
Project:	A34 Sprint - Walsall to Birmingham	Job No:	60599248
Subject:	A34 Lancaster Circus to Walsall Town Centre Stage 2 Road Safety Audit - Designer's Response		
Prepared by:		Date:	29/10/2020
Checked by:		Date:	29/10/2020
Approved by:		Date:	30/10/2020

Introduction

The following technical note is produced to document the Designer's Response to each issue raised within the Stage 2 Road Safety Audit (RSA) of the proposed A34 Sprint highway improvements works between Birmingham city centre and Walsall town centre.

The Stage 2 RSA was carried out by AECOM in January 2020. The Designer's Response should be read in conjunction with this report.

The technical note indicates each of the concerns identified by the safety auditors together with the recommendation made to address the problem. The Designer's Response to the recommendations has been shown in *italics*.

1.0 MATTERS ARISING FROM PREVIOUS STAGE 1 ROAD SAFETY AUDITS

1.1 Ablewell Street Stage 1 Road Safety Audit: Problem 2

Drawing: 60561678-SHT-20-C-0015B

Location: Private vehicle access on Upper Rushall Street

Summary: Vehicle access may be blocked by proposed stop line which could result in poor manoeuvres which may lead to side swipe collisions.

The scheme proposes to change the operation of Upper Rushall Street from a one-way carriageway to two-way and to maintain the signalised junction with Town Hill. The proposed stop line for vehicles travelling southbound along Upper Rushall Street appears to be positioned in front of the existing access which will cause problems for vehicles entering and exiting. If the access is blocked, vehicles may undertake poor manoeuvres leading to side swipe collisions.

Recommendation:

Relocate the stop line away from the private access and include keep clear markings in front of the access.

Original Designers Response:

Part Accepted - This is an access to private land with very low levels of traffic, however consideration to moving the Stop line will be made during detailed design, subject to the swept path of large vehicles exiting Town Hill and the suitable operation of the traffic signal junction.

Stage 2 Comments:

The stop line is still positioned in front of the access and therefore this issue remains outstanding.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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As part of design refinement, the kerbing of the junction of Upper Rushall Street and Town Hill has been adjusted to allow the southbound stop line on Upper Rushall Street to be moved slightly south, away from the private car park entrance.

Client Organisation Comments

Client agrees with the proposed Design changes, mitigating risks related to this issue.

1.2 Ablewell Street Stage 1 Road Safety Audit: Problem 3

Drawing: 60561678-SHT-20-C-0015B

Location: Upper Rushall Street

Summary: High speeds along route may result in shunt type collisions due to sudden braking.

During the site inspection, the Audit Team observed vehicles travelling at higher than appropriate speeds as they exited Upper Rushall Street and turned onto Ablewell Street. As the proposals increase the number of potential turn manoeuvres at the junction, if the vehicular speeds continue to be higher than appropriate through the junction, sudden braking may be experienced, increasing the risk of shunt type collisions.

Recommendation:

Provide traffic calming measures on the approach to the signalised junction.

Original Designers Response:

Accepted - The operation of the junction will be reviewed with Walsall Council and should traffic calming measures be required on Upper Rushall Street, their provision will be considered.

Stage 2 Comments:

No traffic calming provisions have been provided within the detail design of the scheme and therefore this still needs to be considered to ensure vehicles do not exceed the legal speed limit through the junction resulting in sudden braking causing shunt type collisions.

Design Organisation Response	<input type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input checked="" type="checkbox"/> Rejected
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The design of this junction has been reviewed with Walsall's Road Safety team and speeding has not been identified as an issue. Additionally, it is considered that while the present junction configuration allows unopposed right turn manoeuvres into Ablewell Street, the introduction of two-way traffic on Upper Rushall Street will make northbound right-turning traffic more cautious on their approach to the junction.

Client Organisation Comments

Client agrees with the Designer's response and rejection of the RSA recommendations.

1.3 Ablewell Street Stage 1 Road Safety Audit: Problem 4

Drawing: 60561678-SHT-20-C-0015B

Location: Town Hill

Summary: Lack of cycle facilities increasing the likelihood of cyclist's injuries or collisions.

