M1 Junction 9 Initial Road Safety Assessment

Hertfordshire County Council

17 June 2025

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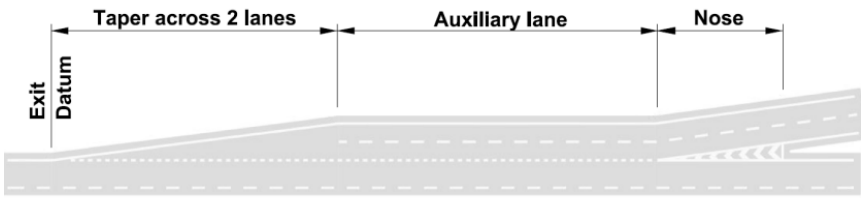
MEng(Hons) CEng FCIHT MSoRSA PMQ

1. Introduction

Alterations are proposed on the M1 northbound carriageway approaching Junction 9 of the M1. This includes widening the off slip to enable two lanes to be provided along its length, the relocation of gantry signs and count marker signs, and the extension of the Vehicle Restraint System (VRS).

The off slip has been designed to Layout B Option 2 – Two-lane auxiliary diverge from CD 122.

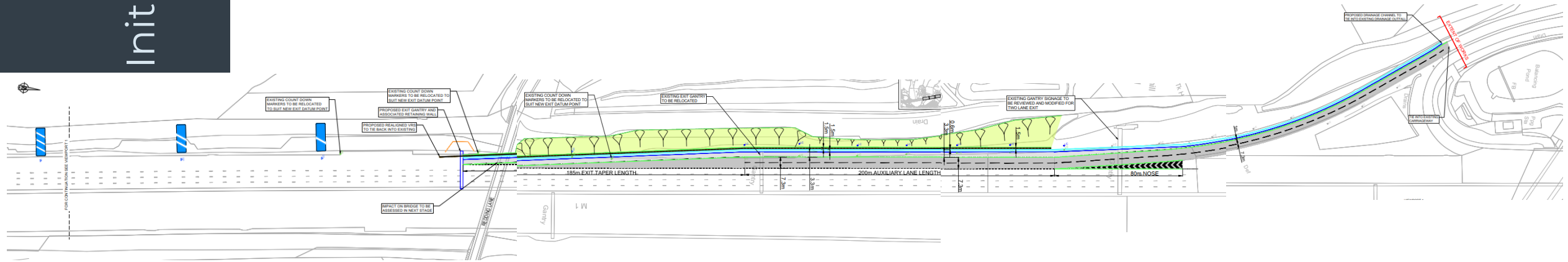
Figure 3.30d Layout B option 2 - Two-lane auxiliary diverge



An initial Road Safety Review has been carried out to understand road safety concerns posed by the proposed alterations, alongside recommended measures that could reduce the likelihood or severity of collisions occurring.

The review was carried out in June 2025 by Jon Noble, a member of SoRSA and a Road Safety Audit Team Leader with over 20 years' experience and with recent approval to undertake audits on the Strategic Road Network and within local roads across the UK.

No site visit was undertaken to support the review, with Google Streetview and aerial photography used instead.



M1 Junction 9
Initial Road Safety Assessment

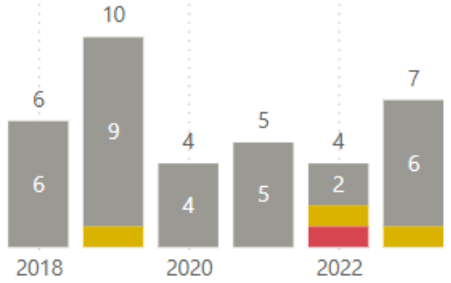
2. Collision Analysis

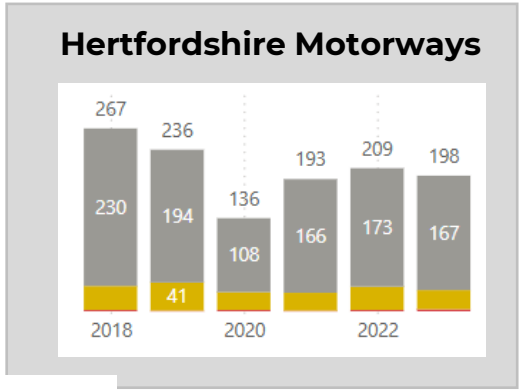
Collisions	Casualties	Vehicles
36	68	96

The WSP GB Collision Dashboard (which reports STATS19 data) has been used to review the collisions occurring within the site area. A five-year period from 2018 to 2023 has been considered for analysis. The analysis is shown on the next few pages, with collisions reviewed between Flamsteadbury Lane overbridge and the off slip to junction 9 (A5183).

