

Stage 1 Road Safety Audit – Designers Response
Former Tollgate Hotel, Gravesend, Kent

Project Details and Authorisation	
Project:	Former Tollgate Hotel, Gravesend, Kent
Report Title:	A2 westbound slips / A227 Roundabout Stage 1 RSA
Date:	27/08/2025
Document reference and revision:	22052-MA-RP-RSA01 Rev A
Produced by:	Markides Associates Ltd
On behalf of:	National Highways
Prepared by	
Name:	Jennifer Baker
Position:	Director
Signed:	<i>J Baker</i>
Organisation:	Markides Associates Ltd
Date:	29/08/2025
Approved by	
Name:	Nigel De Wit
Position:	Spatial Planner
Signed:	<i>NDW</i>
Organisation:	National Highways
Date:	29/08/25

Introduction	
Scheme Details:	The proposed scheme comprises of an interim capacity improvement scheme for the westbound off slip of the A2 'Gravesend, Wrotham and Services' dumbbell roundabout junction. Currently, the flare on the approach to the roundabout is marked as being for left turning vehicles only. The interim scheme proposes to amend this road marking to allow the flare to be utilised for all movements, as the right turn movement is the dominant flow. Lining changes are also proposed to the roundabout gyratory to clearly delineate two circulation lanes. Accompanying signage will also be implemented.
Stage of RSA:	Stage 1
RSA Details:	2025-08 Gravesend RSA1 – Rev 1

Key Personnel	
Overseeing Organisation:	National Highways – Nigel De Wit
RSA Team:	Sevenairs Consulting Ltd – Haydn Vernals and Sarah Vernals
Design Organisation:	Markides Associated Ltd – Jennifer Baker

Road Safety Audit Decision Log					
Problem	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
A-01	Observations at the roundabout noted that drivers turning right from the southbound approach towards the A2 westbound on-slip had a tendency to follow the kerb line of the central roundabout island. The proposals seek to encourage drivers turning right from the A2 westbound off-slip to form two lanes. This arrangement may increase the risk of a collision on the circulatory carriageway at the exit for the A2 westbound on-slip. In this scenario, a slower moving vehicle turning towards the A2 westbound on-slip could be overtaken by a faster moving vehicle turning right from the A2 westbound off-slip. A lack of lane use clarity in the carriageway markings may increase the risk of collisions on the circulatory carriageway.	It is recommended that a spiral arrangement is provided for vehicles turning right onto the A2 westbound on-slip to direct drivers from the offside (lane 2) on entry to the roundabout to the nearside (lane 1) as they exit onto the A2 westbound on-slip.	Agreed Please see Drawing Number 22052-MA-XX-DR-C-0102 P07, which has been revised to show a spiral arrangement as requested.	The Design Organisation's response to amend the road markings is acceptable. These should be subject to RSA at detailed design.	The Design Organisation's response is agreed subject to RSA at the detailed design stage.

