse areas in Chepstow, however the new stations are likely to only impact local journeys, and the likelihood of trains stopping at two new stations is very limited due to timetabling constraints. Without an increase in line frequency demand for the new stations is unlikely to be generated. **+**

Increase in A48 traffic (12): This option may provide a viable alternative to the A48 for local journeys. However will have limited benefits for regional connections without better connections to services at STJ to Bristol **+**

Rail links (15, 16): This option will not improve the rail links to Bristol or the frequency of services without an accompanying increase in line frequency to provide increase links with Bristol via STJ. **-**

Bus services (17, 18, 19): This option will have no impact on bus services **-**

Bus services/ school transport (20): This option will have no impact on bus services or school transport **-**

Development restrictions (22): This option would provide additional transport access / options, however it may not open up land for future development without accompanying increase in line frequencies.**-**

Welsh Government National Transport Finance Plan (23): This option is not within the Welsh Government National Transport Finance Plan **-**

Funding (26, 27): Funding may be difficult to gain for large capital schemes, possible new station fund applicability if DfT launch any further rounds in the future. **-**

Political (28, 29): Scheme need agreement from a number of parties including network Rail **-**

Active Travel and safety (30, 31, 32, 33): This option will have no impact on Active Travel options along the A48 **0**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 9: Public Transport Integration

A48 congestion (1, 2): This option is unlikely to address congestion on the A48 directly. May assist and make Public Transport Journey easier and more integrated but is unlikely to take a large number of user of the A48 corridor. **0**

Rat-running (3): The option will not eliminate rat-running utilising the old Wye bridge **0**

Network resilience (4): This option will not provide any additional A48 network resilience through Chepstow **0**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 will not be affected by this option **0**

Future development (6, 7, 10, 14, 24, 25): This scheme will have limited impacts on improving the situation for future developments or housing growth, particularly due to the long timescales of delivery for implementing this option. Integrated ticking access across Wales would assist in enabling growth and usage of the proposed metro. Integrated ticketing along will not help to address any increase in traffic on the A48 that may occur in future years due to Severn Bridge tolls being removed or increases in development proposed by the future MCC and Forest of Dead District Council future Local Development Plans. **0**

Air quality (8): This option will do nothing to improve air quality within the A48 corridor between Moor Street and High Beech Roundabout, which is an Air Quality Management Area **0**

Mineral deposits (9): The option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): This option is likely to improve connectivity between modes of public transport increasing ease of use and integration for the public **+**

Increase in A48 traffic (12): The potential increase in traffic flows between Gloucestershire and the M48 following the removal of tolls on the Severn Bridge is unlikely to be addressed by this option **0**

Rail links (15, 16): This option will not improve the rail links to Bristol or the frequency of services **0**

Bus services (17, 18, 19): This option will improve integration between service which may improve ease of usage **++**

Bus services/ school transport (20): Integrated ticketing may improve ease of use for local and regional bus services and switching between services **+**

Development restrictions (22): Option unlikely to address opening up land for development.**0**

Welsh Government National Transport Finance Plan (23): Large scale Wales wide project. Included in national Transport Plan (Option IT2) **+**

Funding (26, 27): This scheme would need to be all Wales and Cross border. Therefore an agreement would be required form a large number of parties and cross border funding required**. -**

Political (28, 29): It will be very difficult to achieve a fully integrated cross border ticketing. Integrated ticketing has been slow to roll out in Wales, so a scheme across the border will take time to implement **- -**

Active Travel and safety (30, 31, 32, 33): This option will have no impact on Active Travel options along the A48 **0**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 10: Public Transport Upgrades (Regional)

A48 congestion (1, 2): 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. Congestion along the route and congestion at destination points at Cardiff and Bristol may deter users as no benefit as an alternative to the private car. **-**

Rat-running (3): The option will not address eliminating rat-running utilising the old Wye bridge **0**

Network resilience (4): This option will not provide any additional A48 network resilience through Chepstow **0**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 could potentially decrease is users opt to travel by a regional bus service rather than car share. However this will depend on destination point of the lift shares and whether meet by new regional bus scheme.**-**

Future development (6, 7, 10, 14, 24, 25): This scheme will have limited impacts on improving the situation for future developments or housing growth, particularly due to the risk of low user numbers if the service did not provide a consistent and good journey time benefit to transferring from car. It may tie into wider regional metro proposals for South East Wales for services to Cardiff. Congestion at end destinations may worsen with removal of tolls at Severn bridges resulting in a greater journey time for regional bus services unless appropriate bus priority measures are implemented. **-**

Air quality (8): This option is unlikely to improve air quality in the area due to predicted low user levels **0**

Mineral deposits (9): The option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): Will improve severance to some extent for the communities between Chepstow and the areas of Gloucestershire and the Forest of Dean, in terms of improving access to regional centres such as Gloucestershire, Bristol and Cardiff. However, the improvements will only be achieved if a large number of people use the services to ensure the frequency of services are maintained **-**

Increase in A48 traffic (12): This option is unlikely to have a large impact on improving A48 traffic after the removal of the tolls across the Severn Bridge, unless there is a large uptake in user numbers for new regional bus services. With a variable journey time due to likely congestion in Chepstow and at destination points may not offer viable alternative option. **0**

Rail links (15, 16): This option will not improve the rail links to Bristol or the frequency of services **-**

Bus services (17, 18, 19): This option will improve public transport alternatives to the private car, and provide bus alternatives for regional journeys**.** However, likely high running costs to implementing required frequency if it is to be a viable alternative to private car and possible delays due to congestion at destinations point without adequate bus prioritisation measures **+**

Bus services/ school transport (20): This option will only improve the congestion and school bus services if a high number of people choose it as an alternative method of transport to the private car along the A48 corridor, thus freeing up capacity for local / school services **+**

Development restrictions (22): This option will only aid in reducing congestion if a high number of people choose it as an alternative method of transport to the private car opening land for development **0**

Welsh Government National Transport Finance Plan (23): This option is not within the Welsh Government National Transport Finance Plan **-**

Funding (26, 27): The cross border nature of this option will require a number of funding conditions to be met and ultimately funding may be difficult to source. Private operator engagement, routes likely to need funding support -

