

ROAD SAFETY AUDIT RESPONSE

1 PROJECT DETAILS:

Report title:	Knowsley Business Park Section 278 works – Road Safety Audit Stage 1/2 – Designer's Response
Date:	9 June 2025
Document reference and revision:	22075-BGL-XX-XX-TN-C-00003 P01
Prepared by:	Burrows Graham Limited
On behalf of:	Knowsley Council

2 AUTHORISATION SHEET

Project:	Knowsley Business Park
Report title:	Section 278 works – Road Safety Audit Stage 1/2 – Designer's Response
Prepared by:	
Name:	Heleen Schmidt
Position:	Civil Engineer
Signed:	<i>H Schmidt</i>
Organisation:	Burrows Graham Limited
Date:	9 June 2025
Approved by:	
Name:	Jack Williams
Position:	Civils Director
Signed:	<i>J Williams</i>
Organisation:	Burrows Graham Limited
Date:	9 June 2025

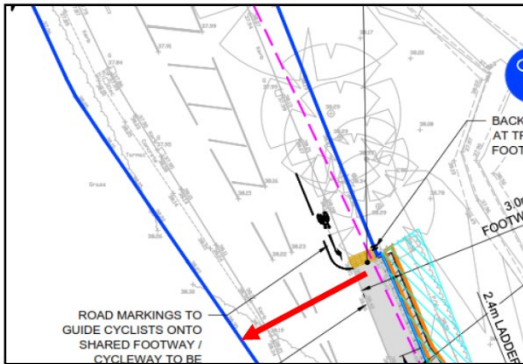
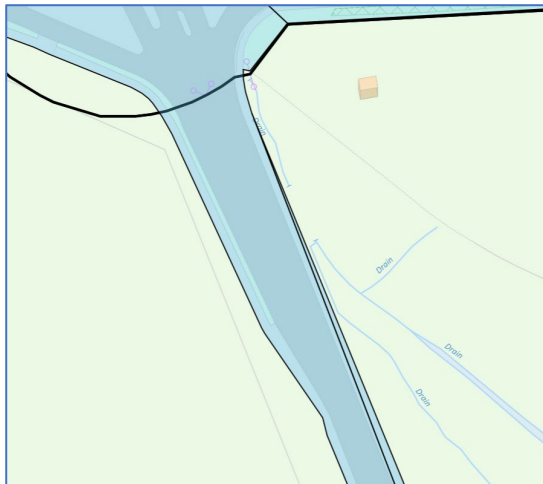
3 INTRODUCTION

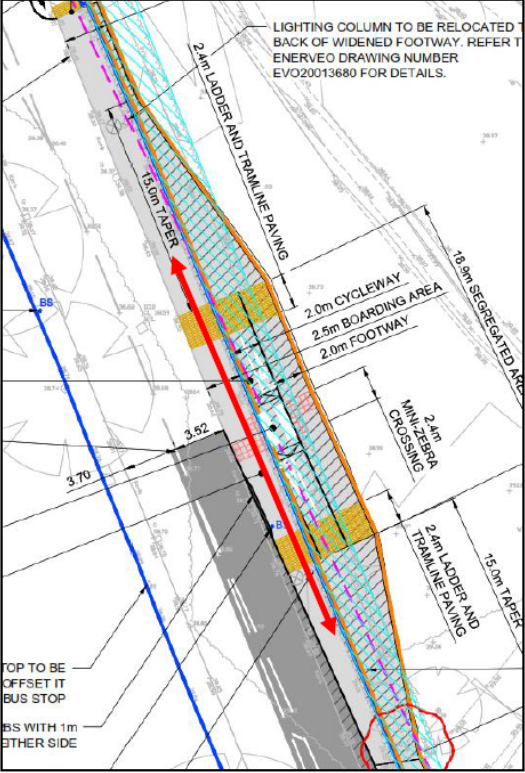
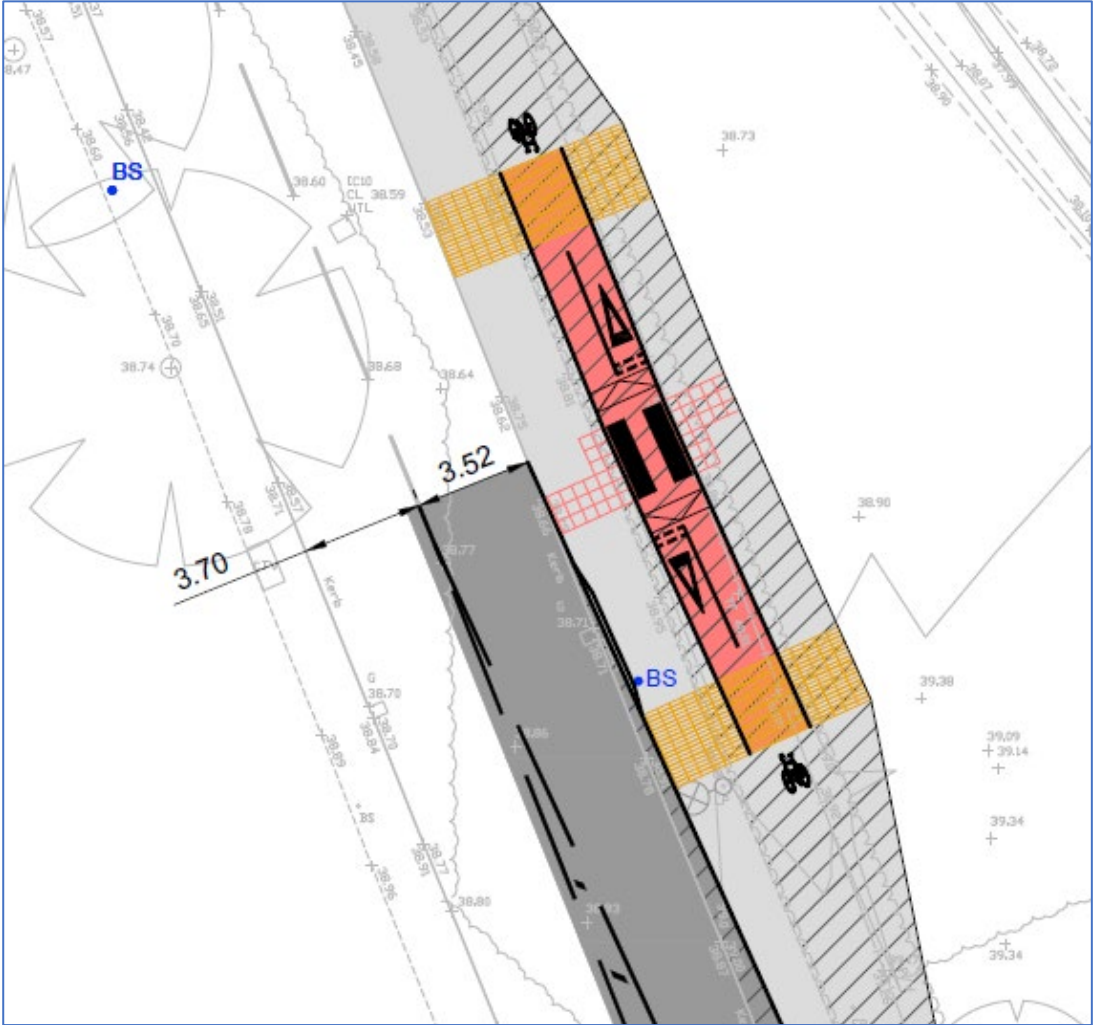
- 3.1.1 The scheme consists of a ghost island junction, shared use route and bus stop works along Ormskirk Road, Knowsley as part of the development of Knowsley Business Park.
- 3.1.2 This Designer's Response is provided to review and respond to the Stage 1/2 RSA dated 15 May 2025 undertaken by Road Safety Consulting Ltd (ref RSC/EB/MC/24128).
- 3.1.3 This Road Safety Audit Designer's Response was prepared by Heleen Schmidt, Civil Engineer at Burrows Graham Limited.