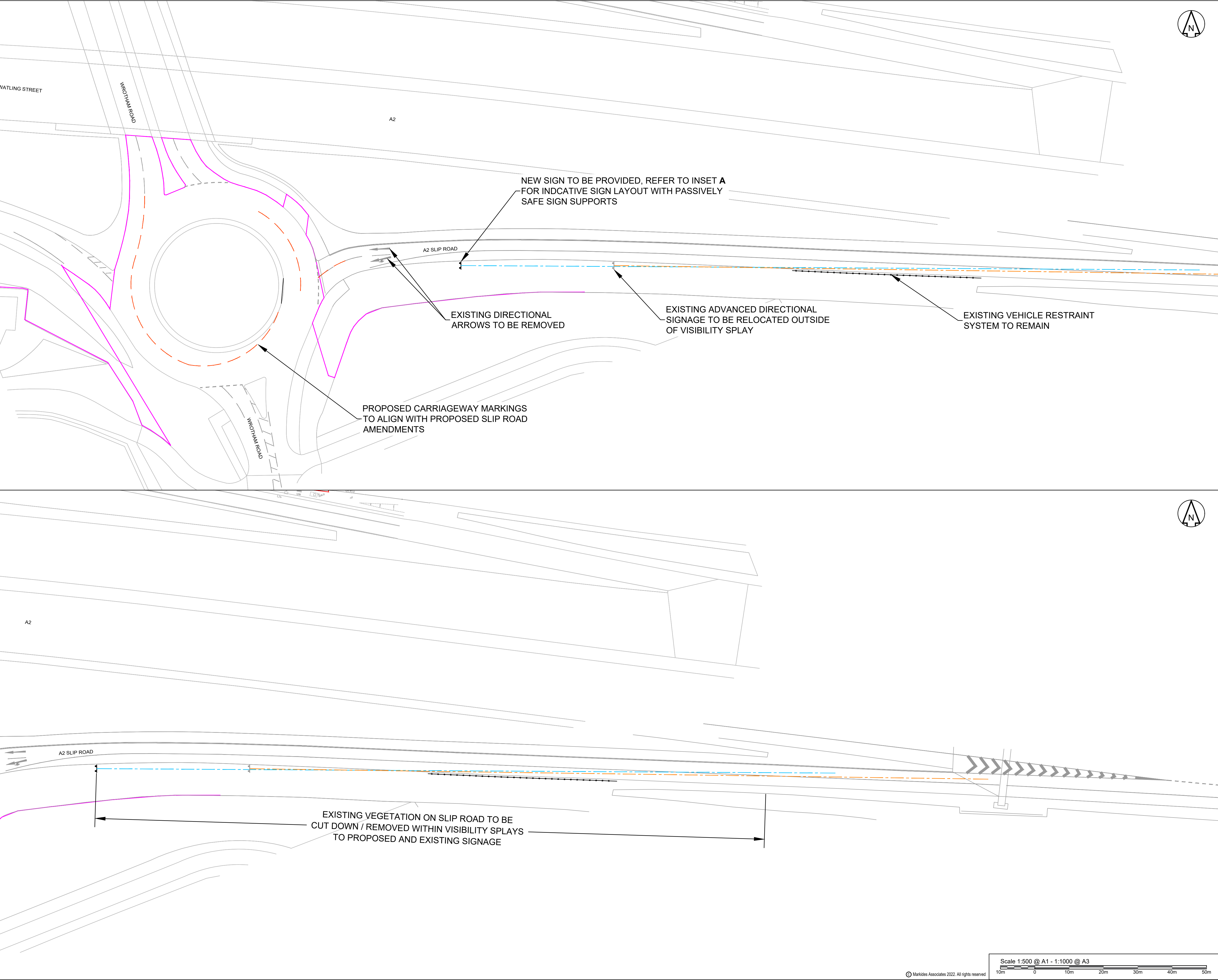
Road Safety Audit Decision Log					
Problem	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
A-02	A lane use direction sign is proposed on the slip road verge. This indicates two lanes and is located about 120m in advance of the development of two lanes on the carriageway. Drivers approaching this sign may observe this sign potentially over 200m from the development of two lanes and mistake the hard shoulder for a live lane. This could be a problem, especially for tired drivers or drivers unfamiliar with UK carriageway markings, i.e. those travelling from mainland Europe. The location of the lane use sign may increase the risk of a collision with a stationary or broken-down vehicle on the hard shoulder.	It is recommended that the lane use sign is located closer to the point where the slip road widens into two lanes without compromising visibility to the give way line.	Agreed Please see Drawing Number 22052-MA-XX-DR-C-0102 P07, which has been revised to show the sign located on the immediate approach to the widening to two lanes. We have also identified that the existing ADS will need to be moved further from the edge of the carriageway to ensure the sign is visible.	The Design Organisation's response to amend the road signs is acceptable. These should be subject to RSA at detailed design.	The Design Organisation's response is agreed subject to RSA at the detailed design stage.
A-03	A lane use direction sign is proposed on the slip road verge. This indicates two lanes for Gravesend, the A227(N) and the services. However, drivers seeking the services would be required to change lanes under the bridge or on the northern roundabout to make a right turn into the services. This may increase the risk of collisions involving lane changes under the bridge or on the northern roundabout.	It is recommended that the word "Services" is used for the right lane only and that the text is relocated above the right lane arrow on the sign	Agreed Please see Drawing Number 22052-MA-XX-DR-C-0102 P07, which has been revised to show the altered sign face.	The Design Organisation's response to amend the road sign is acceptable. These should be subject to RSA at detailed design.	The Design Organisation's response is agreed subject to RSA at the detailed design stage.