Political (28, 29): As this scheme is across borders, there may be a number of parties to co-ordinate for implementation **-**

Active Travel and safety (30, 31, 32, 33): This option will have no impact on Active Travel options along the A48 **0**

Parking (34): This option will not lead to the provision of more parking in Chepstow **0**

Option 11: Public Transport Upgrades (Local)

A48 congestion (1, 2): An improvement in local bus services, particularly for the communities of Tutshill and Sedbury will decrease the number of single car journeys in 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 as more people choose public transport. Frequency and route would need to be adequate to generate patronage. **+**

Rat-running (3): The option will provide an alternative method of transport so may reduce the number of car users, therefore reducing rat running for local users **+**

Network resilience (4): This option will not provide any additional A48 network resilience through Chepstow **0**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 is unlikely to be affected by this option **0**

Future development (6, 7, 10, 14, 24, 25): Improvements in local bus services could assist in providing increased access to proposed new developments outlined in existing local development plans and proposed development plans for the Tutshill and sedbury area. It may also aid in providing a viable alternative for local journeys in and around Chepstow, especially if any housing / population growth develops as consequence of the removal of Severn bridge tolls. A better local bus service could tie to wider regional services helping to achieve the aims for the Metro in South East Wales **+**

Air quality (8): This option may improve air quality if there is transfer from private car journeys for local journeys around Chepstow **0**

Mineral deposits (9): The option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): This option will provide improved access for the communities of Tutshill and Sedbury to services within Chepstow **+**

Increase in A48 traffic (12): 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 corridor **+**

Rail links (15, 16): This option will have no impact on improving the rail links to Bristol or the frequency of services. However better local bus services to the railway stations may make rail services more accessible to residents. **+**

Bus services (17, 18, 19): This option will improve public transport alternatives to the private car, and provide bus alternatives for local journeys to key trip generators in Chepstow including better connection to rail services **++**

Bus services/ school transport (20): This option could help to improve school transport journey times by reducing A48 congestion in peak periods if high frequency services are operated on key desire line routes **+**

Development restrictions (22): A reduction in congestion could be seen if the new services encourage increase patronage and transfer from the private car**+**

Welsh Government National Transport Finance Plan (23): This option is not within the Welsh Government National Transport Finance Plan **-**

Funding (26, 27): The cross border nature of this option will require a number of funding conditions to be met. This could make funding of the option more problematic **-**

Political (28, 29): As this scheme is across borders, there will be a number of parties to co-ordinate for implementation **-**

Active Travel and safety (30, 31, 32, 33): This option is unlikely to have an impact on Active Travel options along the A48 **0**

Parking (34): This option may lead to increase parking capacity in Chepstow if people using buses for local trips to the town centre increases **+**

Option 12: Improved Rail Services to Bristol

A48 congestion (1, 2): This option would provide a viable alternative for travel to Bristol, by improving the connections and frequency of services to Severn Tunnel Junction and onwards to Bristol from Lydney and Chepstow. This could reduce the vehicles travelling along the A48 corridor especially during peaks. Passengers located in Tutshill and Sedbury would still need to access Chepstow station via the A48, however, the corridor as a whole could see a reduction in car trips if a viable public transport options to centres such as Bristol and Cardiff existed. **+**

Rat-running (3): The option will provide an alternative method of transport for journeys to Bristol which will reduce car dependency and congestion along the A48, hopefully resulting in fewer people needing to use the old Wye Bridge as a rat-run to avoid ques on the A48 as it crosses from Gloucestershire into Chepstow **+**

Network resilience (4): This option will provide an alternative to car use along the A48 into Chepstow and therefore help network resilience **+**

Lift-sharing (5): Lift sharing using the laybys adjacent to the A466 are unlikely to be affected by this option. There may be a limited number of users who may transfer to rail services from car sharing depending on the destinations of users **0**

Future development (6, 7, 10, 14, 24, 25): Improved rail services to Severn Tunnel Junction and onwards to Bristol and increased frequency of services calling at Chepstow and Lydney will result in a viable alternative to single car use along the A48 corridor. This could help create capacity for future development or a viable travel alternative to those who may be attracted to the area and will commute to Cardiff or Bristol. Increases in frequency of services along the Chepstow Line was detailed in the recent Wales and borders Franchise announcement, with this option supporting this proposal and matching to wider Metro objectives for the wider South East Wales area **++**

Air quality (8): This option will provide a viable alternative transport method to single car use, which will encourage people away from their car. In turn, this will help reduce congestion and emissions along the A48 which will improve air quality in the area. **+**

Mineral deposits (9): The option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): This option will not directly improve access for communities severed by the River Wye, the option will improve access from further afield areas such as Lydney **0**

Increase in A48 traffic (12): This option will provide a viable alternative method of transport for passengers travelling from Chepstow and Lydney, and help to create A48 capacity and transport alternatives for any users attracted to the area as a consequence of the Severn Bridge tolls removal. -

Rail links (15, 16): This option significantly improves rail links to Bristol from Lydney and Chepstow by increasing the services stopping at these stations which improves the connectivity to main line services at Severn Tunnel Junction **+++**

Bus services (17, 18, 19): This option will have no impact on bus services **0**

Bus services/ school transport (20): This option will have limited impact on bus services or improving school transport journey times, other than to create potential capacity on the A48 from modal transfer from private car to train. This could improve journey times for school services during the peaks.**0**

Development restrictions (22): This option will improve connectivity to the wider area for Lydney and Chepstow and aid in attracting inward investment and helping to address capacity on the A48 corridor **+**

Welsh Government National Transport Finance Plan (23): Option Rs3 in plan outlines opportunities to develop rail routes servicing Wales delivered via Dft managed English services, which could aid in increasing frequencies on cross border services. **+**

Funding (26, 27): The cross border nature of this option will require a number of funding bodies to coordinate **-**

Political (28, 29): As this scheme is across borders, there may a number of bodies who will need to co-ordinate to achieve implementation **-**

Active Travel and safety (30, 31, 32, 33): This option will have no impact on Active Travel options along the A48 **0**

Parking (34): This option will likely lead to increased demand for parking at Chepstow for people accessing the rail services **-**