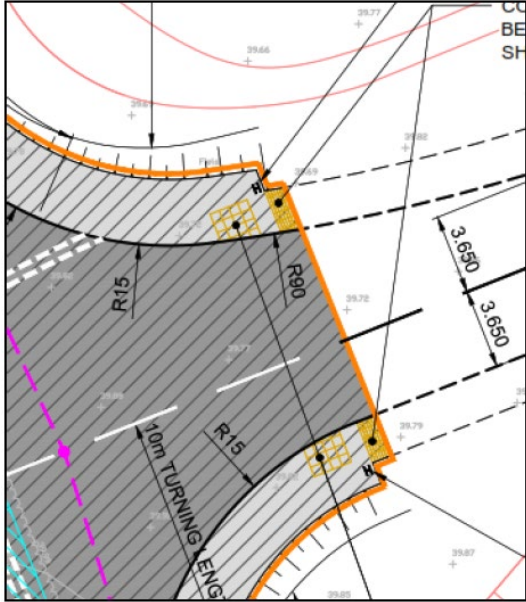
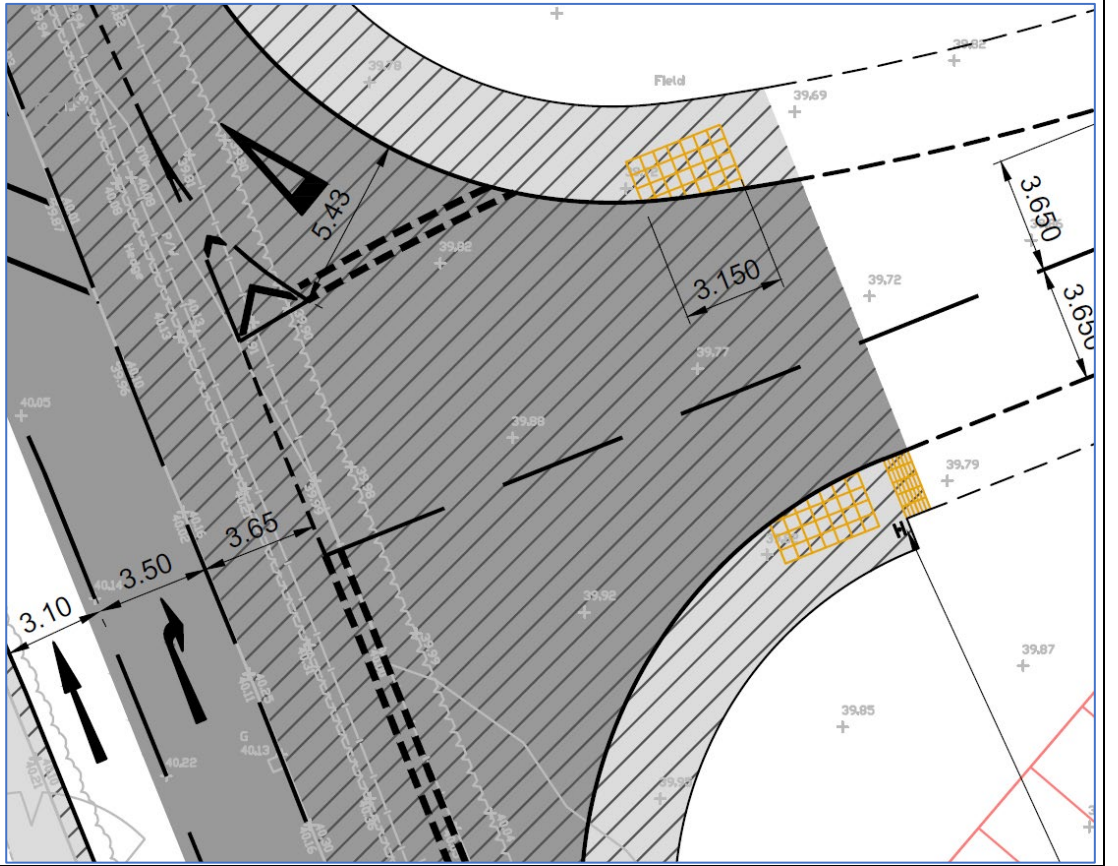
4 KEY PERSONNEL

