

South Wales Trunk Road Agent

Managing and Improving
Motorways and Trunk Roads
through South Wales



Asiant Cefnffyrdd De Cymru

Rheoli a Gwella'r Traffyrdd
a'r Cefnffyrdd yn Ne
Cymru

9025 - M4 J23a Magor Interchange Temporary Signals

25/SW/CSI/005

Stage 3 Road Safety Audit Brief



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**9025 - M4 J23a Magor Interchange Temporary
Signals - 25/SW/CSI/005**

Stage 3 Road Safety Audit Brief



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1 General Details

1.1 Scheme Name

M4 J23a Magor Interchange Temporary Signals

1.2 Type of Scheme

Installation of temporary traffic signals for an estimated period of 12 months, subject to review.

1.3 Road Safety Audit Stage

Stage	1	2	3	4	Interim
(tick as appropriate)			✓		

1.4 Overseeing Organisation details

[Redacted]
(Area Manager South
East Wales)

Network Management Division
Transport and Digital Connectivity

Economy, Energy & Transport
Welsh Government

1.5 Design Organisation details

WSP
1 Capital Quarter
Tyndall Street
Cardiff
CF10 4BZ

1.6 Police contact details

The Police contact details are:

Gwent
Chief Constable
Gwent Police
Police Headquarters
Croesyceiliog
Torfaen
NP44 2XJ





1.7 Maintaining Agent



South Wales Trunk Road Agent,
Y Ceiau / The Quays,
Brunel Way,
Briton Ferry, SA11 2GG

1.8 Road Safety Audit team membership

The proposed RSA (RSA) team membership is as follows:



(Audit Team Leader)

MCIHT, MSoRSA
WSP (Liveable Places)
Associate



(Audit Team Member)

MCIHT
WSP (Liveable Places)
Assistant Transport Planner

A Certificate of Competency in Road Safety Auditing is held by



1.9 Terms of Reference

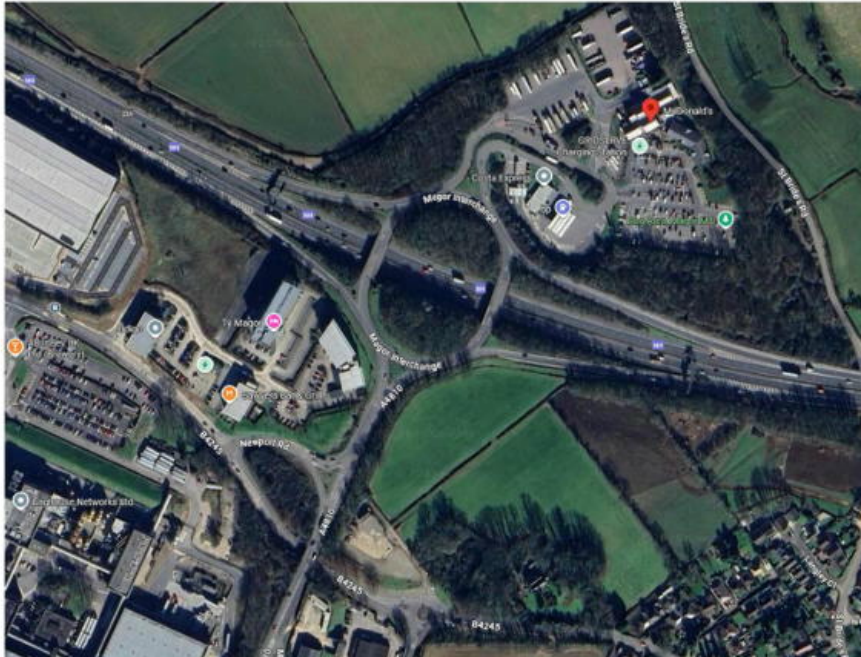
The Stage 3 RSA is to be undertaken fully in accordance with the DMRB Standard GG119 as well as the contents of this RSA Brief.



2 Scheme Description

2.1 General

M4 Junction 23A, Magor in Monmouthshire. OS Grid Ref. 341948, 187832.



Scheme Details

Temporary traffic signals have been installed on a trial basis, to manage additional HGV u-turning movements following the introduction of a weight restriction on the M48 Severn Bridge. Temporary signal poles are supported on temporary above-ground foundations and linked with cabling that is run overhead on poles. A new permanent feeder pillar was installed by SWTRA prior to the works and provides a mains electrical supply to the temporary signals controller and equipment.

Temporary Traffic Orders are in place to reduce the speed limit to 40mph along both eastbound and westbound exit slip roads at the junction, together with the circulatory carriageway of the interchange and the approach section of the A4810. Temporary speed limit signing including terminals and repeaters has been installed throughout.

Road markings have been laid at locations within the extents of the site to promote lane discipline and for the stop lines at the temporary signals.

Vegetation clearance has been carried out to accommodate poles and their foundations and also to ensure forward visibility for approaching vehicles is achieved.



It is likely that the temporary traffic signals installation shall be in place for a minimum period of 12 months, subject to review. After which they may be replaced with a permanent traffic signals installation, although this is also subject to review. Any future permanent works, other than removal of existing temporary scheme and reinstatement to the original junction arrangements and speed limits will be subject to a new Road Safety Audit, so shall not be considered under this current RSA.