Option 13: Park & Ride / Share

A48 congestion (1, 2): Depending on the location of the park and ride facility, there is potential to reduce congestion along the A48 to a small extent. A park and ride / park and share facility located at Tutshill is unlikely to have a large impact on congestion along the A48 due to the predicted small number of users that would use the service due to distance to their end location. A park and share at Tutshill may encourage users to stop and share along the A48 corridor, therefore easing congestion through Chepstow. A facility at Chepstow Racecourse to serve the Town Centre or wider region is likely to have limited impact on A48 congestion. **0**

Rat-running (3): Rat – running may reduce if Park and Share / Park and Ride facility at Tutshill reduced congestion on A48. +

Network resilience (4): This option will not provide any additional A48 network resilience through Chepstow **0**

Lift-sharing (5): Providing a park and ride / Park and Share facility at Tutshill, may result in a reduction of parking in the lay-bys adjacent to the A466 as it would be well placed to capture commuters before they crossed the A48. A Park and Ride / Share at Chepstow Racecourse may also intercept those wishing to park and share traveling along the A466. However, some vehicles parked in the laybys currently are likely to have come from the M48 and not the other side of the river, so the impacts could be limited. **+**

Future development (6, 7, 10, 14, 24, 25): This option is unlikely to improve the constraints for future development unless it results in a large reduction in congestion on the A48. Due to the location and distance to journey destination uptake of park and ride facilities might be limited reducing modal shift potential. Park and Share may at Tutshill create some capacity on the A48 corridor **-**

Air quality (8): Some modal shift may result in a small positive impact on air quality **+**

Mineral deposits (9): The option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): A park and ride facility at Tutshill could assist to improve severance issues for communities located in Tutshill and Sedbury areas to a small extent. **+**

Increase in A48 traffic (12): Limited small additional capacity may be created to assisting in forecast additional traffic form toll removal. Park and Ride may have larger catchment area is new development implemented in the area.**+**

Rail links (15, 16): This option will not improve the rail links to Bristol or the frequency of services **0**

Bus services (17, 18, 19): Unlikely to adi in improving local bus network, option would provide an alternative to access Chepstow if a service was located at Tutshill, and provided connections to the rail station. A facility at Chepstow is unlikely to have an impact, as is a facility at Lydney but would provide better access to wider area **+**

Bus services/ school transport (20): This option is unlikely to improve journey times for school transport **- -**

Welsh Government National Transport Finance Plan (23): Not specially detailed in the plan **-**

Funding (26, 27): The cross border nature of this option will require a number of funding sources to implement, along with conditions and bodies to co-ordinate **-**

Political (28, 29): As this scheme is across borders, there may be a number of parties to co-ordinate for implementation **-**

Active Travel and safety (30, 31, 32, 33): This option will have no impact on Active Travel options along the A48 **0**

Parking (34): A Park and ride facility at Chepstow servicing the town centre could create parking capacity with in the town centre of Chepstow +

Option 14: Park & Ride (Rail)

A48 congestion (1, 2): The improvement of rail based park and ride at Chepstow and Lydney rail stations would only be effective in reducing congestion along the A48 if there was a simultaneous service frequency enhancement. Without this, park and ride facilities are unlikely to result in modal shift and traffic relief on the A48. With line frequency enhancement Park and Ride improvements at Chepstow and Lydney could improve congestion on the A48 corridor. **+**

Rat-running (3): Park and ride facilities at Chepstow and Lydney rail stations are likely to reduce rat running along the Old Wye Bridge if less queuing is evident along the A48 corridor **+**

Network resilience (4): This option will have a small positive impact on network resilience by crediting an alternative method for crossing the Wye **+**

Lift-sharing (5): A park and ride facility located at Chepstow and improved station facilities may slightly reduce the number of vehicles parking in the laybys adjacent to the A466 if modal shift from park and share to rail park and ride occurs. This park and ride (rail) option is likely to be more effective if the frequency of trains to Bristol are also increased to maximise patronage on the line. Land availability at Chepstow could affect implementation of a scheme +

Future development (6, 7, 10, 14, 24, 25): This option will have a small impact on easing congestion to alleviate constrictions on development land, but only if accompanied with increases in line frequency. Better Park and Ride and rail access to economic centres such as Bristol and Cardiff could act as attractors to developers and future residents if accompanied by lien frequency enhancements. Park and Ride improvements would tie into Metro proposals per the South East area. +

Air quality (8): If modal shift was created, with commuters choosing the train from Lydney, then this may have a positive impact on air quality +

Mineral deposits (9): The option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): This option will not improve local access or connectivity across the River Wye but could assist in strategic connectivity if accompanied by line frequency enhancements**.**

Increase in A48 traffic (12): This option could have an impact on traffic levels creating capacity on the A48 if rail services to Bristol were also improved, making the train a more viable option. This could assist in addressing any predicted traffic flow increases forecast form the removal of the Severn Bridge tolls **+**

Rail links (15, 16): If this option is combined with station improvements and service frequency enhancement for services to Bristol, then this would improve the rail links from the area greatly **++**

Bus services (17, 18, 19): This option will have no impact on bus services **0**

Bus services/ school transport (20): This option may have no impact on bus services or improving school transport journey times if packaged with lie frequency enhancements, creating capacity on the A48 from potential modal shift **+**

Development restrictions (22): Any increase in capacity created on the A48 corridor could assist in predicted future development in the area **+**

Welsh Government National Transport Finance Plan (23): This option is not specifically included within the Welsh Government National Transport Finance Plan, however would help meet general objectives to improve Rail Park and ride **+**

Funding (26, 27): The cross border nature of this option may make funding harder to gain **-**

Political (28, 29): As this scheme is across borders, there will be a number of parties to co-ordinate for implementation **(-)**

Active Travel and safety (30, 31, 32, 33): This option is unlikely to impact on Active Travel options along the A48 **0**

Parking (34): This option will improve and increase the parking facilities located at Chepstow Station **+**

Option 15: Active Travel Upgrades

A48 congestion (1, 2): The provision of a new dedicated pedestrian and cycle bridge attached to the A48 Wye Bridge will provide a safe alternative method of transport and improve the links between Chepstow town centre and the communities of Tutshill, Sedbury and Beachley. However, this option is likely to only impact local traffic, and is 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. **0**

Rat-running (3): This option provides an alternative, more sustainable transport option for local journeys so may reduce rat running to some extent. However, more detailed data on the origins of vehicles using the Old Wye Bridge would need to be obtained to identify whether cars using the route are local or from further afield. If they are from the latter, then this option is unlikely to make a difference to rat running **0**

Network resilience (4): This option will have no impact on improving network resilience, as the active travel route will be affixed to the existing bridge **0**

Lift-sharing (5): This option is unlikely to impact on reducing the number of vehicles parked in the laybys along the A466 **0**

Future development (6, 7, 10, 14, 24, 25): This option is likely to be more for local journeys from Tutshill, Sedbury and Beachley across to Chepstow, as opposed to more strategic journeys. This option therefore if implemented in isolation will not likely to benefit or permitted future development. It does aid in addressing meeting Active Travel Act obligations.