Overseeing Organisation:	Knowsley Council
RSA Team:	Elaine Bingham– Road Safety Consulting Ltd (Audit Team Leader) Matt Cleggett – Consultant working on behalf of Road Safety Consulting Ltd (Audit Team Member)
Design Organisation:	Heleen Schmidt – Burrows Graham Limited Jack Williams – Burrows Graham Limited

5 ROAD SAFETY AUDIT DECISION LOG

Ref	RSA Problem	RSA recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action	
3.1	LOCATION: Ormskirk Road SUMMARY: Lack of suitable linkage to surrounding shared footway/cycleway facilities may pose as a hazard for cyclists leading to rider injury. In the vicinity of the development site, there is a dual use footway/cycleway along the southern side of the A580 with a toucan crossing facility across Ormskirk Road arm of the traffic signal junction. There is also a dual use footway/cycleway route along the northern side of the A580 into Coopers Lane. The proposal includes for a section of shared footway/cycleway along the eastern side of Ormskirk Road, however the northern end of the proposed route does not tie in with the existing dual use footway/cycleway route along the A580 leaving a missing section of approximately 80m and the opportunity to use the controlled crossing facilities at the traffic signal junction. The Audit Brief includes the following strategic decision that it is understood to have been accepted by Knowsley Council. 'The proposed cycleway cannot be extended north to facilitate a connection to the facility at the existing A580 East Lancs Road & A5208 Coopers Lane signal controlled junction. To sufficiently widen the existing footway to form a shared pedestrian/cycleway will require land outside of the developer's ownership, land that was also outside of the planning application boundary. The planning application made clear that this connection would not be delivered. Given the application was approved, there is no planning need for this connection. The drawings submitted for safety audit follow the principles approved in the planning application'. However, the RSA Team are concerned that the proposed dual use route has been designed for cyclists travelling southbound only and has not taken into consideration how cyclists travelling northbound will return back to the carriageway and the ability to join the existing dual use facility on the A580 if they wish to do so. The lack of suitable transition back to the carriageway may lead to cyclists being hit by vehicles. Alternatively, cyclists may continue on the footway. This may lead to pedestrian to cyclist collisions leading to pedestrian injury.	 ROAD MARKINGS TO GUIDE CYCLISTS ONTO SHARED FOOTWAY / CYCLEWAY TO BE BACK AT TR FOOT 3.0m FOOTW 2.4m LADDER	It is recommended that northbound cyclists are provided with an appropriate facility to allow them to safely return to the carriageway. The cycle dismount sign should be replaced with 'cyclists rejoin carriageway 'as recommended in LTN 1/20. However, it may be appropriate to cutback the vegetation encroaching at the back of the footway and widen the existing footway within the available highway boundary to link the existing and proposed route, albeit a substandard width to minimise rider conflicts with vehicles, and / or pedestrians. It is noted that the shared use route around the radii of the traffic signal junction is less than the minimum recommended and is also further narrowed by the pedestrian guard railing.	Disagree. The back of the footway is the highway boundary, as shown in the extract below from Knowsley Council's map. There is therefore no scope to widen the existing footway and Knowsley Council has accepted that this area falls outside the scope of the S278 works. Cycle dismount sign are no longer proposed but the "end of route" sign is still proposed for northbound cyclists. Please see the drawing extract below showing back to back signs to be installed at the northern end of the shared use route.    END OF ROUTE		

Ref	RSA Problem	RSA recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
3.2	LOCATION: Southbound bus stop SUMMARY: Potential conflicts between cyclists and users at the bus stop. At the bus boarder by-pass, due to the route either side of the bus boarder being shared and there being no difference in surfacing colour for the cycle section, cyclists are likely to take the direct route following the kerb edge instead of using the short section of segregated route behind the waiting area, particularly if the bus stop is not well used.	 It is recommended that if a bus boarder bypass is required, the cycle lane section should be of a contrasting colour to the footway and waiting area, and cycle symbols added to guide cyclists to follow the route behind the bus stop. It is acknowledged that recent research carried out by TfL indicates that there is a low risk of conflicts between bus passengers and cyclists at bus boarders.	Problem and recommendation accepted. Bus boarder bypass insisted upon by Merseytravel. Green coloured asphalt to be laid within the cycle lane section and cycle symbols to be painted. Please see the drawing extract below showing the location of cycle symbols and the extents of the green coloured asphalt in pink. 		