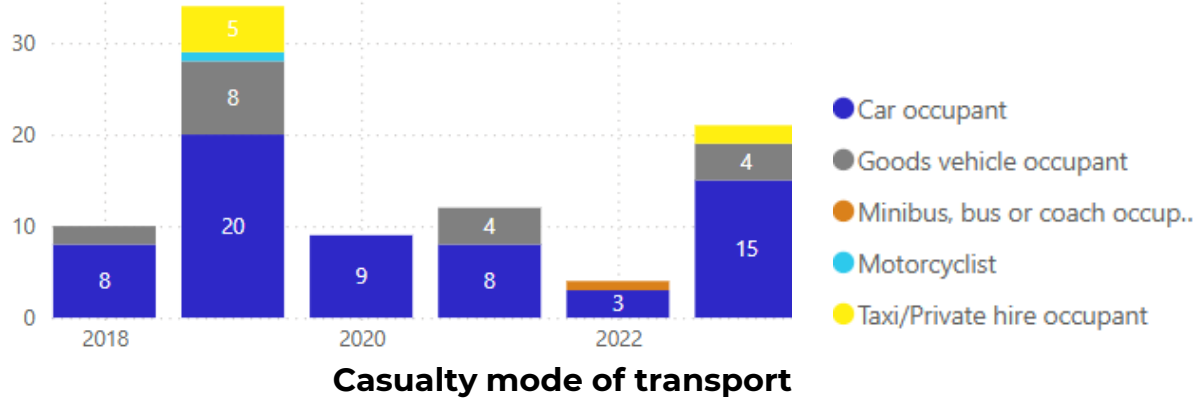
Collisions were recorded throughout the day with a peak around lunchtime. AM and PM peaks were also identifiable.

The number of collisions saw a peak in 2021, with a reduction during the pandemic. This is reflective of the Motorways across Hertfordshire.





Car occupants followed by goods vehicle occupants were the most frequent casualty, and again this is consistent with Motorways in Hertfordshire



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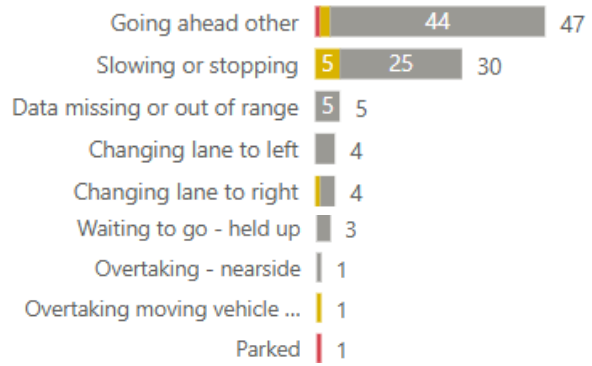
The following table shows the other vehicles involved in a collision, for each casualty model of travel. Where there were multiple vehicles, this is included in in Unknown / Multiple (these were dominated by cars, then goods vehicles, with a few taxis, a single P2W and a single bus)).

Grouped casualty type	Car	Goods vehicle	Minibus, bus ...	No other veh...	Other vehi...	Pedal Cycle	Powered 2 whe...	Taxi/Private hire	Unknown / M...	Total
Car occupant	11	9	0	1	1	0	0	0	32	**54**
Goods vehicle occupant	0	0	0	0	0	0	0	0	10	**10**
Taxi/Private hire occupant	0	0	0	0	0	0	0	0	2	**2**
Minibus, bus or coach occupant	0	1	0	0	0	0	0	0	0	**1**
Motorcyclist	1	0	0	0	0	0	0	0	0	**1**
Agricultural vehicle occupant	0	0	0	0	0	0	0	0	0	**0**
Cyclist	0	0	0	0	0	0	0	0	0	**0**
Horse rider	0	0	0	0	0	0	0	0	0	**0**
Mobility scooter rider	0	0	0	0	0	0	0	0	0	**0**
Other vehicle occupant	0	0	0	0	0	0	0	0	0	**0**
Total	**12**	**10**	**0**	**1**	**1**	**0**	**0**	**0**	**44**	**68**