Air quality (8): A modal shift from the car to walking and cycling would reduce air quality in the area of Chepstow with an AQMA, but the level to which this is effective will depend on numbers who use the new bridge for local trips **+**

Mineral deposits (9): This option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): This option will improve access by providing an alternative method of transport for the communities across the Wye river to Chepstow **+**

Increase in A48 traffic (12): The new bridge is likely to assist in replacing local trips but more strategic journeys which are likely to increase once the tolls are removed **+**

Rail links (15, 16): An improvement in Active Travel routes could help provide access to rail services but will not improve rail links to Bristol **0**

Bus services (17, 18, 19): This option provides a viable alternative to bus services, but will not improve the frequency or number of services along this section **0**

Bus services/ school transport (20): An improvement in Active Travel routes will reduce congestion on the road through providing an alternative method of transport to the car for local journeys, and may improve bus journey times. However, the extent of improvement to bus journey times depends on the level of active travel use **+**

Development restrictions (22): The new bridge is likely to assist in replacing local trips so may improve access to development land in the very localised area of Tutshill and Sedbury. However it will not open up land for strategic development **-**

Welsh Government National Transport Finance Plan (23): This option is specifically included within the Welsh Government National Transport Finance Plan **-**

Funding (26, 27): The cross border nature of this option will require a number of funding conditions to be met and co-ordination of a range of bodies **-**

Political (28, 29): As this scheme is across borders, there may be a range of parties to engage for implementation **-**

Active Travel and safety (30, 31, 32, 33): This option will greatly improve the active travel route along the A48 through the provision of a bridge adjacent to the A48 road bridge. This will improve safety for pedestrians and cyclists **+**

Parking (34): This option will not improve or increase available parking at Chepstow station, but may create increased capacity in the town centre if local trips are undertaken by Active travel instead of the car **+**

Option 16: Active Travel Additions

A48 congestion (1, 2): This option is reliant on the implementation of one of the by-pass options to enable the A48 to be downgraded and improvements made to reallocate road space to pedestrians and cyclists. The bypass would by design reduce the traffic on the A48, which would therefore allow for the reallocation of space for active travel purposes, but this option alone would not be viable **+**

Rat-running (3): This option is only viable as a complementary option to the introduction of a new by-pass. The bypass would reduce rat running on the Old Wye Bridge, but this option alone would not **0**

Network resilience (4): As a standalone option, the reallocation of A48 road space to pedestrians and cyclists would not improve network resilience, but combined with the implementation of a new by-pass, then network resilience would be increased by the alternative route **+**

Lift-sharing (5): This option is unlikely to have an impact on reducing the number of vehicles parked in the laybys along the A466 **0**

Future development (6, 7, 10, 14, 24, 25): As a standalone option, the reallocation of A48 road space to pedestrians and cyclists would not improve network resilience, but combined with the implementation of a new by-pass, the pressure on the existing road network, particularly the A48 would be reduced. This option would also provide a viable alternative method of transport to access future development **+**

Air quality (8): Combined with the introduction of a new by-pass, this option will improve the air quality in the Hardwick Hill area. However, the new bypass may bring air quality issues to another area, which would need investigation at a future stage. **0**

Mineral deposits (9): This option will not affect any Mineral Resource Areas, but depending on which bypass option it is combined with then Mineral Resource Areas may be affected **-**

Severance/ connectivity/ access (11, 13, 21): This option will provide a viable alternative method of transport to a car, increasing the available routes for the communities to the east of the Wye River to access Chepstow **+**

Increase in A48 traffic (12): As an option on its own, active travel route along the A48 will not be viable or able accommodate additional flows following the removal of tolls from the Severn Bridge. However, combined with a bypass option, then more vehicles will be able to be accommodated, and the active travel route will provide an alternative method of transport for users.0

Rail links (15, 16): An improvement in Active Travel routes will have no impact on improving rail links to Bristol **0**

Bus services (17, 18, 19): An improvement in Active Travel routes will have no impact on improving bus service frequency or the number of bus services available **0**

Bus services/ school transport (20): Combined with a bypass option, there is the possibility that journey times for school buses will be reduced due to the transfer of traffic to the new bypass **+**

Development restrictions (22): This option will likely eliminate any potential need to restrict future development as congestion issues with the A48 will be removed or reduced through the combination of this option with a bypass **+ +**

Welsh Government National Transport Finance Plan (23): This document does specifically not include any proposals for a Chepstow Bypass or active travel upgrades on the A48 corridor**- -**

Funding (26, 27): Funding (26, 27): The cross border nature of this option will require a number of funding conditions to be met and a rage of funding bodies to be co-ordinated.

Political (28, 29): As this scheme is across borders, there will be a large number of bodies to co-ordinate for implementation.