The existing cycle lane along Town Hill has not been shown in the proposed scheme. This may lead to vehicles passing too closely to the cyclists, without the guidance of the cycle lane, which may result in cyclists being struck and falling from their bicycles.

Recommendation:
Retain existing cycle lane.

Original Designers Response:

Accepted - The existing cycle lane feeder into the Advanced Stop Line for cyclists will be retained.

Stage 2 Comments:

Although the recommendation was accepted by the designers, the existing cycle lane feeder has not been shown on the drawings provided to the Audit Team and therefore the issue and recommendation remains.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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It is the intention that the existing feeder road marking is retained with the currently proposed layout. This will be clarified on the Construction Issue drawings.

Client Organisation Comments

Client agrees with the Designer's response. Construction Issue revision of the drawings is to present existing feeder road markings alongside of the proposed layout.

1.4 Ablewell Street Stage 1 Road Safety Audit: Problem 5

Drawing: 60561678-SHT-20-C-0015B

Location: Tantara Street

Summary: A parking bay covers the pedestrian crossing on Tantara Street which may cause injury to NMs, especially those who are visually impaired and are unaware of the upcoming obstruction.

The give way markings on Tantara Street are to be realigned as part of the scheme; The Audit Team observed on site that an existing parking bay covers the existing pedestrian crossing. If a vehicle parks across the uncontrolled crossing point pedestrians will have to choose an alternative place to cross, potentially in unsafe locations increasing the likelihood of being struck by approaching vehicles. Additionally, if visually impaired users are guided into the parked cars, injuries will occur.

Recommendation:

Move parking bay to ensure it ends before the crossing point.

Original Designers Response:

Part Accepted - The Tantara Street Give Way markings are no longer part of the scheme and therefore no works are to be carried out in this side road. However, agree that the last parking bay should be removed to avoid blocking the uncontrolled pedestrian crossing .

Stage 2 Comments:

Although the recommendation was part accepted by the designers, the end parking bay that covers the pedestrian crossing has not been removed from the design drawings and therefore this issue remains outstanding.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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The latest drawing shows the last parking bay removed.

Client Organisation Comments

No further comments from the Client. Construction Issue drawing shows the last parking bay removed.

1.5 Ablewell Street Stage 1 Road Safety Audit: Problem 11

Drawing: 60561678-SHT-20-C-0015B

Location: Approach to Upper Rushall Street / Bridge Street junction

Summary: Unclear junction priority leading to drivers undertaking sudden or sharp turn manoeuvres resulting in collisions with vehicles or NMUs.

The proposals allow for vehicles to now turn left/right on to Upper Rushall Street from the Bridge Street / Ablewell Street junction, consequently banning the right turn on to Town Hill from Ablewell Street. However, no provision has been shown within the proposals to indicate this change to oncoming vehicles. This may confuse motorists when they approach the junction with Town Hill and cause sudden braking or sharp turn manoeuvres resulting in shunt or side swipe collisions with other vehicles or NMUs.

Recommendation:

Install advanced warning signs to ensure drivers are aware that they can turn right on to Upper Rushall Street and there is no through route on to Town Hill.

Original Designers Response:

Accepted - Traffic sign TSRGD ref 7014 should be provided to indicate to drivers "New Road Layout Ahead".

Stage 2 Comments:

Proposed signing drawing "60599248-ACM-1250-0000-DR-TR-00002 Rev P02" does not show advanced warning signs for the approaches to the junction and therefore the issue and

recommendation remains.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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This signage will be shown in appropriate locations on the Construction Issue drawings.

Client Organisation Comments

Client agrees with Designer's response. No further comments.

1.6 Ablewell Street Stage 1 Road Safety Audit: Problem 14

Drawing: 60561678-SHT-20-C-0015B

Location: Lower Rushall Street

Summary: Pedestrians now have two lanes of live traffic to cross at the junction with Lower Rushall Street, which may lead to misjudged gap times and result in collisions with motorists.