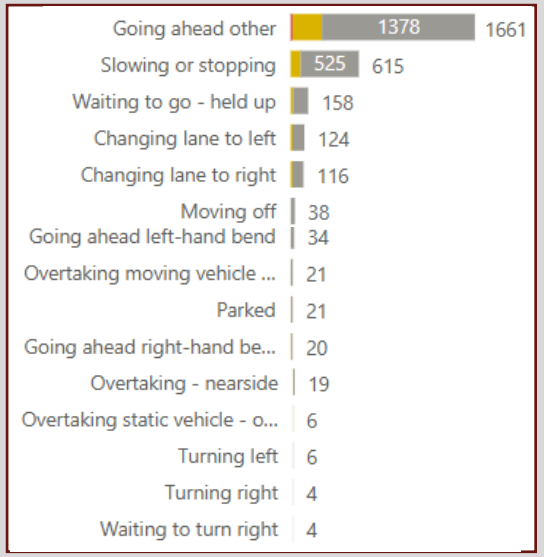
- For the dominating paring (Car occupant casualties in collisions involving cars), 4 of the 7 collisions were in the hours of darkness
- For the second most common pairing (Car occupant casualties in collisions involving Goods vehicles), 3 of the 7 collisions involved changing lanes
- The only fatal injury was an occupant of a bus and the other vehicle involved was a goods vehicle.

Vehicle Manoeuvre



- Most collisions involved vehicles going ahead.
- Followed by collisions involved vehicles stopping.
- Lane changes and overtaking manoeuvres as a group accounted for 10 of the 96 vehicles
- This is reflective of Hertfordshire Motorways

Hertfordshire Motorways



2. Collision Analysis

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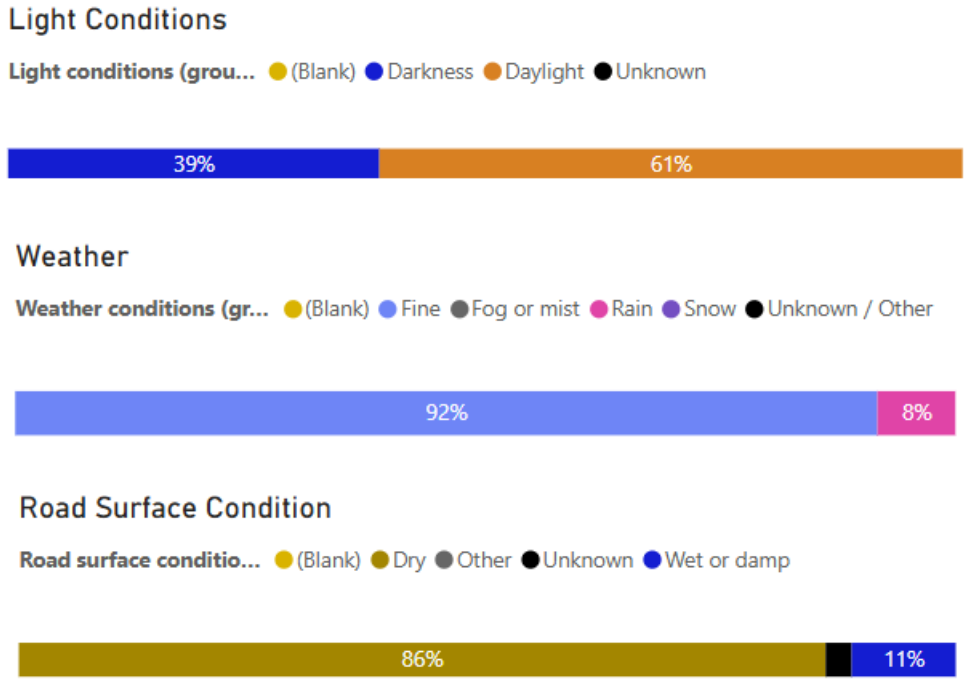
The most common **contributory factors** identified for the collisions were driver / rider failed to judge other persons path or speed / look properly.