Ref	RSA Problem	RSA recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
3.3	LOCATION: Uncontrolled crossing across site access SUMMARY: Narrow crossing point potential conflicts between users leading to injury. The proposed width of 1.6m for the shared use crossing facilities at the access is narrower than the recommended latest design advice. Insufficient width to allow users to pass one another at the crossing may lead to pedestrian to cyclist or cyclists to cyclists collisions. 	It is recommended that the width of the crossing point is increased to 3m.	Problem and recommendation accepted. Width of crossing point increased to 3.15m to prevent the 0.45m² tactile paving slabs from needing to be cut. Please see the drawing extract below. 		
3.4	LOCATION: Ormskirk Road SUMMARY: Drop at back of shared use route may be a potential slip/fall hazard for pedestrians or cyclists. At the back of some of the sections of the shared use route there is a 1 in 3 slope. The lack of a flat buffer between the shared use route and the slope may lead to slip and fall type injuries, particularly during hours of darkness if users are unable to identify the slope.	It is recommended that a flat verge area should be provided between the back of the shared use route and the start of the slope; a minimum of 0.5m should be provided or measures installed to identify the back edge of the shared use route, such as a suitable fence.	Problem and recommendation accepted. Internal site layout has since been updated. No down slopes proposed.		

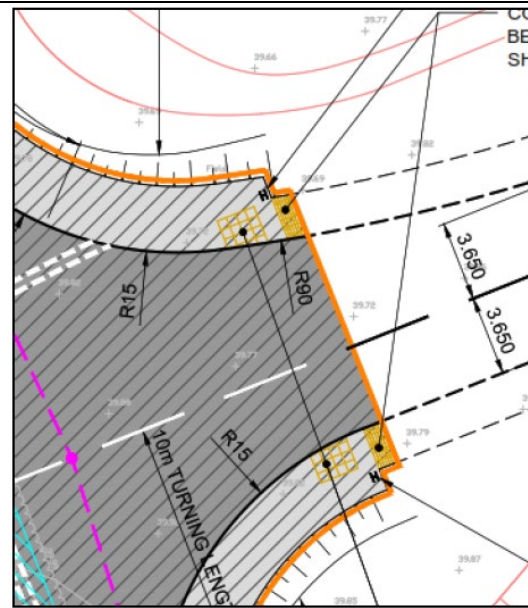
3.5

LOCATION: Site access

SUMMARY: Risk of cyclists being hit and injured by vehicles.

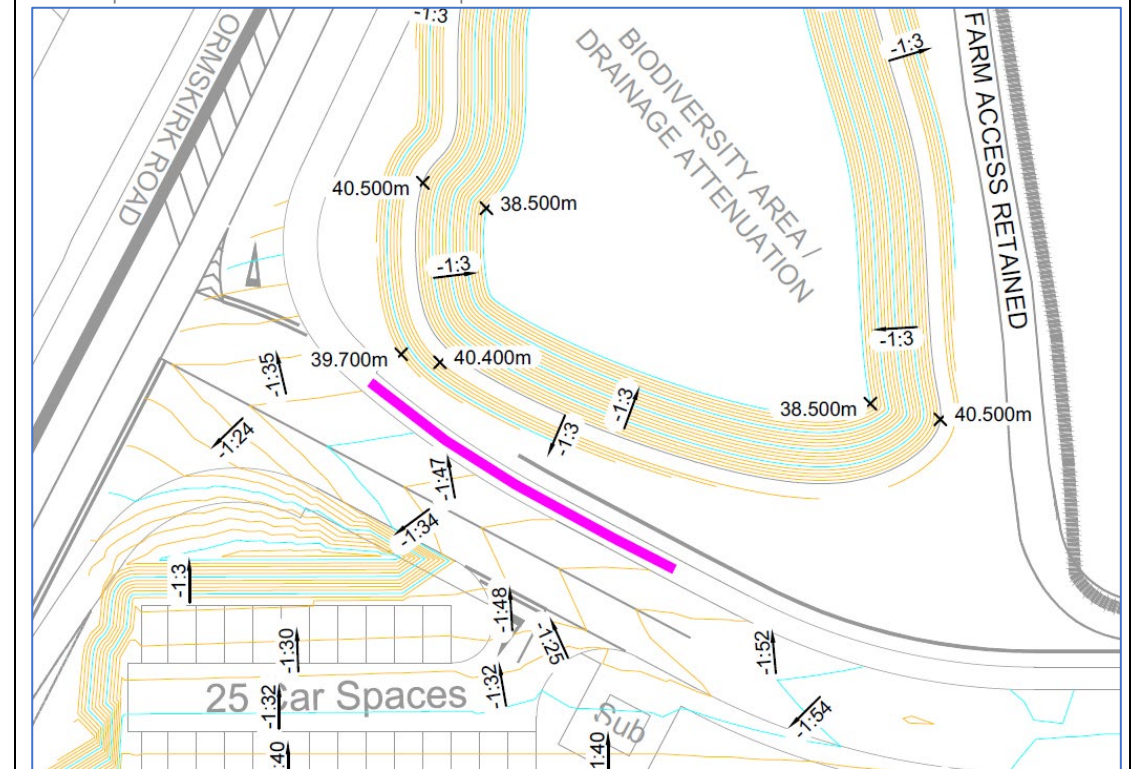
The shared footway/cycleway does not extend into the development with the facility starting/terminating at the junction. Cyclists who rejoin the carriageway at the crossing point may be vulnerable to being hit by vehicles turning into the junction. In particular, by left turning vehicles whose drivers are likely to be concentrating on looking to the right towards vehicles turning off Ormskirk Road as they need to give way to them.

The start of the shared facility for cyclists travelling along the development access road towards Ormskirk Road may not be easily identifiable and they may end up missing the start of the facility and have to negotiate the junction instead with the potential of being hit and injured by passing vehicles.



It is recommended that the shared route on both sides of the development access road is extended further into the development away from the potential conflict with manoeuvring vehicles at the junction. Appropriately positioned lengths of dropped kerbs should be provided to allow cyclists to rejoin/leave the carriageway. The start/end of the route should be clearly identifiable. This may include the use of cycle markings (cycle logos, give way lines and arrows). The cycle dismount sign should be replaced with 'cyclists rejoin carriageway' as recommended in LTN 1/20.