The existing uncontrolled pedestrian crossing across Lower Rushall Street means NMUs only cross one lane of live traffic in one direction before reaching the central island. The proposals mean NMUs will now have to cross two lanes of live traffic running in opposite directions, increasing their exposure to oncoming vehicles. This may cause pedestrians to misjudge the gap times between vehicles and increases the likelihood of being struck by an approaching vehicle. The Audit Team observed high speed through the junction and found it difficult themselves to cross one lane of traffic, therefore attempting to cross two lanes will heighten the risk of pedestrian injuries.

Recommendation:

Install a pedestrian phase into the signal stages of the junction.

Original Designers Response:

Part Accepted - The uncontrolled crossings of Lower Rushall Street will be staggered in the detailed design. They are both also within the maximum permitted crossing length. However, traffic signal control will be discussed with the local highway authority during detailed design, as this could be added but only with significant detriment to the operation of the junction.

Stage 2 Comments:

The proposals change the layout of the existing crossing from a straight over crossing to a staggered crossing along the give way from Warewell Street. This may confuse partially sighted road users and cause them to cross in unsafe locations leading to collisions with oncoming vehicles. It is recommended that the pedestrian crossing is signalised. However, if this is not possible, pedestrian guard railing should be installed to guide pedestrians through the crossing.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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Following discussion with Walsall's Road Safety team, the Lower Rushall Street arm of the junction has been redesigned to provide a controlled crossing for pedestrians.

Client Organisation Comments

Client agrees with Designer’s response and proposed Design changes. No further comments.

1.7 Ablewell Street Stage 1 Road Safety Audit: Problem 16

Drawing: 60561678-SHT-20-C-0015B

Location: Bridge Street / Lower Rushall Street

Summary: Current over run from vehicles turning left on to Lower Rushall Street may result in pedestrians waiting to cross the road being struck by and turning vehicles or cause side swipe collisions with vehicles waiting at the proposed stop line.

The Audit Team observed evidence of overrun from vehicles turning left from Bridge Street on to Lower Rushall Street. The new proposals now incorporate a stop line on Lower Rushall Street which may result in side swipes as larger vehicles negotiate the tight left turn as it has not been shown on the design where the stop line will be located. Similarly, the pedestrian crossing will not be relocated and from site inspection it is currently being overrun by vehicles which could lead to serious injury if a pedestrian is waiting to cross the road.

Recommendation:

Relocate the pedestrian crossing and ensure that the stop line on Lower Rushall Street is set back far enough to allow large vehicles to turn left from Bridge Street.

Original Designers Response:

Part Accepted - This is an existing issue and as the kerbside and room available for this manoeuvre is not affected by the proposals, no improvements are proposed. The local highway authority might consider Trief kerbing / bell bollards to further protect this crossing.

Stage 2 Comments:

Within the detail design, no considerations have been made to improve the situation and therefore this issue remains outstanding.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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Following discussion with Walsall’s Road Safety team, the Lower Rushall Street arm of the junction has been redesigned to push the stop line further back and to provide a controlled crossing for pedestrians, with the crossing point moved as far north as possible.

Client Organisation Comments

Client agrees with Designer’s response and Design changes.

1.8 Beacon Road Stage 1 Road Safety Audit: Problem 2

Drawing: 60599248-ACM-0100-P&C-SK-TR-000026

Location: U-Turn in Central Reserve

Summary: HGVs will over hang if they have to wait to give way before they u-turn which may result in collisions.

The proposals build out the existing kerb line which reduced the area of the existing u-turn facility opposite Lodge Road. A swept path has been undertaken which shows HGVs can make the manoeuvre without mounting the kerb by over running on to the hatching. If a HGV did take the correct path shown in the drawing, it will overrun the northern kerb line resulting in damage. Similarly, if a HGV were to wait to give way, it would over hang on to the carriageway which may result in shunt type collisions.

Recommendation:

It is recommended that the u-turn facility is modified to ensure all manoeuvres can be safely and efficiently undertaken.

Original Designers Response:

Rejected - The road markings mimic the existing provision of this gap as a u-turn, not a direct right turn into Beacon Road / Lodge Road. The majority of vehicles making this u-turn are either cars or vans and the swept paths shown on the drawing indicates that the manoeuvre is achievable. The largest vehicles, including coaches from the rugby club, will have to start their manoeuvre from the single general traffic lane and utilise the hatching to make their manoeuvre as the driver sees fit.