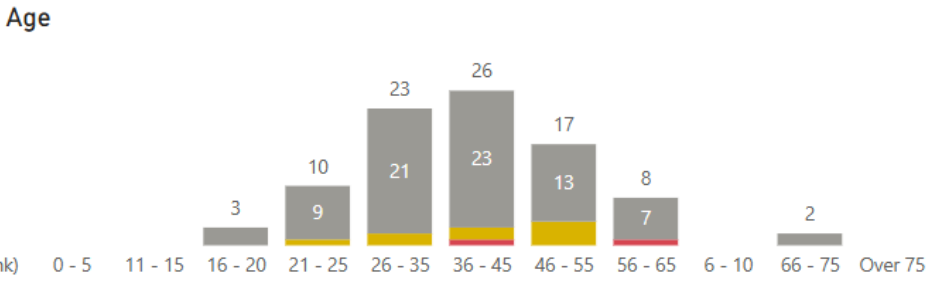
Sudden breaking and following too close were a secondary grouping. This is reflective of all Hertfordshire Motorways.

Contributory factors	Number
Driver Error	**24**
Driver/Rider failed to judge other person`s path or speed	11
Driver/Rider failed to look properly	10
Sudden braking	7
Poor turn or manoeuvre	3
Swerved	2
Vehicle blind spot	2
Loss of control	1
Driver injudicious action	**14**
Following too close	12
Travelling too fast for conditions	3
Driver behaviour	**7**
Driver/Rider careless, reckless or in a hurry	3
Distraction in vehicle	2
Aggressive driving	1
Learner or inexperienced driver/rider	1
Unfamiliar with model of vehicle	1
External influence	**4**
Slippery road (due to weather)	2
Deposit on road (eg. oil, mud, chippings)	1
Spray from other vehicles	1
Driver impairment	**2**
Driver/Rider impaired by alcohol	1
Fatigue	1
Total	**36**

No concerning trends were noted in light condition, road surface conditions or weather.



Collisions mostly involved middle-aged drivers which is reflective of all Hertfordshire Motorways.



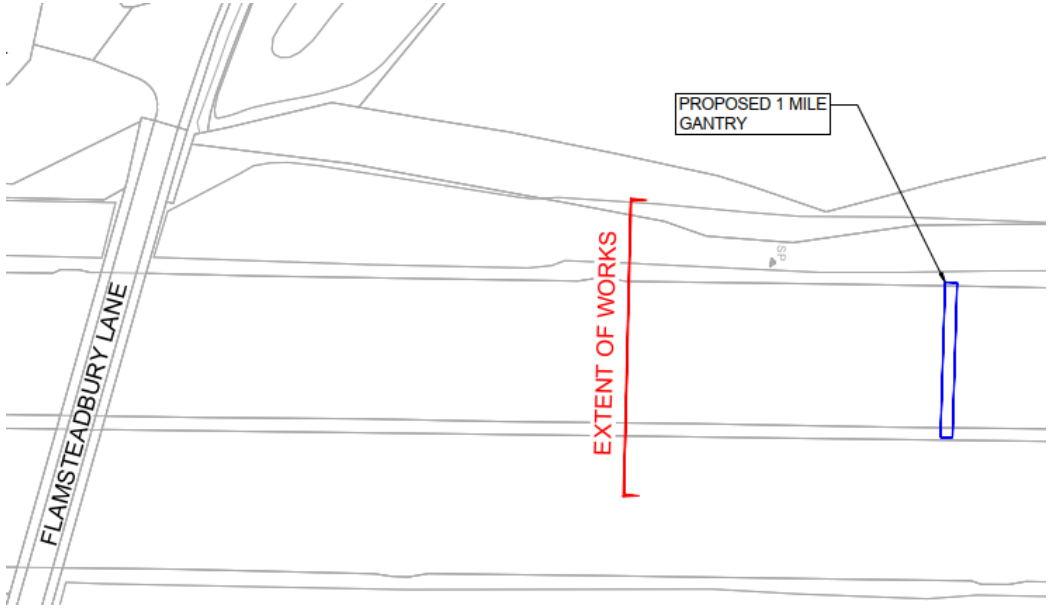
3. Road Safety Concerns

A. Proposed 1 mile gantry may obstruct visibility to existing (blank) sign

As no site visit has been undertaken, it is difficult in some instances to pinpoint the exact location for existing and proposed infrastructure.

There is an existing sign (which is currently blank) close to the location the proposed 1 mile gantry. Assuming that information is provided on the sign in the future, the relocated nearside gantry leg may obstruct drivers visibility to the sign.