Problem accepted. Recommendation partially accepted. The shared use route will be extended into the site on the northern side of the access road, as shown indicatively by the pink line in the markup below. Dropped kerbs, a short section of carriageway cycle lane markings, a cycle symbol and signage will be provided to allow cyclists to rejoin the carriageway. These works will be carried out on private land and will not form part of the S278 extents. The shared use route cannot be extended into the site on the southern side of the access due to internal site constraints (a 1:3 embankment from the car parking spaces) but a short section of carriageway cycle lane markings and a cycle symbol will be added to the westbound lane and dropped kerbs will be added on the southern side of the road to enable cyclists exiting the development to join the shared use route. These works will also be carried out on private land and will not form part of the S278 extents.

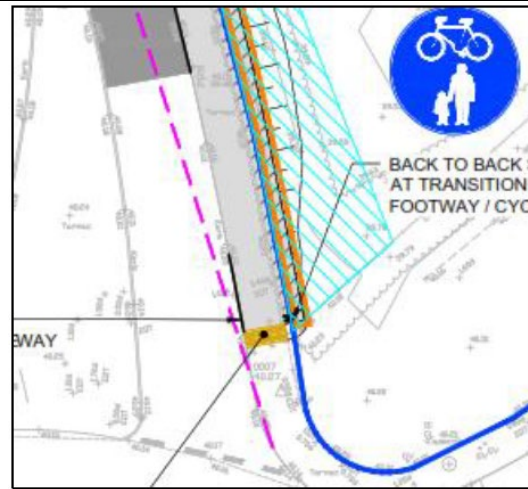


3.6

LOCATION: Southern termination of shared route

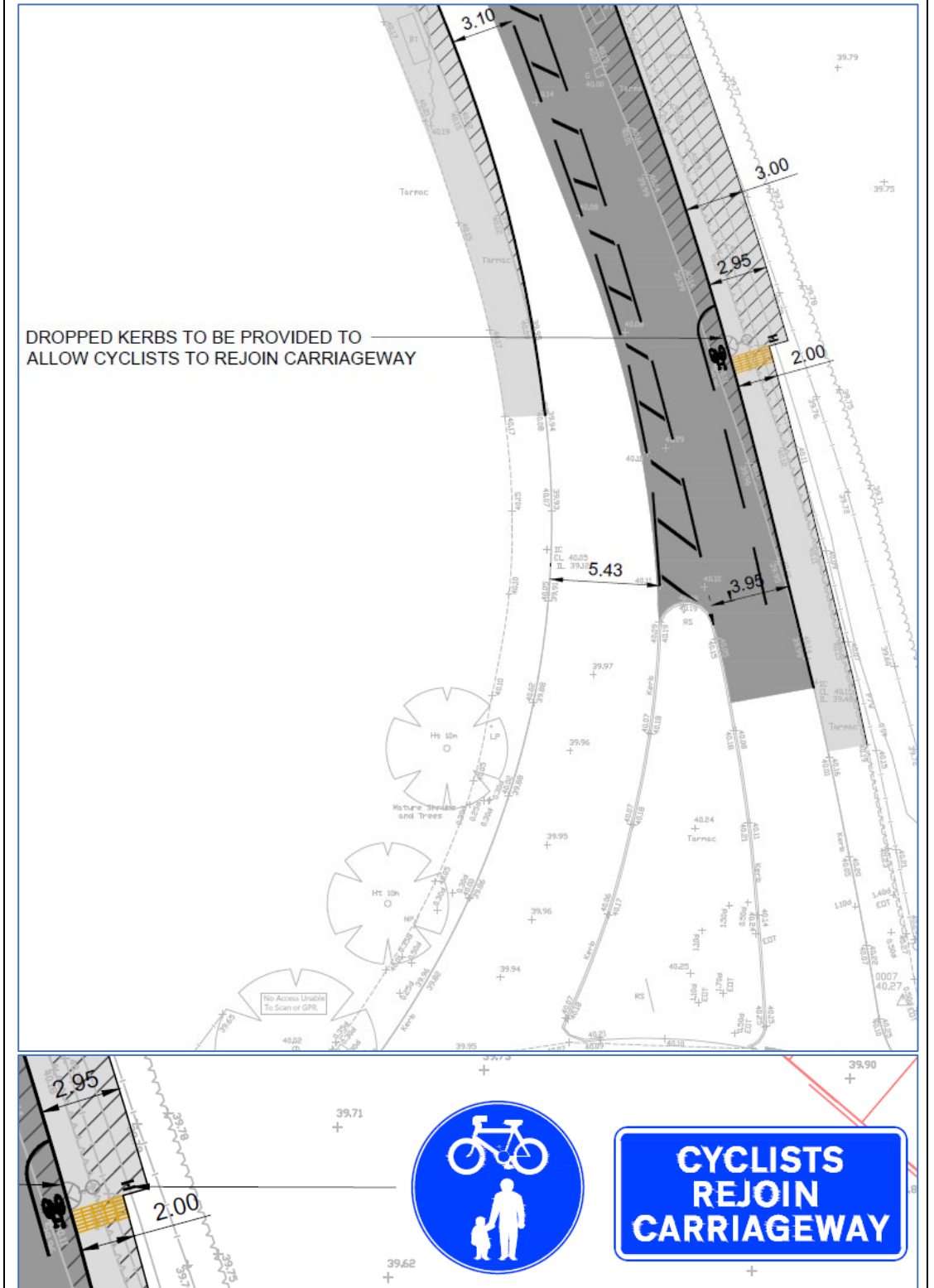
SUMMARY: Risk of cyclists being hit and injured by vehicles.