Active Travel and safety (30, 31, 32, 33): This scheme, combined with a bypass option will improve active travel route safety along the A48 **++**

Parking (34): This option will not improve or increase available parking at Chepstow station, but may create increased capacity in the town centre if local trips are undertaken by Active travel instead of the car +

Option 17: Reducing the need to travel

A48 congestion (1, 2): The reduction in the need to travel through ensuring that employment and housing are linked for future developments will reduce congestion along the A48 by addressing removal of local trips. However, this is likely to be a long term option and may be challenging to implement for Chepstow which is already an established town **+**

Rat-running (3): Reducing the need to travel will reduce rat-running along the old Wye Bridge as congestion on the A48 will be eased. However, in the short term the levels of uptake and practicalities of implementing this option are currently unknown **0**

Network resilience (4): This option will not improve network resilience **0**

Lift-sharing (5): This option may help to reduce the number of vehicles parked in the laybys adjacent to the A466 as there will be less need to travel. However, without knowing the origins and destinations of vehicles and passengers who currently park in this location it is difficult to know how many people would be effected **0**

Future development (6, 7, 10, 14, 24, 25): Planning controls to link housing to employment and facilities and encourage flexible working through the design of the development will have a positive impact on future developments and reduce the pressure these developments place on the A48. It may not benefit creating economic connectivity between centres within the area. Services provided in settlements would need to be included in settlement expansion. **+**

Air quality (8): A reduction in the number of vehicles using the A48 will result in an improvement in the air quality of the AQMA and surrounding area **+**

Mineral deposits (9): This option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): This option will not improve the access and connectivity for communities located across the River Wye, but it may contributing to reducing their need to travel to services located on the other side **0**

Increase in A48 traffic (12): This option is unlikely to have a large impact on reducing congestion from commuters from Bristol locating in Chepstow and the surrounding areas **0**

Rail links (15, 16): This option will not improve rail links to Bristol **0**

Bus services (17, 18, 19): This option will not improve the connectivity and frequency of bus services **0**

Bus services/ school transport (20): Although this option will not directly impact on improving the delays to school transport, through reducing the need for communities to travel, this will reduce the congestion along the A48, which will ultimately improve journey times. However, the extent to which this is the case depends on a number of factors such as the policies in place and the success of them at reducing the need to travel. Also, undertaking a review of 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 **+**

Development restrictions (22): This option will place further restrictions on developments in order for them to link housing to employment and other services and will require them to provide adequate service provision to enable containment of settlements -

Welsh Government National Transport Finance Plan (23): This option is not within the Welsh Government National Transport Finance Plan **-**

Funding (26, 27): For this scheme to be effective, it will require buy-in from both English and Welsh authorities which will require a number of funding conditions to be met. It would also require private developer investment -

Political (28, 29): For this scheme to be effective, it will require buy-in from both English and Welsh authorities and coordination of a number of parties **-**

Active Travel and safety (30, 31, 32, 33): This option will not contribute to improving active travel **0**

Parking (34): This option will not provide additional parking within Chepstow **0**

Option 18: Containment of Settlements

A48 congestion (1, 2): The development of Tutshill and Sedbury to become self-contained settlements will reduce the need for local trips along the A48 to access services in Chepstow town centre. This will contribute to a reduction in traffic, although only for local trips as strategic journeys to Bristol or Cardiff will still need to use the A48 **0**

Rat-running (3): This option will reduce the need to travel across the A48 to local services so may reduce some rat-running for local trips **+**

Network resilience (4): This option will not improve network resilience **0**

Lift-sharing (5): This option is unlikely to reduce the number of vehicles parking in the laybys alongside the A466 **0**

Future development (6, 7, 10, 14, 24, 25): The development of Tutshill and Sedbury as self-contained centres would result in a reduction in the need for people located in new developments adjacent to these sites to travel across the A48 to Chepstow. However, it may not benefit creating economic connectivity between centres within the area. Services provided in settlements would need to be included in settlement expansion. **0**

Air quality (8): This option will improve the air quality along the A48 corridor through Chepstow to some extent, as it will reduce the number of local journeys as services will be located in Tutshill and Sedbury. However, longer distance journeys and some services will still need to be accessed in Chepstow so this option will not completely resolve the issues **0**

Mineral deposits (9): This option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): This option will not improve the access and connectivity for communities located across the River Wye, but it will contribute to reducing their need to travel to services located on the other side **0**

Increase in A48 traffic (12): This option is unlikely to have a large impact on reducing congestion from commuters from Bristol / Cardiff locating in Chepstow and the surrounding areas, particularly due to the timescales that it would take to improve service provision in these areas **0**

Rail links (15, 16): This option will not improve rail links to Bristol **0**

Bus services (17, 18, 19): This option will not improve the connectivity and frequency of bus services **0**

Bus services/ school transport (20): This option may improve journey times for buses and school transport by reducing congestion along the A48 from local trips **+**

Development restrictions (22): This option will place further restrictions on developments in order for them to link housing to employment and other services and will require them to provide adequate service provision to enable containment of settlements **-**

Welsh Government National Transport Finance Plan (23): This option is not specifically included within the Welsh Government National Transport Finance Plan **-**

Funding (26, 27): 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 -

Political (28, 29): Likely to be a contentious option with public opposition from residents who see Chepstow as their local service centre and local businesses in Chepstow who could lose trade **--**

Active Travel and safety (30, 31, 32, 33): This option will not improve active travel along the A48 **0**

Parking (34): This option could create parking capacity within Chepstow Town Centre from less uses accessing services. **+**

Option 19: Congestion Charge on A48

A48 congestion (1, 2): This option is to implement a congestion charge to try to reduce road usage. However many of the journeys on this route are out of necessity and with limited alternatives to private car a reduction in congestion may be as large as expected. Traffic survey data would be required to assess impact in detail at future stages. **0**

Rat-running (3): This option is likely to worsen the situation for rat-running as people will try and use other routes to avoid the congestion charge along the A48 **- -**

Network resilience (4): This option will not improve network resilience **0**

Lift-sharing (5): This option is unlikely to reduce the number of vehicles parking in the laybys alongside the A466, it may increase the number of vehicles who car share to avoid the congestion charge along the A48 **- -**

Future development (6, 7, 10, 14, 24, 25): This option is unlikely to reduce the number of vehicles using the A48 as there are limited alternatives. However it is likely to stop economic growth, by discouraging developments locating in the area -

Air quality (8): Although congestion charging may discourage a number of people from using the A48, this may not be a large scale due to a lack of transport alternatives for many journeys using the A48 to the private car **0**

Mineral deposits (9): This option will not affect any Mineral Resource Areas **0**

Severance/ connectivity/ access (11, 13, 21): This option will not improve the access and connectivity for communities located across the River Wye, it may actually increase severance as communities have to pay to access everyday services in Chepstow **--**