Three proposed options were put forward for the Stage 1/2 Road Safety Audit, but the following option was selected and installed:

- Option 2 - Signalisation of M4 westbound exit slip road and the A4810 junctions with the roundabout circulatory carriageway

Works to install the current temporary traffic signals and signing arrangements were completed on 3rd March 2026.

Scheme background

The following is taken from the client's original project scope: *Undertake design of temporary traffic signals at M4 J23a to address potential congestion issues that may arise as a result of weight restriction and diversion route imposed on the M48 old Severn Bridge. All vehicles above 7.5 tonne will have to use J23 as diversion route if they wish to travel in the direction to and from Chepstow and surrounding areas.*

2.2 Design Standards Applied

The scheme has been designed in accordance with the Design Manual for Roads and Bridges (DMRB), and any Interim Advice Notes (IAN), current at the time the detailed/preliminary design commenced in August 2025.

2.3 Speed Limits

The permanent speed limit for the M4, slip roads and circulatory carriageway at Magor Interchange, and the immediate approach on the A4810 is national speed limit. The A4801 south of the existing speed limit terminal signs is 40mph. A temporary 40mph speed limit will be implemented throughout the site for the duration of installation, maintenance (operation) and removal of the temporary traffic signals.

2.4 Existing Traffic Flows

The available Annual Daily Traffic (AADT) flow for the route is shown in table 1 overleaf:



SITE	2023		2024		2025	
	AADF	%HGV	AADF	%HGV	AADF	%HGV
A4810 N/B	5621	16.26	5669	15.91	5724	15.67
A4810 S/B	4944	17.17	4985	16.79	5032	16.53
M4 mainline W/B	41239	8.95	49375	8.16	50260	8.20
M4 mainline E/B	45206	8.89	45847	9.65	46674	9.70

Table 1; Available AADF

2.5 Pedestrian, cyclist and equestrian desire lines

The M4 Slip Roads are subject to Motorway Regulations, therefore Pedestrian, etc are prohibited. There are no formal off-highway pedestrian, etc. facilities within the extents of the site.

It has been observed that a Public Right of Way is signposted across fields from a point near the junction of the westbound exit slip road and the circulatory carriageway of the roundabout.

2.6 Environmental Constraints

No significant Environmental constraints were identified during the design.



3 **Locality**

3.1 **General Description**

M4 J23a Magor Interchange is a grade separated junction from the M4, providing direct access to a Motorway service station to the north, and the A4810 Steelworks access road to the south. Immediately southwest of the site are two business areas. One containing a hotel, food outlets and a business park, the other comprising of a brewery. These are accessed via the A4810 and B4245. The B4245 junction with the A4810 for traffic travelling towards Magor Interchange is signal controlled.

The village of Magor, Monmouthshire is located southeast of the interchange.

The A4810 provides access to various industrial areas, warehouses, distribution depots, former steelworks and other areas to the east of Newport. It is also used as an unofficial (or official when signed) diversion route for the M4, linking the Newport Southern Distributor Road onto M4 junction 28 west of Newport. The A4810 is also signed as the recommended route to Newport Docks for westbound traffic travelling from the east along the M4 and M48.

3.2 **Factors Affecting Safety**

We are not aware of any factors that affect safety however it should be noted that this junction experiences increases in traffic volumes undertaking "U turning" vehicle movements around the roundabout at times when the M48 Severn Bridge is closed for maintenance or high winds.



4 Analysis

4.1 Collision data analysis

Person Injury collision data for the period from 1st October 2020 to 30th September 2025 has been reviewed/examined.

A summary of the collision data is provided in Table 2 below.

COLLISIONS	2020	2021	2022	2023	2024	2025	Full Period
Slight	0	2	0	3	1	2	8
Serious	0	0	0	0	0	1	1
Fatal	0	0	0	0	0	0	0
Total	0	2	0	3	1	3	9

Table 2 Summary of Collision Data

A summary of the casualty data is provided in Table 3 below

CASUALTIES	2020	2021	2022	2023	2024	2025	Full Period
Slight	0	3	0	6	1	3	13
Serious	0	0	0	0	0	1	1
Fatal	0	0	0	0	0	0	0
Total	0	3	0	6	1	4	14

Table 3 Summary of Casualty Data

A location plan of the recorded collisions is contained in Appendix B.

4.2 Departures from Standard and Relaxations

No departures or relaxations were required for the scheme.

4.3 Previous Road Safety Audits

A combined Stage 1/2 Road Safety Audit Designer's Response was completed in Date (doc ref UK0029359.3987/RSA1&2/1) and is attached in Appendix C



4.4 Strategic decisions

No strategic decisions.

4.5 List of included documents and drawings

DOCUMENT TITLE	REFERENCE	DATE
Combined Stage 1&2 Road Safety Audit Response Report	UK0029359.3987/RSA1&2/1	04/11/2025

DRAWING NUMBER	DRAWING TITLE
0029359.3987-WSP-HMK-M4-DR- CH-1201 REV Z01	TRAFFIC SIGNS AND ROAD MARKINGS (AS-BUILT)
M4J23A-SRL-HSL-NH-DR-EC- 001 REV 1	URBAN64 LAYOUT-GENERAL ARRANGEMENT

Table 4; List of Design Drawings and Documents (Refer to Appendices A and C)



5 Overseeing Organisation Approval

This must be signed and returned to the RSA team. (GG 119 requirement 4.3)

In accordance with GG 119 road safety audit I have examined the details of the highways scheme contained in this document.

I approve the RSA brief, the audit team and instruct the audit to take place on behalf of the overseeing organisation.