The width of the approach to the roundabout is a wide single lane and cyclists rejoining the carriageway at this location may be vulnerable to being struck by overtaking vehicles. Cyclists may also find it difficult to position themselves correctly at the roundabout in relation to which exit they are travelling to, particularly during peak periods or when vehicles are queuing back from the junction.



It is recommended that the end of the route is relocated further north to enable cyclists to position themselves in the correct position prior to the junction. It may also be appropriate to highlight to drivers that cyclists are returning to the carriageway by providing a short length of on-carriageway cycle lane markings. The cycle dismount sign should be replaced with 'cyclists rejoin carriageway' as recommended in LTN 1/20.

Problem and recommendation accepted. End of route to be relocated approximately 30m north from current proposed location to allow cyclists to rejoin the carriageway by means of a short length of on-carriageway cycle lane markings before the splitter island. The signage has also been amended as per the auditors' recommendation. Please see the drawing extracts below.



3.7

LOCATION: Ormskirk Road roundabout

SUMMARY: Risk of cyclists being hit and injured by vehicles.

There is no connectivity for cyclists travelling northbound along Ormskirk Road from the roundabout to access the shared use facility on the eastern side. The lack of connectivity may lead to cyclists remaining on the carriageway with the risk of being hit and injured by vehicles overtaking them. Cyclists turning right into the development may be particularly vulnerable when turning right into the access.

It is recommended that a suitable location to enable northbound cyclists to join the shared use route should be provided. It may be appropriate to provide a short length of shared use route on the western side and increase the size of the proposed pedestrian refuge island so that it is suitable for cyclists to use.

Disagree. Prime Transport Planning's Transport Assessment for the development (Job Number P20066; dated May 2022) states in par 6.7.2 (copied below) that the development will generate three trips in each peak as bus passengers, and bicycle and walking trips will both account for a combined two trips in each peak. The small amount of cyclists travelling northbound who wish to access the development can use the ghost island right turn lane. Forward visibility to these cyclists will be good due to the geometry of the road. A reduced lane width through the proposed island south of the access will also assist them as they will be less likely to be overtaken (see item 3.9 of this Designer's Response below). Cyclists travelling northbound who do not wish to access the development are likely to stay on the carriageway as the shared use route terminates prior to the traffic signals. We therefore disagree that there is a need for a facility to allow northbound cyclists to join the shared use route. Such a short length of share route on the western side of the island might also cause confusion and create a safety issue for cyclists and drivers, with northbound cyclists rejoining the carriageway again at the end of the short length of route when drivers do not expect them to do so.

6.7

Multimodal Trip Generation

6.7.1

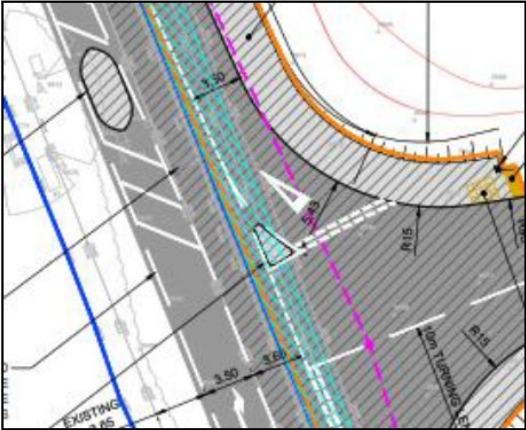
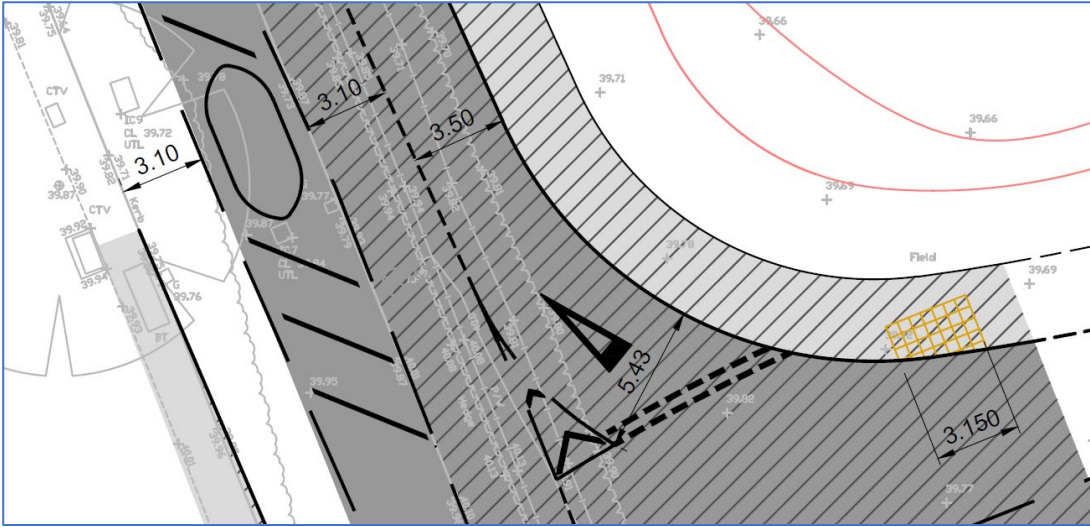
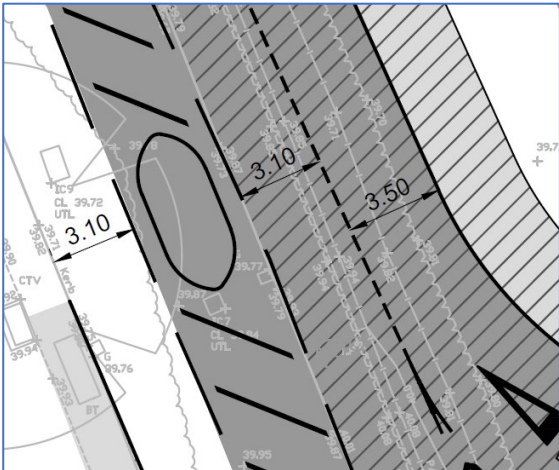
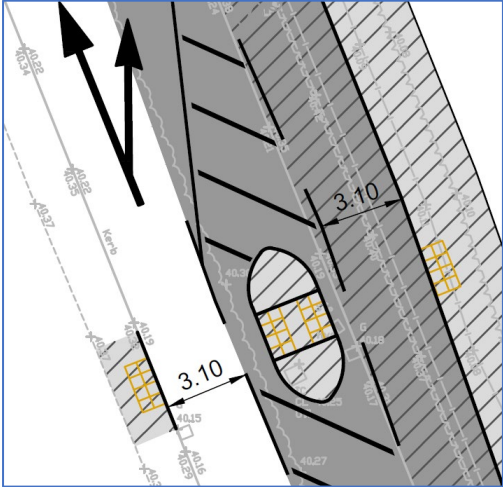
The number of non-car trips has been forecast using 2011 census Method of Trave to Work (MTW) data for the local mid layer super output (MSOA) area Knowsley 005 (E02001331) as a workplace destination. Factors have been derived by dividing the TRICS car driver trips by the census equivalent, with these factors (0.0025 AM and 0.0024 PM) applied to the other census travel modes to forecast the site’s likely modal split. A summary of these multimodal trips is shown in Table 6.13 below.