Increase in A48 traffic (12): Congestion charging on the A48 is unlikely to accommodate increased traffic flows due to toll removal on the Severn Bridge, as many local and strategic trips are likely to continue out of necessity and a lack of alternatives. Extra traffic generated by removal of tolls may not be as evident as a charge on the A48 may put of users form using the A48 corridor **0**

Rail links (15, 16): This option will not improve rail links to Bristol **0**

Bus services (17, 18, 19): This option will not improve the connectivity and frequency of bus services **0**

Bus services/ school transport (20): This option will not improve journey times for bus services and school transport **0**

Development restrictions (22): This option is unlikely to improve the situation on the A48 enough to create capacity for expansive further development in the area. If no further improvements are made to the A48 then this is likely to slow economic growth and a toll on the road would discourage inward investment **-**

Welsh Government National Transport Finance Plan (23): This option is not within the Welsh Government National Transport Finance Plan **-**

Funding (26, 27): For this scheme to be effective, it will require buy-in from both English and Welsh authorities which will require a number of funding conditions to be met. Revenue from the charge would need to cover initial set up and operating costs. -

Political (28, 29): For this scheme to be effective, it will require buy-in from both English and Welsh authorities and agreement from lots of parties. The scheme is likely to be contentious with both members and local residents, especially as the tolls on the Severn Bridge are being abolished **- - -**

Active Travel and safety (30, 31, 32, 33): This option will not improve active travel along the A48 **0**

Parking (34): This option may not provide additional parking capacity at Chepstow **0**

Appendix L
Review Group Comments

Chepstow Transport Study Review Group Meeting 22nd October 2018

Review Group Comments

Attending:

Monmouthshire County Council Transport: Roger Hoggins, Paul Keeble, Christian Schmidt

Other Monmouthshire County Council: Matthew Lewis Green Infrastructure and Countryside Manager, Joe Skidmore Communities and Partnership Development Lead, Hazel Clatworthy Sustainability Policy Officer, Jill Edge Senior Planning Policy Officer, Matthew Gatehouse Head of Policy and Governance

Other: Gwyn Smith (Sustrans), Alison Thomas (Welsh Government), Luisa Senft-Hayward (Gloucestershire County Council), Peter Williams (Forest of Dead District Council)

Monmouth Active Travel Group: Jane Lucas, Joe Walton, Peter Lloyd (attending for second review group scheme – Wye Active Travel Bridge)

Comment	Agreed Action
Conclusion of the report with regards to recommended short list of options, need to be worded so that can pick off to go for certain funding sources if available e.g. active travel etc (LSH)	Conclusion wording in report to be reviewed.
Sustrans – Gwyn Smith (Review group meeting) Sustrans do not support road building so do not support options (2) being taken forward as a short list of options. However, are in support of the other recommendations in the report. Sustrans feel the report may have been under ambitious in terms of the size of active travel schemes considered. Could active travel routes follow the proposed by pass option routes? Use of electric bikes may allow cycling much further a viable option? Links into interchanges such as Severn Tunnel Junction station – access to Bristol trains service by sustainable means etc. Email 13.11.2018 - At first glance it looks like the bypass is the obvious solution but I do think we need to think about what kind of country we want to live in the future. My only addition to the report would an option where we build a high quality direct walking and cycling route between Chepstow, Caldicot and Severn tunnel junction stations.	Active travel option (15) included in draft report to be reviewed to see if links into interchanges can be included. Report to emphasise that any of the bypass options would include active travel provision along route. Consideration to active travel links option (15) being expanded to include link to Chepstow, Calidcot and Severn tunnel junction stations
Could extra zones to the South East Wales model be added to cover the Chepstow area and A48 corridor (Christian Schmidt)	To be investigated as part of looking at the modelling options during WelTAG stage 2.
Could census data relating to journey to work for wards within a 5km radius of A48 / Chepstow be looked at to see how many local trips are being undertaken (LSH)	Data that is available at public level unlikely to provide any insight into split of local journeys. More detailed origin and destination

	data may be available via Local Authorities from ONS. However, may be advisable to wait until Stage 2 model is produced to give accurate output. Information collected as part of the Air quality origin and destination survey (2010) will be reviewed to see if applicable for reference in the WelTAG Stage 1 report in the strategic case section. (Data by Zone that is too large to show any local trips aggregation).
Could new technology and technical advances and the impact on future traffic flows e.g. intelligent roads, autonomous vehicles, electric cars and bikes, technology to work from home or from satellite offices etc. be reflected within the report and some options? (RH)	Strategic case to include reference to technology and technical advances and impact on future traffic flows. Option description for Option 17 to be updated to include reference to technology helping to reduce the need to travel.
Are there any aspects that are included within the air quality management plan that can be reflected in the options shortlisted – bolted on as additions to expand the options – into quick wins?	Qir quality management plan action plan to be referenced in the strategic case, along with statement that all options developed as part of the Chepstow transport study will support the action plan proposals.
Can the report highlight which of the 'quick wins' can be implemented without the need for the larger more strategic short listed options being taken forward (CS)	Conclusion of report to be updated to reflect this.
Can the report hint at the wider benefits e.g. health benefits of active travel etc. Detail of this would be pulled out when doing separate funding bids (LSH)	The Stage 1 report will make reference to these in general terms only. Will be part of the HEAT assessment at Stage 2
Important to reflect the regional perspective of what might be going on e.g. how other authorities / WG / HE responding to removal of tolls. This is to ensure that options recommended in this study tie into the wider picture (LSH)	HE and Welsh Government removal of the Severn Bridge tolls impact report to be included and referenced in the strategic case section of the report, now report is available for reference (as confirmed by Welsh Government 5th Nov 2019)
Plan of options to have train symbol plan included. No new station shown at Newhouse.	Options plan to be updated
Chepstow Bypass alignment already safeguarded (within Monmouthshire only) - LDP	Comment noted
Hazel Clatworthy (Comments by email 23.10.218)– (MCC Sustainability Policy Officer) Proposals should be assessed against Monmouthshire PSB's Wellbeing Plan.	Stage 2 to be reflective of other organisations WBOFGA goals.