It is recommended that the gantry is not located in front of this sign. It is also recommended that this sign is removed if no longer required.



3. Road Safety Concerns

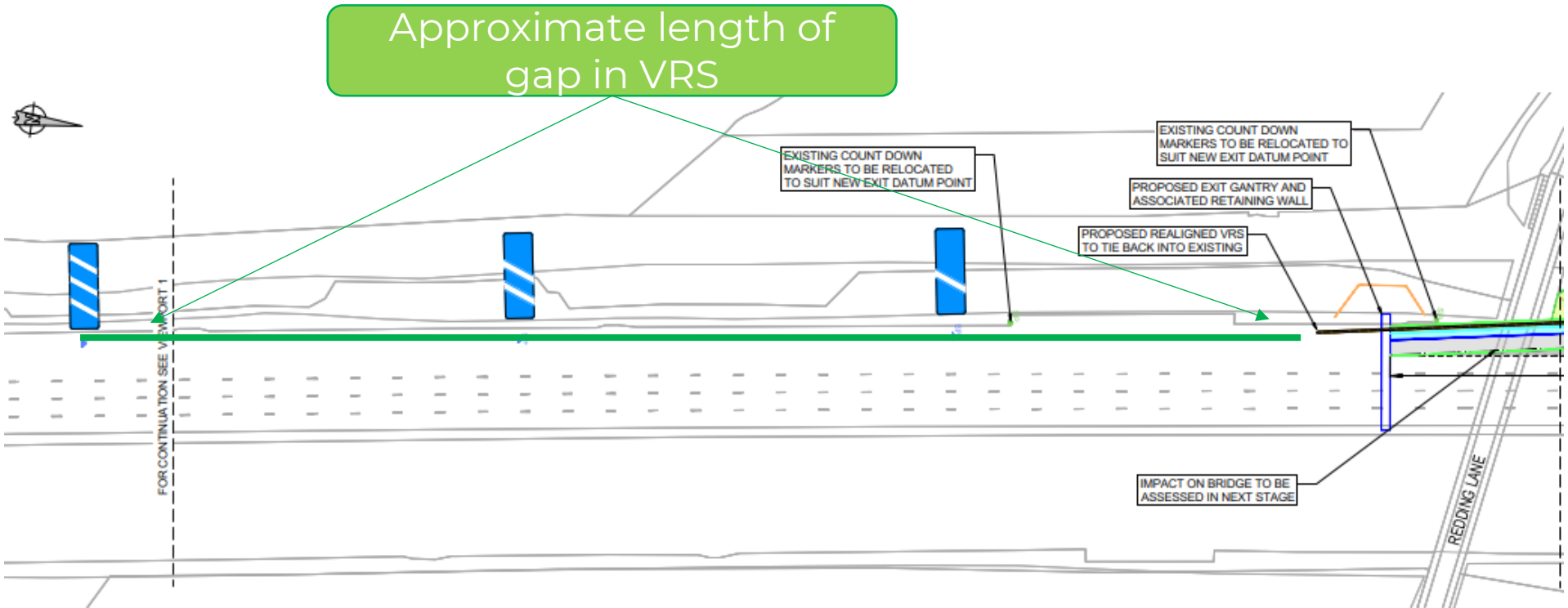
B. Relocated count down markers may no longer be protected by the Vehicle Restraint System (VRS)

The majority of this section of the M1 is provided with a Vehicle Restraint System (VRS) on the nearside. However, there is a gap in the VRS which begins after the existing 1/3 mile gantry, and starts again after the existing 300 yard countdown marker sign. VRS is not shown on the plans except for at the tie in at the diverge, so it is difficult to see its exact location. Currently, only the first of the countdown marker signs is situated within the gap in VRS.

The scheme relocates all three count down marker signs, so that all three might unprotected by the VRS.

Errant vehicles may hit these signs and this may increase the severity of a collision.