Stage 2 Comments:

The Audit Team acknowledge the Designer's Response; however, no swept path analysis has been provided as part of this Stage 2 Road Safety Audit. The alignment of the turn facility still appears tight on the Detailed Design drawings provided for review. It is recommended that swept path analysis drawings are provided to the Audit Team for review.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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Vehicle swept paths to be provided to the Audit team.

Client Organisation Comments

Client agrees with Designer's response, and swept paths are to be provided to the Audit Team.

1.9 Perry Barr to Scott Arms Stage 1 Road Safety Audit: Problem 2

Drawing: 60599248-ACM-0000-P&C-DR-TR-000014 - 21

Location: Scheme extents

Summary: No vegetation has been proposed along the central reserve which may encourage pedestrians to cross in unsafe locations, increasing their risk of exposure to oncoming vehicles which may result in collisions between vehicles and pedestrians.

The proposals include landscaping, but it hasn't been defined what landscaping will be undertaken. The existing landscaping is a grass central reserve which does not prevent pedestrians from crossing the dual carriageway at unsafe locations (this was observed on site).

This will continue, and pedestrians will now have three lanes of live traffic to cross either side of the reserve increasing their exposure and likelihood of colliding with a vehicle, resulting in injury.

Recommendation:

Plant vegetation along central reserve to dissuade pedestrians from crossing at undesignated locations.

Original Designers Response:

Rejected - Apart from discrete trees, which do not act as a crossing deterrent, there is currently no vegetation planted in the central reservation to deter pedestrians from crossing away from designated crossing points. Indeed, Birmingham recently removed all the low-level vegetation that used to grow in the central reserve between Cliveden Avenue and Perry Avenue. Consequently, no new provision for pedestrian deterrent vegetation has been made.

Stage 2 Comments:

Only grass has been proposed in the central reserve. The Audit Team are concerned that no deterrent has been incorporated into the design to reduce the likelihood of unsafe crossing locations. It is recommended that measures outlined within the previous Stage 1 Road Safety Audit are reviewed and incorporated into the design.

Design Organisation Response	<input type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input checked="" type="checkbox"/> Rejected
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The design team have discussed this matter with Birmingham City Council and vegetation to deter pedestrians crossing will not be provided. Historically planting here has not deterred informal crossing points from developing away from the numerous controlled crossings.

Client Organisation Comments

Client agrees with Designer's response. As historical data suggests that vegetation did not deterred informal crossings in the past, the Client is in agreement not to provide any additional vegetation at this location. If vegetation was to be provided, it is anticipated that the newly planted vegetation would not provide enough of a barrier and informal crossing points would be created/established before the vegetation has had chance to mature and create a sufficient barrier.

1.10 Perry Barr to Scott Arms Stage 1 Road Safety Audit: Problem 4

Drawing: 60599248-ACM-0000-P&C-DR-TR-000014 - 21

Location: Scheme extents

Summary: Narrow lane widths throughout may result in graze type collisions.

Throughout the scheme, kerb lines have been amended to allow for a new bus lane. However, the drawings do not show the width of these lanes and they appear to be narrow (particularly near Sundial Lane and Jayshaw Avenue). This may result in possible graze type collisions if a larger vehicle and bus pass side by side causing damage or injury to passengers on board.

Recommendation:

It is recommended that lane widths are increased to ensure larger vehicles and buses can safely drive side by side.

Original Designers Response:

Rejected - The minimum lane width for general traffic is 3.0m, which is deemed sufficient to avoid collisions on a largely straight road.

Stage 2 Comments:

No swept path analysis has been undertaken as part of the detail design and therefore it cannot be shown whether a Sprint bus can pass safely alongside larger good vehicles and articulated vehicles when travelling along the A34, particularly where the lanes narrow. From the signing drawings provided, cyclists will be using the bus lane and a bus may try to pass a cyclist and overhang the carriageway resulting in side swipe collisions or trapping the cyclist against the kerb.