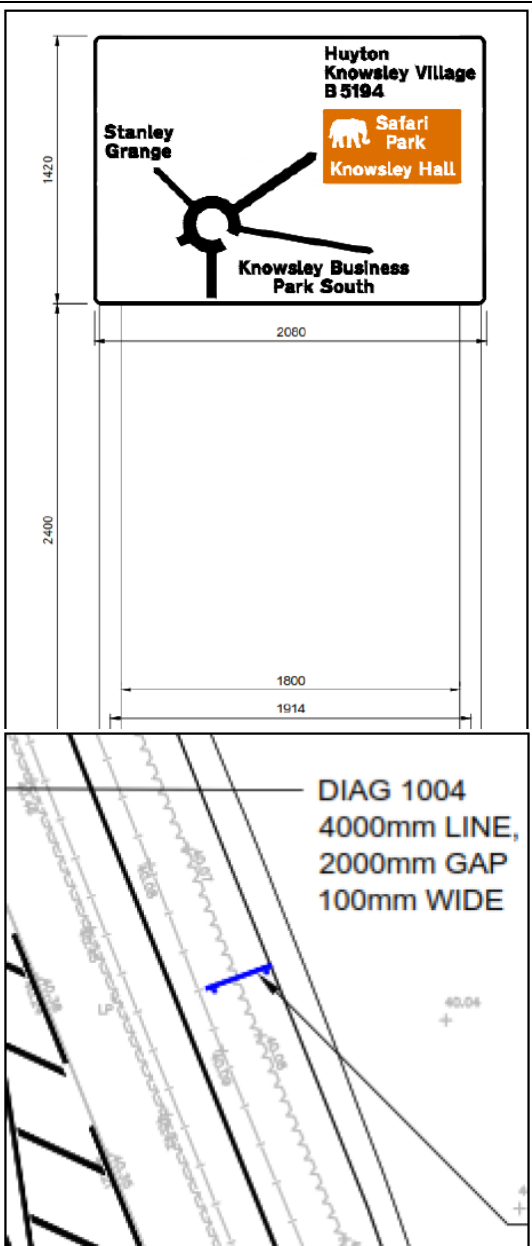
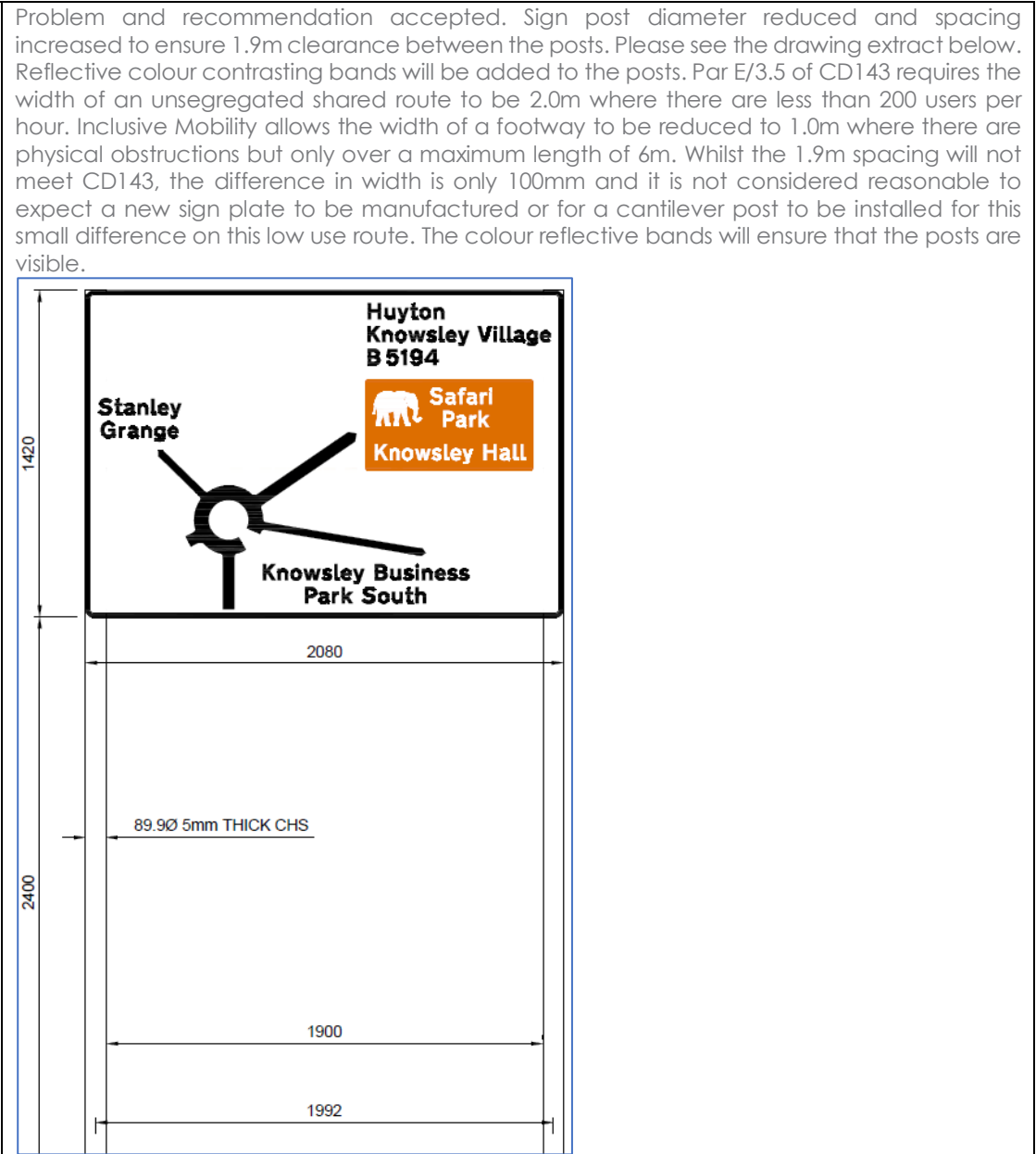
Table 6.13: Forecast Multimodal Person Trips