It is recommended that additional VRS is provided to remove the gap entirely



3. Road Safety Concerns

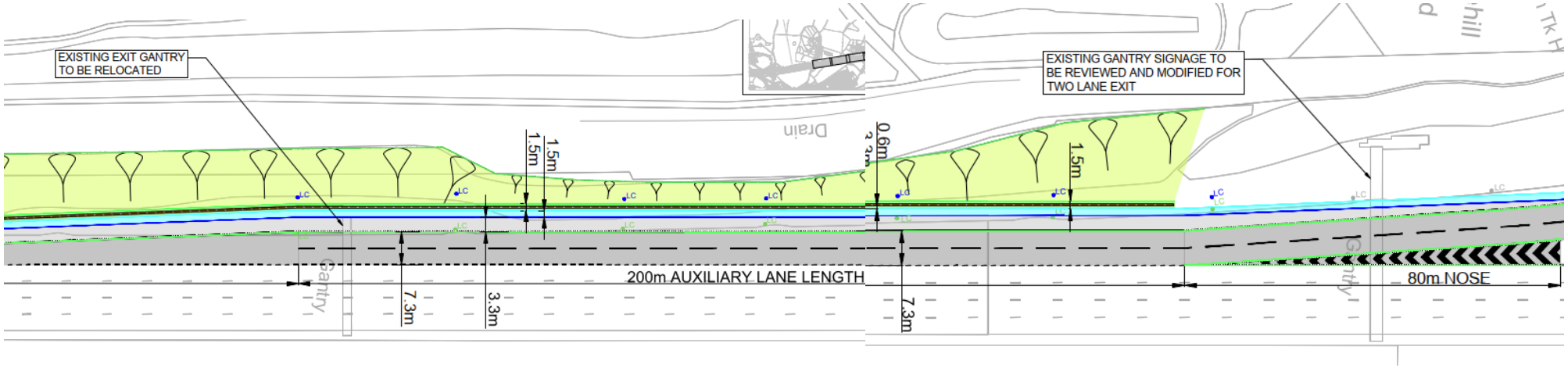
C. Existing exit gantry sign may be too late to inform drivers that there are 2 lanes

The plans show that the existing gantry sign located as the off-slip deviates away from the mainline will be reviewed and modified to support two lane operation, however it is not proposed to be relocated.

The scheme extends the length of the off-slip and provides two lanes for its duration. The location of the existing exit sign may be too late to provide useful information to drivers to use two lanes.

This may result in late lane manoeuvres and side-swipe collisions.

It is recommended that the gantry sign is be relocated to where drivers begin to use two lanes of traffic, and it should provide information that matches the signs and road markings on the roundabout entry.