Design Organisation Response	<input type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input checked="" type="checkbox"/> Rejected
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Lane widths have been reduced to a minimum of 3.0m at pinch points, particularly where there is a need to retain residential parking. This width is deemed sufficient to avoid collisions on a largely straight road. With the introduction of Operation Close Pass there is a requirement of a safe passing distance from cyclists of 1.5m and buses in the bus lane will therefore be required to move over into the adjacent traffic lane to safely pass a cyclist.

Client Organisation Comments

Client agrees with Designer's response. No further comments.

1.11 Perry Barr to Scott Arms Stage 1 Road Safety Audit: Problem 5

Drawing: 60599248-ACM-0000-P&C-DR-TR-000020

Location: Walsall Road

Summary: Informal crossing point may encourage pedestrians to cross the carriageway unsafely increasing their risk of being struck by a vehicle resulting in injury.

During the site inspection, an informal crossing point was located, and it was observed that pedestrians use this to cross the carriageway. The proposals increase the number of lanes on the carriageway to three lanes on either side which puts pedestrians more at risk of being struck by a vehicle resulting in serious injury.

Recommendation:

It is recommended that the informal crossing is closed and landscaped with consistency as the rest of the corridor.

Original Designers Response:

Accepted - There are many informal crossing points in the central reserve. We agree that where the carriageway is further widened, then these should be removed and landscaped. This will be

shown on the next revision of the detailed design drawings.

Stage 2 Comments:

No landscaping has been proposed towards the sections close to Perry Barr where some informal crossing points are located. Therefore, this issue remains outstanding.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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The latest drawings show the paving slabs at these informal crossing points removed and replaced with grass.

Client Organisation Comments

Client agrees with Designer’s response and incorporated design changes.

1.12 Perry Barr to Scott Arms Stage 1 Road Safety Audit: Problem 6

Drawing: 60599248-ACM-0000-P&C-DR-TR-000014 - 21

Location: Scheme extents

Summary: Uncontrolled crossing points at signalised junctions throughout the scheme put pedestrians at risk of being struck by a vehicle which could result in serious injury.

There are several large signalised junctions along the A34 with uncontrolled crossing points. The Audit Team found crossing the road difficult at some points with gaps being very limited between vehicles. This will continue to be difficult for pedestrians, especially those with wheelchairs or pushchairs and puts them at risk of being struck by an oncoming vehicle. One particular concern is that pedestrians cross behind the traffic signals so may be unaware of the traffic signal stage when they cross.

Recommendation:

Incorporate pedestrian phases to the traffic signal staging at all uncontrolled crossing locations at junctions along the A34.

Original Designers Response:

Rejected - Existing uncontrolled crossing facilities at junctions, or arms of junctions, where kerb line changes are not proposed, are not being upgraded as part of this scheme.

Stage 2 Comments:

The Audit Team have acknowledged the Designers Response; however, the Audit Team have concerns that there may be an increased number of pedestrian movements, particularly around Alexander Stadium, which may heighten the risk of pedestrians crossing when it is not safe resulting in them being struck by an oncoming vehicle. Therefore, this issue remains.

Design Organisation Response	<input type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input checked="" type="checkbox"/> Rejected
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Upgrade of these junctions to provide additional controlled pedestrian crossings is beyond the scope of the Sprint project. During events and the Commonwealth Games in particular, the increased numbers of pedestrians are likely to be guided by event marshals to safe crossing

points as part of the overall traffic management plan. These concerns have been passed on to Birmingham City Council for consideration in any future upgrade schemes for these junctions.

Client Organisation Comments

Client agrees with Designer’s response. No further comments.

1.13 Perry Barr to Scott Arms Stage 1 Road Safety Audit: Problem 7

Drawing: 60599248-ACM-0000-P&C-DR-TR-000017

Location: Shops adjacent to Tower Hill

Summary: Unclear guidance for pedestrians may result in collisions with parking vehicles.

There is a row of shops located within the western verge of Tower Hill with a dedicated parking area for vehicles. The pedestrian route terminates either side of the shops with no guidance for pedestrians to travel through the parking area safely. If pedestrians cannot efficiently travel through this section of the route, the risk of conflicts and collisions occurring with vehicles manoeuvring within the parking area will be increased. This issue will be particularly prevalent to visually impaired users.

Recommendation:

It is recommended that a formalised pedestrian route is installed.