Name: [REDACTED] Role: ...Area Manager.....

Signed: [REDACTED] Organisation: ...Welsh Government....

Date: 15/06/2026.....



6 Checklist

Tick all that are included and provide reasons those that are not included

		Reason if not included
Site location plan	✓	
Scale layout plan	✓	
Traffic signal staging	✓	
Construction / typical details	x	None provided by the contractor
Design standards used	✓	
Design speeds / speed limits	✓	
Traffic counts	✓	
Departures and relaxations from standards	✓	
Adjacent land uses	✓	
Walking, cycling and horse riding assessment and reviews (HD42)	✓	
Pedestrian, cyclist and equestrian desire lines and volumes	✓	
Other factors that may impact on road safety	✓	
Road traffic collision plot	✓	
Collision data analysis	✓	
Collision data	✓	
Previous RSA reports	x	Just Stage 1/2 RSA Response Report required
Previous RSA response reports and evidence of agreed actions	✓	

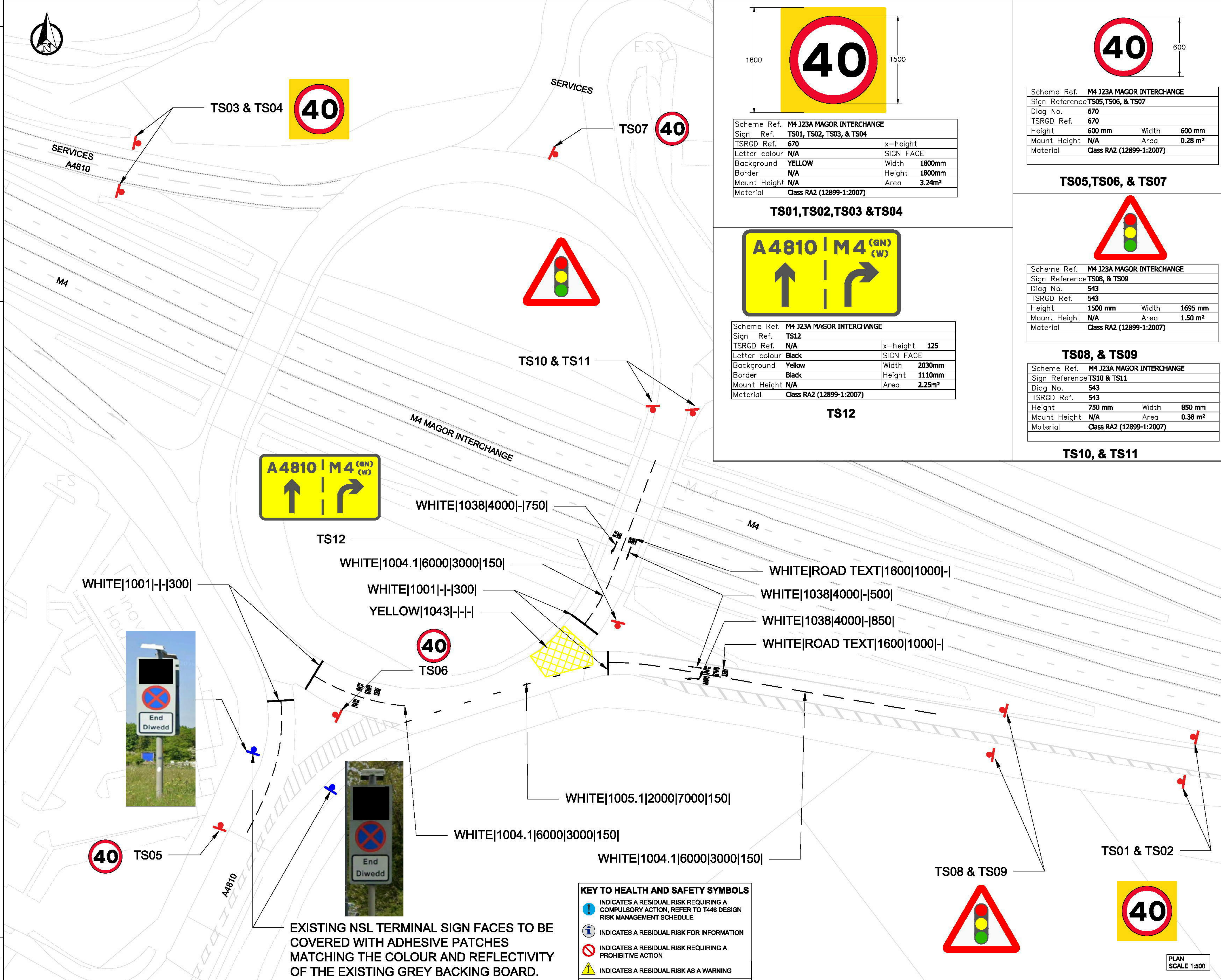


Appendix A

Scheme Drawings



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Scheme Ref. M4 J23A MAGOR INTERCHANGE	
Sign Ref. TS01, TS02, TS03, & TS04	
TSRGD Ref. 670	x-height
Letter colour N/A	SIGN FACE
Background YELLOW	Width 1800mm
Border N/A	Height 1800mm
Mount Height N/A	Area 3.24m ²
Material	Class RA2 (12899-1:2007)