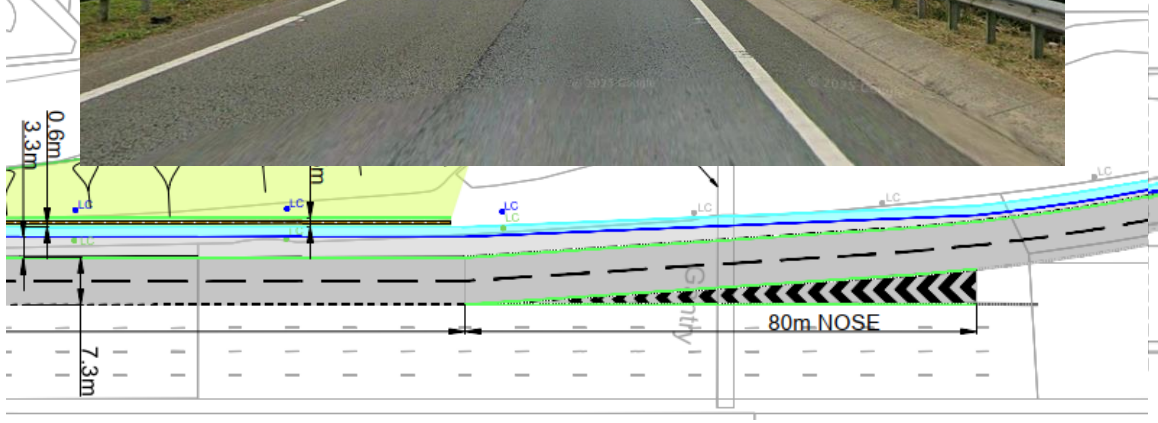
3. Road Safety Concerns

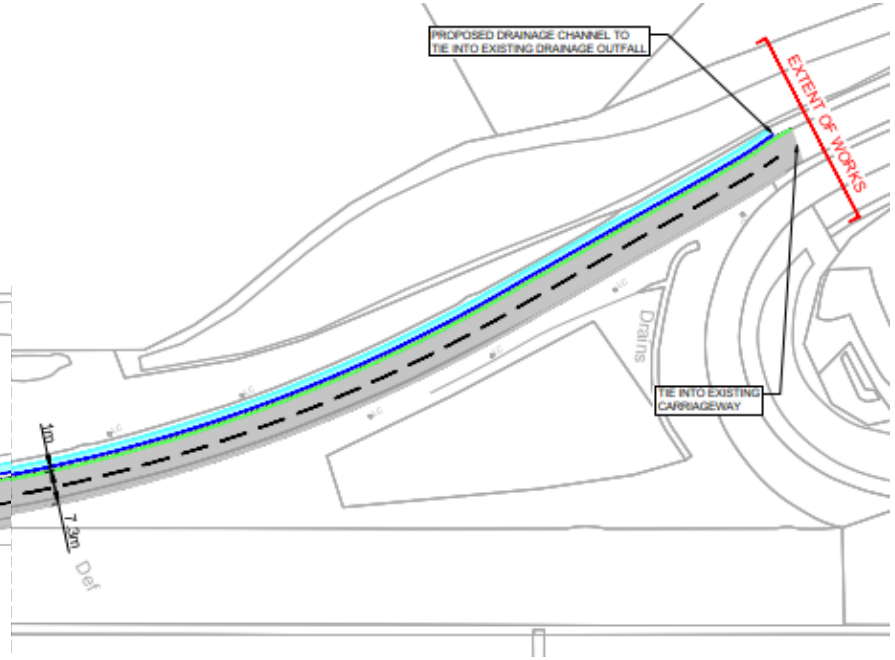
D. Visibility around the bend may be reduced due to the widening and change to two lanes

There is an existing left-hand bend within the off-slip that drivers navigate on the approach to the roundabout at junction 9. There is currently an area of land kept clear of vegetation, presumably to maintain adequate forward visibility.

The scheme widens the off-slip and provides two lanes leaving the M1. The drawings do not show any additional areas of vegetation clearance. The changes may result in reduced visibility and drivers may fail to see broken down vehicles, objects in the carriageway or queuing traffic from the approaching junction.

It is recommended that appropriate visibility is maintained throughout the off-slip.