Original Designers Response:

Rejected - There are no kerb line changes proposed alongside the shops south of the Badshah Palace and therefore this existing issue is not addressed as part of this scheme.

Stage 2 Comments:

Although no kerb line changes have been made, this area will see an increase in pedestrians due to its close proximity to Alexander Stadium where majority of the Commonwealth Games will be held. The shops are also located close to proposed Sprint stops which will be used by pedestrians, including vulnerable and partially sighted pedestrians. If they are not familiar with the area, they may be struck by oncoming vehicles accessing/ egressing from the shops. Therefore, this issue remains outstanding.

Design Organisation Response	<input type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input checked="" type="checkbox"/> Rejected
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This long-standing issue has been discussed with Birmingham City Council. The existing footway outside the shops is wholly in private land, so it is not feasible to formally direct pedestrians to it. If a new footway was constructed on highway land, it would make the adjacent service road too narrow and result in a loss of parking. Upgrade of these facilities will not be undertaken as this is outside the scope of the Sprint project. Additionally, as noted for Problem 6, during the Commonwealth Games the anticipated increased numbers of pedestrians are likely to be guided by event marshals to safe crossing points and so this particular feature is unlikely to be an issue.

Client Organisation Comments

Client agrees with Designer’s response. No further comments.

2.0 MATTERS ARISING FROM THIS STAGE 2 ROAD SAFETY AUDIT

2.1 Problem 1

Drawing: 60599248-ACM-0110-0000-DR-TR-00001-31

Location: Scheme extents

Summary: Lack of high friction surfacing (HFS) may result in overrun at junctions causing head on collisions with other vehicles.

New surfacing has been proposed throughout the route but not High Friction Surfacing (HFS). If HFS is not located on approach to junctions and pedestrian crossings, vehicles may fail to brake in time resulting in overshoot at the junction. This may result in head on or rear end collisions with other vehicles or crossing pedestrians resulting in serious or fatal injury.

Recommendation:

It is recommended that HFS or higher PSV is laid through the scheme at approaches to junctions and pedestrian crossings.

Design Organisation Response	<input type="checkbox"/> Accepted	<input checked="" type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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An assessment of the minimum PSV requirements has been undertaken by the pavement engineer for the areas where we are resurfacing the carriageway and HFS proposed as appropriate on the latest drawings.

Client Organisation Comments

Client agrees with the Designer's Response and proposed changes. PSV / HFS application was incorporated into the Construction Issue drawings as appropriate.

2.2 Problem 2

Drawing: 60599248-ACM-0110-0000-DR-TR-00001-31

Location: Scheme extents

Summary: Lack of sign dimensions may result in obstructions for pedestrians and cyclists causing injury.

New signing has been proposed along the route, but no dimensions (mounting heights and offsets) or post sizes of these signs have been provided. Signs can become obstructions for both pedestrians and cyclists and can cause serious injury if they were to hit them. Similarly, signs may overhang the kerb line and become an obstruction for oncoming vehicles, particularly wider vehicles such as HGVs and buses, resulting in damage and possible injury to pedestrians or onboard passengers.

Recommendation:

It is recommended that signs are installed at sufficient offsets from the carriageway with appropriate posts and located away from the centre of non-motorised user routes on the footway so that they do not cause an obstruction.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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A Sign Schedule to accompany the signing drawings outlining dimensions for foundations, posts and mounting heights has been produced. Sign locations are subject to agreement with the Project Manager and installed in accordance with the Specification which outlines clearance from carriageway etc.

Client Organisation Comments

Client agrees with the Designer's Response and proposed changes.

2.3 Problem 3

Drawing: 60599248-ACM-0110-0000-DR-TR-00001-31

Location: Scheme extents

Summary: Lack of information regarding sign illumination may result in poor vehicle manoeuvres and confusion leading to collisions.

New signing has been proposed along the route, but no illumination has been detailed on the signing. Vehicles may fail to read the sign during the hours of darkness resulting in confusion, hesitation and sudden braking which may cause rear end shunt collisions.

Recommendation:

It is recommended that where described in the relevant standard, the appropriate signs are illuminated throughout the scheme.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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A Sign Schedule to accompany the signing drawings outlining illumination requirements has been produced. Standards for signs and their illumination are detailed in the Specification.