TS01,TS02,TS03 &TS04

Scheme Ref. M4 J23A MAGOR INTERCHANGE	
Sign Ref. TS12	
TSRGD Ref. N/A	x-height 125
Letter colour Black	SIGN FACE
Background Yellow	Width 2030mm
Border Black	Height 1110mm
Mount Height N/A	Area 2.25m ²
Material	Class RA2 (12899-1:2007)

TS12

Scheme Ref. M4 J23A MAGOR INTERCHANGE	
Sign Reference TS05,TS06, & TS07	
Diag No. 670	
TSRGD Ref. 670	
Height 600 mm	Width 600 mm
Mount Height N/A	Area 0.28 m ²
Material	Class RA2 (12899-1:2007)

TS05,TS06, & TS07

Scheme Ref. M4 J23A MAGOR INTERCHANGE	
Sign Reference TS08, & TS09	
Diag No. 543	
TSRGD Ref. 543	
Height 1500 mm	Width 1695 mm
Mount Height N/A	Area 1.50 m ²
Material	Class RA2 (12899-1:2007)

TS08, & TS09

Scheme Ref. M4 J23A MAGOR INTERCHANGE	
Sign Reference TS10 & TS11	
Diag No. 543	
TSRGD Ref. 543	
Height 750 mm	Width 850 mm
Mount Height N/A	Area 0.38 m ²
Material	Class RA2 (12899-1:2007)

TS10, & TS11

- NOTES
- DO NOT SCALE FROM THIS DRAWING.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS AND DOCUMENTS IN THE DESIGN PACKAGE.
 - TEMPORARY TRAFFIC SIGNS SHALL BE INSTALLED ON "A" FRAMES, LOCATED BEHIND EXISTING SAFETY BARRIER WHERE POSSIBLE AND SECURED TO EXISTING STREET FURNITURE (NOT SAFETY BARRIER).
 - ALL TRAFFIC SIGNS AND ROAD MARKINGS TO BE IN ACCORDANCE WITH THE TRAFFIC SIGNS REGULATIONS AND DIRECTIONS 2016 (TSRGD) AND SUBSEQUENT AMENDMENTS.
 - ALL NEW ROAD MARKINGS TO TIE IN TO EXISTING MARKINGS AT EXTREMITIES.
 - EVERY CARE HAS BEEN TAKEN TO DESIGN OUT THE RISKS AS FEASIBLE. FOR RESIDUAL RISKS, PLEASE REFER TO THE DESIGNERS RISK REGISTER (T446) IN APPENDIX A OF THE PCI.
 - AS REQUESTED BY SWTRA, THIS AS-BUILT DRAWING HAS BEEN PREPARED BASED ON "DRIVE THROUGH" VIDEO FOOTAGE RECORDED 26/03/2026 AND 02/08/2026. OBVIOUS CHANGES TO THE CONSTRUCTION DRAWING INCLUDES SLIGHT REPOSITIONING OF TS10 AND TS11, AND RELOCATION OF TS12. NO INFORMATION HAS BEEN PROVIDED BY THE CONTRACTOR FOR AMENDMENT TO THE ORIGINAL PROPOSED LOCATIONS.

- KEY:
- PROPOSED ROAD MARKING
 - - - EXISTING ROAD MARKING TO BE RETAINED
 - PROPOSED TEMPORARY TRAFFIC SIGN (SEE NOTE 3)
 - EXISTING SIGN TO BE MODIFIED
- xx|xx|xx|xx|xx COLOR|DIAG NO.|LENGTH|GAP|WIDTH