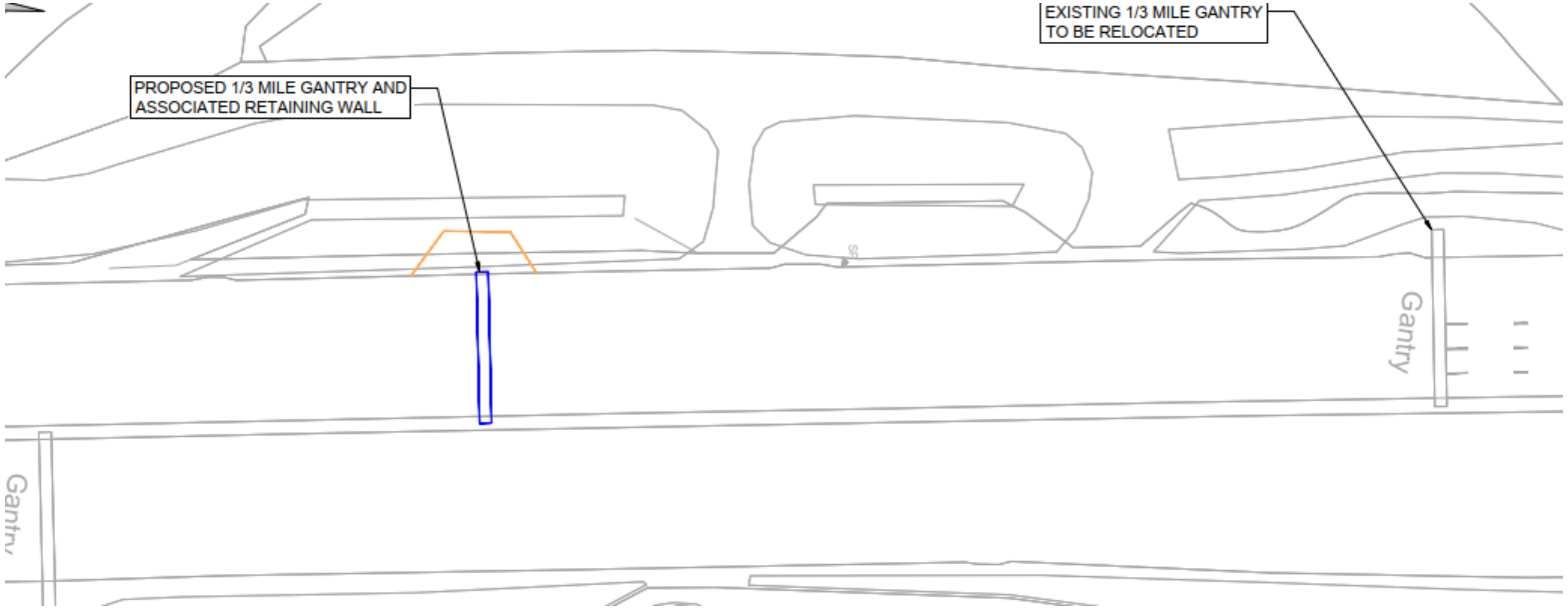
3. Road Safety Concerns

E. Gantry sign leg may be located too close to Vehicle Restraint System (VRS) for it to operate safely

The scheme proposes to relocate gantry signs as part of the off slip extension. The drawings provided do not show the location of all the Vehicle Restraint System (VRS) and the early stage of design means that the information on sign size and location may be more indicative.

However, as shown, some of the gantry sign legs may be located close to the existing VRS. This may result in the VRS failing and increasing the severity of any injuries resulting from errant vehicles hitting the VRS.

It is recommended that all the gantry sign legs are installed an adequate distance behind the VRS



4. Additional Concerns

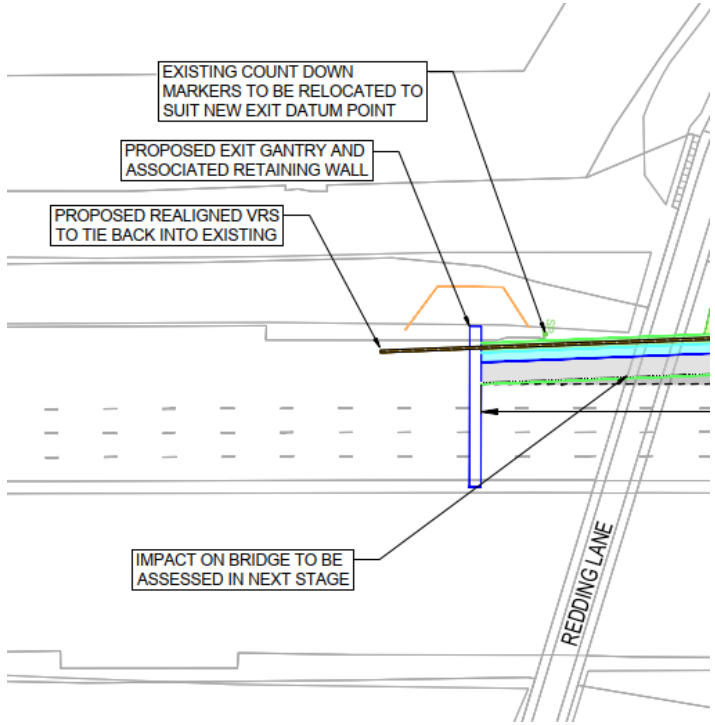
i. Widening the carriageway under bridge may not be feasibly given the proximity of the bridge's retaining structure

The proposal includes the widening of the road underneath the Redding Lane bridge. The widening is relatively modest, however, there appears to be little space between the edge of the road and the bridge retaining structure.

If the plan is to upgrade the retaining structure (and increasing the gradient) to provide additional road-space, then the widening can be accommodated.

However, if there are no plans to adjust the retaining structure, then there may not be enough space to facilitate the road widening. This may result in narrower lanes or a shorter length of exit taper at this location – which may increase the likelihood of collisions.

It is recommended that this area is reviewed prior to the next phase of design to ensure that current assumptions are workable.



4. Additional Concerns

ii. Alternative diverge option to segregate the two exit lanes may improve safety of users

The off slip has been designed to Layout B Option 2 – Two-lane auxiliary diverge from CD 122. This type of diverge is only to be used when modifying an existing diverge. This scheme is a modification to the existing diverge and therefore this is an allowed option.

It is noted that the Redding Lane bridge represents a major constraint to any improvement works.

However, options that provide additional segregation between the two exit lanes are preferred, in part due to the reduction in collisions and severity of injuries that result.

It is recommended that the potential to provide additional segregation between the two exit lanes is explored.