There is a recognition in the Wellbeing Plan of the need to address rural transport, by looking at promoting active travel and sustainable transport and using technology to improve rural transport. However, there is nothing in the WBP about building new roads. Proposals need to be assessed against our own Corporate Plan. Plan references develop a range of options to improve rural transport and better public transport linked to opportunities throughout the Cardiff Capital Region, and enhance the quality of local highways services. Likewise, there is nothing about building new roads in the Corporate Plan. I think it is great that we had community members at the second part of the meeting, and it is a huge help to us to have that manpower to help with surveys, public engagement etc. I think it would bring benefits to all our WelTAG proposals to have that kind of community involvement each time if possible. I work with groups such as Transition Town groups and others, who I know are keen to have an input into transport proposals, and are often willing to give their time and help. These groups will be invaluable when developing proposals to the Stage 2 level, but I think thought should be given as to whether community groups such as these could be involved earlier on in the process. I think it would be worth considering whether all the right people from MCC are at the meetings. For example, as the Chepstow example was about the AQMA, would it have been useful to have Environmental Health there?	Reference to MCC goals will be included in the report for stage 1. Include in WBOFGA section that MCC plan supports active travel and addressing rural transport needs. Comment on corporate plan fit of options to be included in the Strategic Case policy fit section of the Stage 1 report. Comment relates to Monmouth Wye Bridge Active travel WelTAG Stage 1 review. For consideration as part of stakeholder engagement plans for Stage 2. For consideration for the next Review Group meeting.
Matthew Lewis (Comments by Email 6th Nov 2018): Table 2 long list of options – the assessment of option 1 as neutral on heritage is incorrect as this just reflects (as mentioned in the meeting) that you haven't included in the constraints the Cadw Register of Landscapes Parks and Gardens of Special Historic Interest in Wales in which Piercefield Park is given Grade I status (It is arguably one of the finest 18th century designed picturesque landscape in the UK) nor the impact on the setting of Chepstow castle / Cadw's identified significant views (see below) - the site also contains a number of linked scheduled ancient monuments reflecting this history. Given all of the woodland's designation as SSSI, the River's SAC status, the impact on the setting of the Grade 1 Chepstow Castle (including Cadw's identified significant views) and location in the Wye Valley AONB I would have thought a realistic	Constraints plan to be updated to include Cadw Register of Landscapes Parks and Gardens of Special Historic Interest in Wales (requested GIS files). Information relating to Piercefield park to be added into deliverability text for Option 1. Assessment of Option 1 in table 2.12 (WTS outcomes) will be changed to moderate negative for heritage. Assessment against impact on the local environment (Table 2.12 WTS

assessment of impacts on the local environment would be moderate to large negative, not slight, and biodiversity impact also potentially moderate to large	outcomes) to be changed to moderate negative for option 1. Impact on biodiversity for option 1 in Table 2.12 is already moderate negative. Townscape assessment in Table 3.2 to be changed to slight negative for option 1 and option 2
Similarly in table 2.13 I can't see how option 1 can be said to have a positive contribution to a resilient Wales (A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change) – in fact a similar comment relates to options 2,3 & 5	Option 1 has been scored as having a positive contribution to a resilient Wales as it could have a positive economic impact on resilience, through providing an alternative more robust highway network crossing of the River Wye (as currently limited trunk road crossings of Wye at this location). This is also the case for option 2. Option 3 and 5 will be updated to be a neutral impact as these options do not provide any extra network resilience in the form of a new Wye River Crossing.
6.7 Project Constraints – it would probably be useful to add Wales Coast Path to this list as this acts as a project constraint, specifically for option 2 (and as you have already identified Offa's Dyke Path National Trail and the footpaths at Park Redding/Warren Slade which form part of WCP)	Wales Coast Path added to section 6.7 as a project constraint.
Alison Thomas (Welsh Government) Email 7.11.2018 **Page 8 – Interpretation of the guidance.** The interpretation of the guidance is slightly misleading – please quote the guidance where relevant. During Stage One the strategic case will be almost fully developed as this sets out the need for change. The transport case will provide an initial assessment of the expected impacts of each of a long list of options for tackling the issue under consideration. The purpose of Stage One is not a 'high level appraisal with mainly qualitative data'. 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	Update report to reflect guidance statements are per suggested.

that are worth pursuing and to select a short list of options for more detailed consideration. The purpose of Stage Two is to undertake further investigation of the shortlisted options.	
Page 10 – the Strategic Case	
Problems/opportunities This section should include information on the issue that needs addressing supported by evidence. It should include a clear summary/bullet pointed list of the problems and opportunities. It would be useful to set these out in a table, with information on how they have been identified/the evidence base behind them (Detailed information for example on bus services and frequencies and rail services should go in an appendix/impacts assessment report - it's not recommended that this type of information is included in the main report.	List of problems is is included in the IAR worksheet 1 appendix C – move to include in the strategic case part of the main report. We will consider moving transport information to an appendix of the main report – they are included only to try and evidence specific problems in making the case for an intervention e.g. poor connections for rail services from Lydney / Chepstow at STJ and poor regional bus services. .
Policy background and other relevant documents The section should include information on the policy background and other relevant documents (the relevance to the study/issue should be summarised, with more detailed policy background/information included in an Annex). Relevant documents include Prosperity for All – the National Strategy, the Economic Action Plan, the emerging National Development Framework, the emerging Wales Transport Strategy, Cardiff Capital Region City Deal, the National Transport Finance Plan and Planning Policy Wales, Local Development Plans and Local Transport Plans. I would suggest that the assessment of the options against the objectives is put in an annex with comment made about the fit in the text	Review and consider changing the format to put more detailed assessment in an appendix and add in the policy documents that are missing. We have included the current published version of the WTS – may not have access to 'emerging' documents if not published.
Objectives This section should clearly set out the objectives that have been identified (we are not referring to these as 'transport planning' objectives in the guidance), which should have been developed through stakeholder collaboration and reflect: - -the well-being goals, the national objectives set by the Welsh Government such as those included in the Well-being of Future Generations Act	Remove the term TPO's and refer to them as scheme objectives. Objectives were developed via the stakeholder workshop and with MCC /GCC. The IAR (worksheet 3 appendix C) shows how the TPOS relate to the problems identified, this will be moved to the main report.