Llywodraeth Cymru
Welsh Government

Z01	AS BUILT	AJ			
Rev	Details	Dr	Ch	Ap	Date

Drawing Status

AB - AS BUILT

Client

wsp

1 Capital Quarter, Tyndall St, Cardiff, CF10 4BZ, UK
T+ 44 (0) 292 076 9200
wsp.com

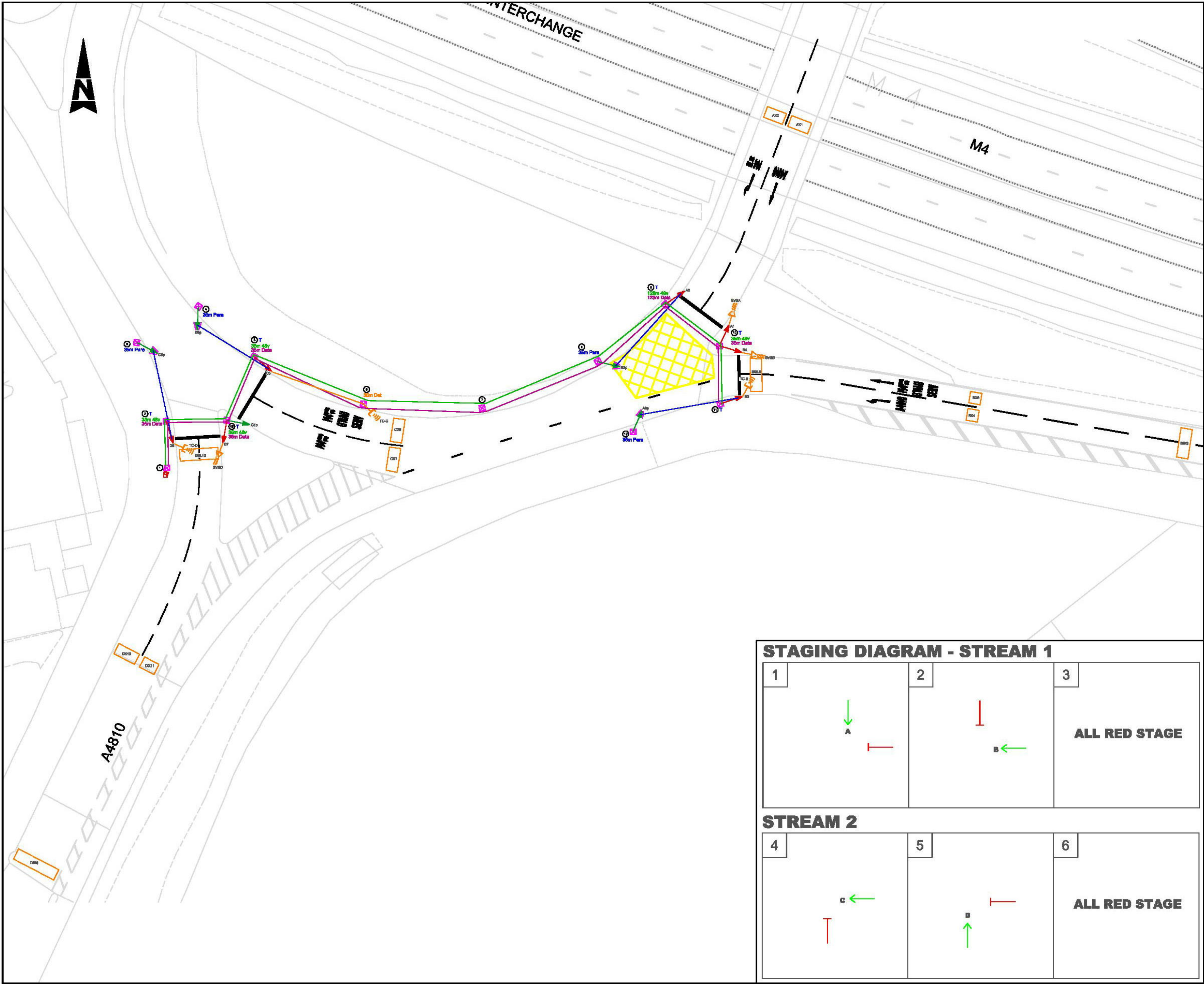
Project

M4 J23A MAGOR INTERCHANGE
TRAFFIC SIGNS & ROAD MARKING
SHEET 1 OF 1

File No. UK0029359-3987	Financial Code No. 25/SW/CSW005	
Drawn AG	Created TP	Approved AJ
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025
Scale	AS SHOWN	
Drawing No. 0029359.3987-WSP-HMK-M4-DR-CH-1201	Z01	

- KEY TO HEALTH AND SAFETY SYMBOLS
- INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION, REFER TO T446 DESIGN RISK MANAGEMENT SCHEDULE
 - INDICATES A RESIDUAL RISK FOR INFORMATION
 - INDICATES A RESIDUAL RISK REQUIRING A PROHIBITIVE ACTION
 - INDICATES A RESIDUAL RISK AS A WARNING

EXISTING NSL TERMINAL SIGN FACES TO BE COVERED WITH ADHESIVE PATCHES MATCHING THE COLOUR AND REFLECTIVITY OF THE EXISTING GREY BACKING BOARD.



NOTES:

1. 1.2m walkway to be maintained.

2. MOVA inputs to be setup as follows:

SVSA - Pole 10, Sig A1 - AX1(1), AX2(2).

SVSB - Pole 10, Sig B4 - BIN3(1), BX4(2), BX5(3).

TC-B - Pole 11 - BSL6(1).

TC-C - Pole 6 - CX7(1), CX8(2).

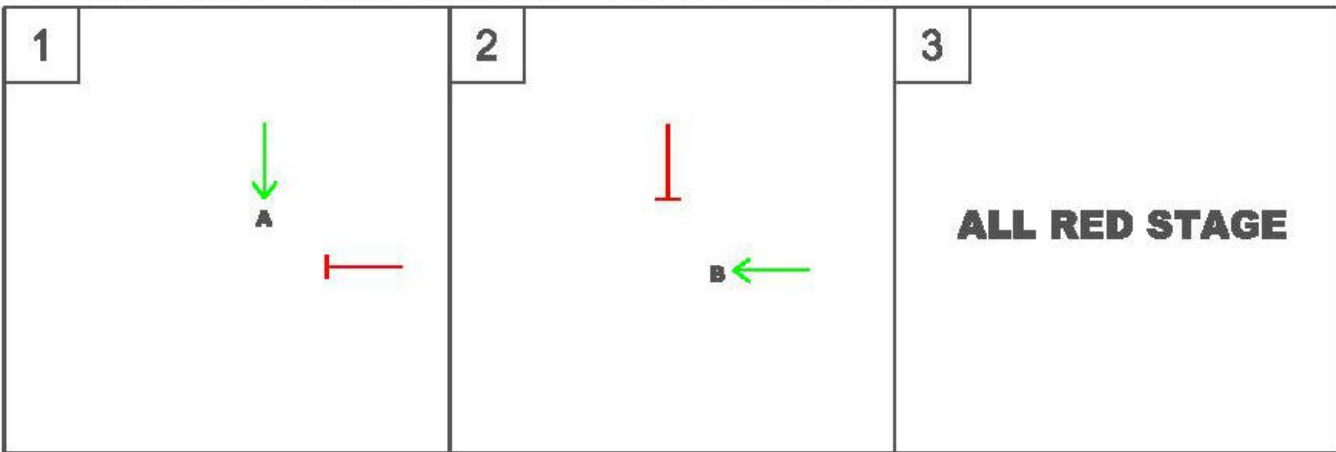
SVSD - Pole 13, Sig D7 - DIN9(1), DX10(2), DX11(3).