Client Organisation Comments

Client agrees with the Designer's Response and proposed changes.

2.4 Problem 4

Drawing: 60599248-ACM-0110-0000-DR-TR-00001-31

Location: Scheme extents

Summary: Drainage low points may result in ponding resulting in loss of control during adverse weather leading to collisions

It was noted that on the section drawings throughout the scheme there are low points on the carriageway. This may result in water ponding within the low point and during adverse weather the water may freeze. This could cause a vehicle to lose control when driving over the patch of ice leading to collisions.

Recommendation:

It is recommended that the level drawings are amended to ensure the carriageway drains efficiently.

Design Organisation Response	<input type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input checked="" type="checkbox"/> Rejected
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We are not aware of any highway drainage issues that have been introduced by our proposed widening / resurfacing works.

Client Organisation Comments

Specific examples of this are requested to be able to understand the concern further. Note that drawing number refers to General Arrangement drawings.

2.5 Problem 5

Drawing: 60599248-ACM-0110-0000-DR-TR-00001-31

Location: Scheme Extents

Summary: Lack of enforcement camera offset information may result in obstructions for pedestrians and cyclists causing injury.

New enforcement cameras have been proposed along the route, but no offsets or post sizes of these cameras have been provided. Enforcement cameras can become obstructions for both pedestrians and cyclists and can cause injuries if they were to hit them. Similarly, the cameras may be positioned too close to the kerb line and be struck by an oncoming vehicle. This issue will be exacerbated for larger vehicles.

Recommendation:

It is recommended that the enforcement cameras are installed at sufficient offsets from the carriageway with appropriate posts and located away from the centre of non-motorised user routes on the footway so that they do not cause an obstruction.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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Exact BLE column locations are subject to agreement with the Project Manager and installed in accordance with the Specification which outlines clearance from carriageway etc.

Client Organisation Comments

Client agrees with the Designer's Response.

2.6 Problem 6

Drawing: 60599248-ACM-0110-0000-DR-TR-00001-31

Location: Scheme Extents

Summary: Poor visibility may result in vehicles using incorrect lanes resulting in side swipe collisions.

New lane designation signing has been proposed along the route to indicate the nearside lane for left turning traffic only and ahead for buses only. Some of these signs have been located close to proposed Sprint stops which may lead oncoming vehicles to miss the sign as it could become obstructed by a waiting bus. This may result in vehicle confusion and late lane changes resulting in side swipe collisions.

Recommendation:

It is recommended that where possible, lane designation signs are repeated within the central median.

Design Organisation Response	<input type="checkbox"/> Accepted	<input checked="" type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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These signs are largely replicating existing signage on the nearside of the carriageway. There are few locations where an offside sign could be provided with enough clearance from traffic, however opportunities for their installation at the main junctions will be considered at the next drawing revision.

Client Organisation Comments

Client agrees with the Designer's response.

2.7 Problem 7

Drawing: 60599248-ACM-0110-0000-DR-TR-00001

Location: Darwall Street

Summary: Increased vehicular movements increasing the risk of conflicts and collisions occurring with pedestrians.

The proposed Sprint bus route is to travel along the pedestrianised Darwall Street, within Walsall town centre, approximately every 10 minutes; however, there are no additional engineering measures proposed to incorporate the increase in vehicular movements along Darwall Street. Due to the increased number of vehicular movements, as a result of the Sprint bus route, there are concerns that pedestrians may become vulnerable, increasing the likelihood of collisions or conflicts occurring between pedestrians and the Sprint buses.

Recommendation:

It is recommended that a formalised pedestrian route is installed.

Design Organisation Response	<input type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected <input checked="" type="checkbox"/> N/A to the Phase 1 scheme
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The use of Darwall Street by the Sprint bus is no longer included in the Phase 1 scheme. This matter will be considered further during the design of Phase 2.

Client Organisation Comments

Client agrees with the Designer's response.

2.8 Problem 8

Drawing: 60599248-ACM-0110-0000-DR-TR-00002

Location: Upper Rushall Street

Summary: Proposed guidance markings may confuse approaching vehicles resulting in confusion and hesitation leading to sudden braking and rear shunt collisions or dangerous manoeuvres.