Road Safety Audit Decision Log					
Problem	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
A-04	Should the recommendation in Problem A-02 be taken up, the proposed sign location is likely to be placed where no road restraint system is provided. Should the recommendation in Problem A-02 be rejected, then the proposed sign location would be behind a road restraint system that is provided specifically for the existing roadside cabinet and not a sign support structure. Insufficient provision for secondary collisions involving errant vehicles may increase the injury severity for the errant vehicle occupants and/or other road users in the path of an errant vehicle.	It is recommended that a passively safe sign support structure is provided.	Agreed Please see Drawing Number 22052-MA-XX-DR-C-0102 P07, which has a note introduced to require passive safe sign supports are used.	The Design Organisation's response to provide a passively safe post is acceptable. This should be subject to RSA at detailed design.	The Design Organisation's response is agreed subject to RSA at the detailed design stage.

Road Safety Audit Decision Log					
Problem	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
A-05	Whilst the provision of carriageway arrows or text is often useful for drivers, there is the risk here that the proposed inclusion of the ahead arrows may be confusing for drivers. This is especially a problem when used on a circulatory carriageway such as proposed, where the ahead arrows could direct drivers from both lanes into the single lane A2 westbound on-slip. An alternative arrangement of worded destinations is likely to be easily confused with such as A227(S) and A227(N) also unlikely to fit in the available carriageway width and potentially increasing the risk of a loss of control type collision for a powered two wheeler on the worded markings that would be placed at a point where these users may be banked over whilst negotiating the entry curve to the roundabout.	It is recommended that the carriageway arrow markings or any alternative worded markings are omitted from the proposals	Agreed Please see Drawing Number 22052-MA-XX-DR-C-0102 P07, which has omitted the carriageway arrows.	The Design Organisation's response to remove the arrow markings is acceptable at this stage but a review of all road markings should be carried out at the detailed design stage and then be subject to RSA to ensure a clear and consistent approach is used.	The Design Organisation's response is agreed subject to detailed design and RSA at that stage.

Design Organisation Statement	
On behalf of the design organisation I certify that: 1) The RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.	
Name:	Jennifer Baker
Signed:	<i>J Baker</i>
Position:	Director
Organisation:	Markides Associates Ltd
Date:	29/08/2025

Overseeing Organisation Statement	
On behalf of the Overseeing Organisation I certify that: 1) The RSA actions identified in response 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:	Nigel De Wit
Signed:	<i>NDW</i>
Position:	Spatial Planner
Organisation:	National Highways
Date:	29/08/25



DO NOT SCALE OFF THIS DRAWING

NOTES

1. Do not scale from this drawing. All dimensions are in metres unless otherwise noted.
2. This drawing has been based on Ordnance Survey mapping and Markides Associates cannot be held responsible for any discrepancies which may arise because of it.

KEY

- OS MAPPING
- (INDICATIVE) NATIONAL HIGHWAYS BOUNDARY
- EXISTING TRAFFIC SIGN
- PROPOSED TRAFFIC SIGN
- EXISTING ROAD MARKINGS
- PROPOSED MARKINGS
- EXISTING VEHICLE RESTRAINT SYSTEM
- EXISTING 215m VISIBILITY TO ROAD SIGN
- PROPOSED 215m VISIBILITY TO ROAD SIGN

INSET A

Gravesend (C)
A227(N)

Wrotham
Istead Rise
Meopham
A227(S)

Services



Revision History				
P07	FOR INFORMATION	NB	JB	JB 18.08.25
P06	FOR INFORMATION	NB	JB	JB 09.07.25
P05	FOR INFORMATION	NB	JB	JB 27.06.25
P04	FOR INFORMATION	MS	JB	JB 16.04.25
P03	FOR INFORMATION	JFB	HA	HA 17.03.25
P02	FOR INFORMATION	NB	HA	HA 10.04.24
P01	FOR INFORMATION	AA	HA	HA 08.01.24
Rev	Comment	By	Chkd	Appr Date

Current Revision				
P07	FOR INFORMATION	NB	JB	JB 18.08.25
Rev	Comment	By	Chkd	Appr Date

S2 - FOR INFORMATION

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Project
BP TOLL GATE

Drawing Title
ROUNABOUT SIGN AND
ROAD MARKINGS PROPOSAL

Markides Associates reference: 22052 1:500 @ A1
22052-MA-XX-DR-C-0102 - P07