TC-D - Pole 2, DSL12(1).

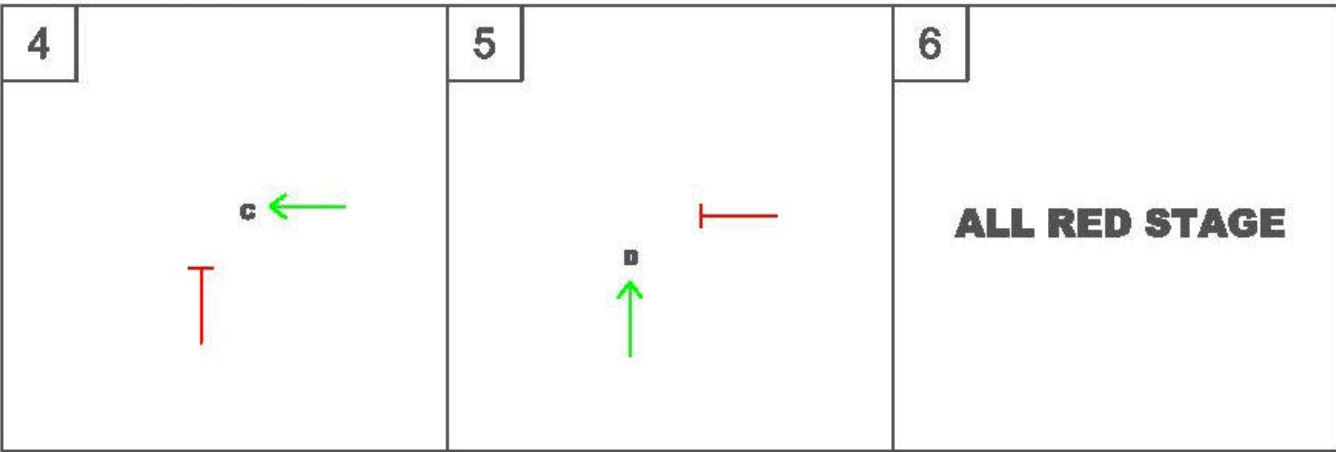
IN detector zones on entry to be 100m from stop line position. X detector zones to be 40m from stop line position on entry or 30m on circulatory. SL detector zones to be 2m from stop line position. All zones to be adjusted as necessary.

- KEY:
- | | | | |
|--|---------------------------------|--|---------------------------------|
| | Traffic Signal Controller | | Signal Hoods (Top/Full) |
| | Intelligent Traffic Signal Head | | Signal Hoods (Left) |
| | Parallel Signal Head | | Signal Hoods (Right) |
| | Pedestrian Signal Head | | Micro-wave Vehicle Detector |
| | Low-level Cycle Signal Head | | TrafficCam Detector |
| | U64 Block 800mm² | | SVS Radar Detector |
| | U64 Block 800mm² adjustable | | Detector Zone |
| | U64 Block 1000mm² | | Existing Traffic Signal Pole |
| | Data Cable | | Existing Traffic Sig Controller |
| | Parallel Cable | | Existing Electrical P/Wire |
| | 48v Cable | | Signal Bagged (not in use) |
| | 12v Cable | | Temporary Stop Line |
| | Transformer | | Temporary Pedestrian studs |
| | Push Button unit | | TM Barriers |
| | Side mount signal head | | TM Cones |
| | Horizontal Louvre | | Build Area |
| | Vertical Louvre | | Pole/Block number |

STAGING DIAGRAM - STREAM 1



STREAM 2



SRL
traffic systems
urban64 Division

SRL Traffic Systems Limited
The Light House, Unit 15, Road 5
Wineford Industrial Estate
Wineford, Cheshire
CW7 3SG
Tel: 01608 738896
www.srl.co.uk

URBAN64 Intelligent Semi-permanent systems		Title M4 J23a MAJOR INTERCHANGE NEWPORT URBAN64 LAYOUT - GENERAL ARRANGEMENT	
Sheet Size A2	Original Scale NOT TO SCALE	Designed/Drawn CW	Checked PT
Status ISSUE	Drawing Number M4J23A - SRL - HSL - NH - DR - EC - 001	Date 19/02/28	Date 24/02/28
Rev 1		Date 24/02/28	



Appendix B

Personal Injury Collision Location Plan



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Appendix C

Stage 1/2 RSA Response Report



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South Wales Trunk Road Agent

Managing and Improving
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9025 - M4 J23a Magor Interchange Temporary Signals Combined Stage 1 & 2 Road Safety Audit Response Report



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25/SW/CSI/005
9025 - M4 J23a Magor Interchange Temporary
Signals
Combined Stage 1 & 2 Road Safety Audit
Response Report



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1 Introduction

This Road Safety Audit Response Report relates to the combined Stage 1 & 2 Road Safety Audit Report UK0029359.3987-Road Safety Audit 1-2 titled 9025-M4 J23a Magor Interchange Temporary Signals Scheme Combined Stage 1 & 2 Road Safety Audit dated 13/10/2025.