objectives for the transport system as set out in the Wales Transport Strategy more focussed objectives, e.g. local well-being objectives, or objectives developed for the particular issue under consideration. The objectives that have been developed need to be amended/checked to ensure that they address these points, and in addition, reflect the problems identified **Options** For each option listed on page 40/41, a summary table should be provided which sets out: - A description of the option - A description of how it tackles the problem - An assessment of how the option addresses the objectives set - Key option risks - Any adverse impacts - Constraints - Dependencies **Page 43 - the Transport Case** The purpose of the Transport Case is to present the expected impacts – economic, environmental, social and cultural, how the project will contribute to the well-being goals and whether it is likely to provide value for money. The transport case is an evidence based assessment of what the impacts will be; the scale of those impacts; where and when they will occur; and who / what will experience them. For each option a table should be provided which details the impacts of the option (a largely qualitative assessment) with a score given to present the scale of the impact. – From the assessments provided, it should be possible to suggest a short list of options to be taken forward to Stage Two based on their ability to solve the problem, their fit with local, regional and/ or national objectives, their positive impacts across all aspects of well-being, their deliverability and robustness under uncertainty and potential to drive long lasting change. (A separate assessment of options against economy, environmental and social shouldn't be included).	An appraisal of the fit of the scheme objectives with the well-being goals, the WTS objectives and the MCC wellbeing objectives will be undertaken. All of the information listed is include for each option throughout the report (and IAR), but in varying different tables. Summary Table produced which shows this information in one location. – include in summary section of strategic case chapter as per examples provided. Consider inclusion of where impacts will occur and when and who will experience them in assessment – as per example reports provided by AT.
Lusia Senft-Hayward (Gloucestershire Council) email 12th Nov 2018	

• General: o Could "South Gloucestershire" please be replaced with southwest Gloucestershire? – as not to confuse it with South Gloucestershire County.	To be changed in text of report
o At the workshop I suggested that 2011 census data could be used to estimate the potential trip transfer from car to w&c across the existing A48 bridge	Data that is available at public level unlikely to provide any insight into split of local journeys. More detailed origin and destination data may be available via Local Authorities from ONS. However, may be advisable to wait until Stage 2 model is produced to give accurate output. Information collected as part of the Air quality origin and destination survey (2010) will be reviewed to see if applicable for reference in the WelTAG Stage 1 report in the strategic case section (post meeting note – size of zones to large to see local trip data).
• **Existing and Proposed Future Development** (last paragraph, p.18): o "…. Development within ~~South~~ southwest Gloucestershire ~~(including Tutshill and Sedbury areas)~~ and within Chepstow and…."	To be updated in text of report
• **Table 2.11, description of Option1:** o "(…) ~~From this roundabout, a bypass will pass through the southern edge of Chepstow Racecourse land and go east through dense woodland or skirt the edge of Chepstow Comprehensive School grounds.~~ (…) The bypass alignment will then pass ~~around the~~ north~~ern edge~~ of Tutsill, (…)"	To be updated in text of report
• **Table 2.11, description of Option4:** o "(…) ~~The alignment will pass through the built up area o Beachley and~~ It will at some point merge with (…)"	To be update in text of report
• **Table 6.1, comments on Option 14:** "Potential to expand park and ride facilities at Lydney railway station ~~(space behind existing car park)~~ (…)"	To be updated in text of report
Comment added that 'all of the options considered as part of the workshop are at a conceptual stage only and no detailed drawings or route details have been produced at this stage of the assessment' (LSH)	Comment added to report.

Email Alison Thomas (WG) 21.1.2018 feedback from Future Generations Commission on WelTAGs undertaken in general: For Stage 1 the Guidance (page 8) states: The key feature of this step is the application of the five ways of working to the consideration of possible solutions, to ensure the needs of future generations are considered, and understand how well they help public bodies to meet the well-being objectives and maximise their contribution to each of the seven goals. As a result we would expect to see evidence of how you/the consultants have thought about, and ideally applied, the 5 Ways of Working when considering potential solutions to current issues – so these are thinking about long-term challenges / trends / opportunities, preventing problems from occurring or getting worse, integration, collaboration and involvement. For long-term, page 19 of the Guidance (Strategic case) states: It is critical that long-term trends, impacts and consequences are considered so that decisions being made today have a positive impact on future generations. We would need to see evidence of how information on long-term or future trends, or the impacts of these on potential solutions, have been considered eg air quality, climate change, changes in working / commuting patterns, demographic trends etc. Apologies if you've already seen this, but our recent Transport report might give you some ideas around considering long-term and integrated solutions: https://futuregenerations.wales/resources_posts/transport-fit-for-future-generations-report/ In terms of integration, we'd also want to see evidence of how you've considered how the potential solutions could support your well-being objectives eg Promoting regeneration, economic growth and employment; Promoting sustainable development and protecting our environment. For the scheme objectives and also in terms of developing options – we would like to see how these have been developed/informed by applying all 5 Ways of working, whilst also considering the well-being objectives and goals. It's helpful to see the objectives mapped against the 7 WB goals – we would welcome some further detail to explain the scoring to ensure the goals have been considered	Five ways of working in developing interventions have been considered in the strategic case as well as assessment of options against wellbeing act objectives. This will be reviewed to ensure reflects comments from commission.

correctly and also some furtherbinterpretation on what this means in terms of potential solutions. The Weltag Guidance encourages people to use our FG Framework during the weltag process – it includes prompts that will help people to consider not just the impacts but the opportunities to improve social, economic, cultural & environmental well-being as is legally required through the WFG Act. The f/work was published alongside weltag and is also available on our website (https://futuregenerations.wales/documents/future-generations-framework). I'd be interested to know whether the consultants have used this f/work. Again, feedback I've provided to other weltag reports is that we would like to see much clearer evidence of how the WoW, Goals and well-being objectives have been applied throughout the WelTAG documents so that we can be satisfied that the Guidance has been adhered to and the Well-being of Future Generations Act has been understood and applied properly.	

Review Group broadly agreed with the recommendations made and the direction of the study with the caveat that future further consideration maybe needed into some of the detail included in the study. The exception was Sustrans who opposed inclusion of option 2 (new road building option) as a short listed option.

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