Method	Census Trips	Modal Split	AM Trips	PM Trips
Driving a car or van	10760	77.6%	27	26
Passenger in a car or van	1139	8.2%	3	3
Bus, minibus or coach	1110	8.0%	3	3
On foot	566	4.1%	1	1
Bicycle	283	2.0%	1	1
Total travel to work	13858	100.0%	35	34
Factors			0.0025	0.0024
HGVs	-	-	10	5
Total Trips	-	-	45	39

6.7.2

The above suggests that the proposed development will generate 45 and 39 total person trips in the AM and PM peak hour respectively. Following driving being the most popular mode, 3 trips in each peak will be as car/van passengers, while 3 trips in each peak will be as bus passengers. Bicycle and walking trips will both account for a combined 2 trips in each peak. It is hoped that the Travel Plan, produced alongside this TA, will help to increase the use of the non-car driver modes.

3.8	LOCATION: Site Access SUMMARY: Drivers striking kerb lines of splitter island may lead to loss of control type collisions. The splitter island segregating the through lane and the auxiliary lane is located close to the edge of the running lane and is likely to be at risk of being hit by passing vehicles. This may lead to kerb strikes and tyre damage as a result, which may lead to tyre blow-outs and loss of control type collisions elsewhere on the highway network.		It is recommended that the splitter island should be setback a minimum of 1m from the edge of the running lane.	Problem accepted. Alternative solution suggested. Island to be defined by road markings as a setback would make a physical island too small to allow sufficient clearances to its bollard. Please see the drawing extract below.	
3.9	LOCATION: Site Access SUMMARY: Cycle to vehicle collisions, involving vehicle overtaking manoeuvres. The traffic lane widths through the ghost island junction, passed the pedestrian refuge island and traffic island are 3.65m wide. Gaps of 3.1 to 3.9 metres are the least satisfactory from a cyclist's perspective, as a driver may perceive that the carriageway is wide enough to overtake a cyclist through the refuge/traffic island, which may result in a cyclist being squeezed and hit.		It is recommended that lane widths between 3.1m and 3.9m should be avoided, to safeguard cyclists at gaps. It is acknowledged that swept paths may require that the traffic lanes through the junction are wider than desirable for cycle safety, therefore it may be appropriate to visually narrow the lane widths by widening hatched markings.	Problem and recommendation accepted. Lane widths amended accordingly. Please see the drawing extracts below showing the lane widths through the northern and southern islands.	 

3.10	LOCATION: Relocated directional sign SUMMARY: Sign posts - obstruction and a potential hazard for cyclists and pedestrians. The spacing between the posts for the relocated directional sign will reduce the effective width of the shared use width and may pose as a hazard for users, particularly during hours of darkness.		It is recommended that the sign assembly is redesigned to prevent the sign posts obstructing the route. It is also recommended that reflective colour contrasting bands are added to the post if they are located within the route.	Problem and recommendation accepted. Sign post diameter reduced and spacing increased to ensure 1.9m clearance between the posts. Please see the drawing extract below. Reflective colour contrasting bands will be added to the posts. Par E/3.5 of CD143 requires the width of an unsegregated shared route to be 2.0m where there are less than 200 users per hour. Inclusive Mobility allows the width of a footway to be reduced to 1.0m where there are physical obstructions but only over a maximum length of 6m. Whilst the 1.9m spacing will not meet CD143, the difference in width is only 100mm and it is not considered reasonable to expect a new sign plate to be manufactured or for a cantilever post to be installed for this small difference on this low use route. The colour reflective bands will ensure that the posts are visible. 
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6 DESIGN ORGANISATION AND OVERSEEING ORGANISATION STATEMENTS

6.1.1 The following statements should be signed by the design organisation and the Overseeing Organisation.

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:	
Position:	
Signed:	
Organisation:	
Date:	

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:	
Position:	
Signed:	
Organisation:	
Date:	

APPENDIX A – AUDIT KEY PLAN