1.1 Scheme Summary

As a result of weight restriction and diversion route to be imposed on the M48 old Severn Bridge, all vehicles above 7.5 tonne will have to use J23a Magor Interchange as a diversion route if they wish to travel in the direction to and from Chepstow and surrounding areas.

The scheme proposed works include the installation of temporary traffic signals on M4 J23a Magor Interchange for an estimated period of 18 months as a temporary traffic control solution for managing traffic at the interchange and any joining roads, whilst National Highways undertake repair/remedial works on the M48 Old Severn Bridge.

There are currently three options being considered for this temporary solution. This Road Safety Audit assesses all three options, which are:

- Option 1 – Signalisation of M4 westbound exit slip road junction with the roundabout circulatory carriageway;
- Option 2 - Signalisation of M4 westbound exit slip road and the A4810 junctions with the roundabout circulatory carriageway; and
- Option 3 - Signalisation of A4810 junction with the roundabout circulatory carriageway
- The permanent speed limit for the M4, slip roads and circulatory carriageway at Magor Interchange and the immediate approach on the A4810 is national speed limit. The A4810 south of the existing speed limit terminal signs is subject to a 40mph. A temporary 40mph speed limit will be implemented throughout the site for the duration of installation, maintenance (operation) and removal of the temporary traffic signals.

1.2 Design Organisation Representative



Principal Engineer, WSP



2 Key Personnel

2.1 Overseeing Organisation



Welsh Government
SWTRA

2.2 Road Safety Audit Team



Audit Team Leader, WSP
Audit Team Member, WSP

2.3 Design Organisation

WSP
1 Capital Quarter
Tyndall Street
Cardiff
CF10 4BZ



3 **Organisation Statements**

3.1 **Design Organisation statement**

On behalf of the design organisation, I certify that:

- 1) the RSA actions identified in repose to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.

Name	
Signed	
Position	Principal Engineer
Organisation	WSP
Date	03 November 2025

3.2 **Overseeing Organisation statement**

On behalf of the Overseeing Organisation, I certify that:

- 1) the RSA actions identified in repose to the road safety audit problems in this road safety audit have been discussed and agreed with the design organisation; and
- 2) the agreed RSA actions will be progressed,

Name	
Signed	
Position	South East Wales Area Manager
Organisation	Welsh Government
Date	14/11/2025



4 Items Raised at this Road Safety Audit

This section covers the issues raised as part of this Combined Stage 1 & 2 Road Safety Audit.

4.1 Problem (General)

Location:	Options 1, 2 and 3	
Summary: Temporary traffic signal cables a collision hazard.		Recommendation
The temporary signals will result in large cables being provided as part of these works, with some of these cables being overhead. In the worst-case sagging cables could be hit by larger high sided vehicles, increasing the risk of collisions.		It is recommended that any overhead cables provided are in excess of high sided vehicles height and are adequately secured.
Design Organisation Response: The height of the above ground cables will be a minimum of 6.5 metres above ground level as specified on their datasheets.		
Overseeing Organisation Response: Agree with Design organisation response.		
Agreed Response: Overhead cables to be a minimum of 6.5m above ground at all times.		



4.2 Problem (Traffic signs, Road markings and Lighting)

Location:	Options 1, 2 and 3	
Summary: Temporary traffic signals restricting forward visibility towards traffic signs and restricted forward visibility to traffic signals		Recommendation
The temporary signals may restrict forward visibility to several existing signs, namely End of Motorway signs and No Entry signs this may lead to poor compliance to the restrictions increasing the risk of road users undertaking inappropriate manoeuvres, sudden lane changing increasing the risk of side swipe collisions. Also, some existing direction signs may restrict forward visibility towards traffic signal heads leading to harsh braking, rear end shunt collisions on the approach to the temporary signals.		It is recommended that the proposed traffic signals do not obscure visibility to other traffic signs and there is appropriate forward visibility towards temporary traffic signals.
Design Organisation Response: Agreed, reference to the signs that may need relocating are identified on the drawings.		
Overseeing Organisation Response: Agree with Design organisation response.		
Agreed Response: No action.		



4.3 Problem (General)

Location:	Options 1 and 2	
Summary: Lack of carriageway width for larger vehicles.		Recommendation
On the westbound off slip road approach to the roundabout the carriageway width narrows to 7m in close proximity to the stop line. With the increase in heavy vehicle movements on this approach, if two larger vehicles approach the signals side by side, they may be a potential for side impact collisions or collisions with adjacent street furniture including temporary signals. There is also visible evidence of adjacent verges being overrun by traffic indicating that these manoeuvres take place.		It is recommended that swept path analysis is undertaken, and the approach is modified if necessary to accommodate larger vehicles.
Design Organisation Response: The existing situation operates with a two-lane entry to the roundabout. PIC data doesn't indicate any vehicle conflict issues at this location. The number of additional HGV's is relatively low.		
Overseeing Organisation Response: Agree with Design organisation response.		
Agreed Response: TRA and Design organisation to monitor collisions while temporary signals are present.		



4.4 Problem (Traffic signs, Road markings and Lighting)

Location:	Options 1 and 2	
Summary:	Lack of information for road users.	Recommendation
On the westbound off slip road approach to the roundabout the adjacent hard shoulder area is marked with hatched road markings, with the road markings being barely visible. As a result, vehicles may choose to park in the hard shoulder (as observed during the site visit). Parked vehicles, particularly larger side vehicles may restrict forward visibility towards the temporary signals leading to late recognition of the signals and rear end shunt collisions.		It is recommended to reapply the hatch road markings in the hard shoulder.
Design Organisation Response: Remarking the hatched area is outside the scope of the scheme and an existing maintenance issue.		
Overseeing Organisation Response: Agree with Design organisation.		
Agreed Response: No action.		



4.5 Problem (Traffic signs, Road markings and Lighting)

Location:	Options 1 and 2	
Summary:	Inappropriate speeds approaching temporary signals.	Recommendation
It is not clear precisely where terminal 40mph signs will be positioned on the westbound off slip road approach. Traffic approaches the interchange on the off-slip road from the national speed limit and if the speed limit reduces to 40mph too close to the signals, it will unlikely slow down the traffic sufficiently before the junction. The collision records demonstrate a concerning pattern with 4 collisions on this approach in 5 years. This arrangement may lead to rear end shunt collisions.		It is recommended that the temporary 40mph terminal signs should be positioned further back from the traffic signals, prior to the gantry to give motorists more time to slow down on the approach to the signals. In addition, warning signs of traffic signal ahead/queuing vehicles should be provided.
Design Organisation Response: Agreed.		
Overseeing Organisation Response: Agree with Design organisation response.		
Agreed Response: Temporary terminal signs should be positioned in advance of the signals on IFC drawings.		



4.6 Problem (Traffic signs, Road markings and Lighting)

Location:	Options 1 and 2	
Summary:	Lack of forward visibility towards vehicles queuing on the circulatory carriageway.	Recommendation
	Traffic queues forming on the circulatory carriageway back from the temporary traffic signals may lead to rear end shunt collisions due to the road curvature and vegetation in the offside verge restricting forward visibility to the signals.	It is recommended that a mean maximum length of traffic queue should be calculated on the circulatory carriageway approach to the proposed signals and forward visibility toward the end of the queue should be cleared. In addition, warning signs of traffic signal ahead/queuing vehicles should be provided on the roundabout.
Design Organisation Response: Based on the traffic flows used in the analysis the predicted mean maximum queue on the circulatory carriageway is 6pcu (approximately 33 metres). Additional vegetation clearance further round the central island near the Services entry to the roundabout to be undertaken. Traffic signal ahead signs can be provided if required visibility not achieved.		
Overseeing Organisation Response: Agree with Design organisation response.		
Agreed Response: TRA and Design organisation to liaise with the Local Authority to gain approval to clear vegetation for areas outside of the TRA responsibility to achieve forward visibility or add warning signs if visibility cannot be achieved.		



4.7 Problem (Traffic signs, Road markings and Lighting)

Location:	Options 1 and 2	
Summary:	Lack of information for road users.	Recommendation
On the eastern roundabout circulatory carriageway there is no direction signing provided showing route A4810, whilst there is associated road markings provided for this destination. Queueing traffic may cover the worded road markings resulting in vehicles taking incorrect lanes when exiting towards the A4810. In the worst case, road users not familiar with the area may miss the information shown on the road markings and undertake sudden lane changing manoeuvres leading to side swipe collisions.		It is recommended to provide a wicket type sign incorporating the A4810 destination on the circulatory carriageway.
Design Organisation Response: Agreed		
Overseeing Organisation Response: Agree with Design organisation response.		
Agreed Response: Design organisation to modify signage drawing.		



4.8 Problem (Traffic signs, Road markings and Lighting)

Location:	Option 2	
Summary:	Traffic queuing leading to conflicts.	Recommendation
No MOVA detection zones are shown on the circulatory carriageway on the approach to the traffic signal junction with the A4810 entry. Traffic queuing at the red signal for stage C may block the exit to the A4810 leading to inappropriate manoeuvres and collisions.		It is recommended to provide MOVA detection zones.
Design Organisation Response: Initial thoughts are that MOVA detection zones in these areas would not be required. When the preceding M4 westbound off slip road signals (phase B) are at green it would force and hold the circulatory signals (phase C) at A4810 green to allow the M4 westbound traffic through. When the A4810 approach (phase D) is at green it would hold the circulatory approach (phase A) at M4 westbound off slip road at green. Additional MOVA detection zones could be added if the signal operation described required modification once operational.		
Overseeing Organisation Response: Agree with Design organisation response.		
Agreed Response: To be monitored while the scheme is operational and consideration to add additional MOVA detection zones to be added if required.		



4.9 Problem (Traffic signs, Road markings and Lighting)

Location:	Option 3	
Summary:	Traffic queuing leading to conflicts.	Recommendation
There are proposed virtual MOVA detection zones on the circulatory carriageway approach to the traffic signals. However, vehicles in the traffic queue reaching the zone AX1 could be obscured from vehicles circulating the roundabout in the inside lane due to the extensive vegetation in the offside verge, leading to rear end shunts.		It is recommended to clear visibility on the inside of the circulatory carriageway by cutting back all vegetation and provide additional traffic signals ahead/queuing traffic warning signs on the circulatory carriageway.
Design Organisation Response: Option 3 drawing UK0029359.3987-003 shows the vegetation being cut back to provide required visibility. If Option 3 is taken forward traffic signals ahead warning signs can be provided if the required visibility cannot be achieved.		
Overseeing Organisation Response: Agree with Design organisation response.		
Agreed Response: TRA and Design organisation to liaise with the Local Authority to gain approval to clear vegetation for areas outside of the TRA responsibility to achieve forward visibility or add warning signs if visibility cannot be achieved.		



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