The scheme proposes to change Upper Rushall Street from one-way to two-way and vehicles turning right from Town Hill are guided using guidance lining. However, this guidance marking may confuse vehicles travelling southbound along Upper Rushall Street. This may result in hesitation and confusion causing sudden braking leading to rear shunt collisions. Similarly, vehicles may undertake dangerous manoeuvres which could result in collisions and serious injury putting both other vehicles and crossing pedestrians at risk.

Recommendation:

It is recommended that the guidance marking is removed, and a centre line is extended past the stop line for vehicles travelling southbound.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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Guidance marking already removed. Centreline extension to be shown on next drawing revision.

Client Organisation Comments

Client agrees with the Designer's response and proposed changes.

2.9 Problem 9

Drawing: 60599248-ACM-0110-0000-DR-TR-00002

Location: Upper Rushall Street

Summary: Lack of adequate drainage may result in ponding during wet weather causing pedestrians to slip and fall leading to serious injury.

The locations of gullies have been shown in the drawings provided to the Audit Team however, during the site inspection, the team observed ponding on the pedestrian crossing located to the north of Upper Rushall Street. During adverse weather, the area may freeze putting pedestrians at risk of slipping which may cause serious injury. Similarly, there is existing upstand on the tactile which may also cause a pedestrian to trip, particularly vulnerable road users, causing serious injury.

Recommendation:

It is recommended that tactile paving is re-laid to ensure an appropriate gradient is achieved to provide adequate run off and a gully is located to the left of the crossing to remove the run off.

Design Organisation Response	<input type="checkbox"/> Accepted <input checked="" type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
<i>Resurfacing works are to be undertaken as this junction and it will be noted on the drawing to ensure that no low spots remain.</i>	
Client Organisation Comments	
Client agrees with the Designer's response and proposed changes.	

2.10 Problem 10

Drawing: 60599248-ACM-0110-0000-DR-TR-00003

Location: Bus stop on Springhill Road (northbound)

Summary: Bus stop located outside the bus lane may result in weaving buses leading to side swipe collisions with oncoming vehicles and cyclists.

The proposals widen the carriageway heading northbound on Springhill Road to incorporate an offside bus lane. An existing bus stop is proposed to remain adjacent to Hill Street but is located outside of the bus lane. This may result in buses weaving in and out of the bus lane and live traffic lane leading to side swipe collisions with oncoming vehicles and cyclists.

Recommendation:

It is recommended that the bus stop is relocated before the start of the bus lane.

Design Organisation Response	<input type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected <input checked="" type="checkbox"/> N/A to the Phase 1 scheme
<i>The works to remove the roundabout and provide a long length of offside bus lane are no longer included in the Phase 1 scheme. The existing non-Sprint bus stop is therefore located before the bus lane in Phase 1. This matter will be considered further during the design of Phase 2.</i>	
Client Organisation Comments	
Client agrees with the Designer's response.	

2.11 Problem 11

Drawing: 60599248-ACM-0110-0000-DR-TR-00005

Location: Birmingham Road approach adjacent to the Broadway

Summary: Lack of stacking capacity may result in excessive queuing leading to rear shunts.

The proposals include a nearside bus lane along Birmingham Road heading northbound up to the Broadway. The bus lane ends around 42m before the junction, reducing the existing stacking capacity for left and ahead movements significantly. During peak periods, the ahead movement in to Walsall is high and therefore by reducing stacking capacity, queues will increase significantly. This may result in rear end shunt collisions as vehicles approach the back of the queue suddenly without warning of the upcoming hazard. Additionally, drivers may enter the bus lane before the end in order to join the back of queuing traffic, leading to buses colliding with traffic changing lanes in front of them without warning.

Recommendation:

It is recommended that the bus lane ends further from the junction to maintain existing stacking capacity.

Design Organisation Response	<input type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
	<input checked="" type="checkbox"/> N/A to the Phase 1 scheme

The works to provide a northbound bus lane up to Broadway are no longer included in the Phase 1 scheme. This matter will be considered further during the design of Phase 2.

Client Organisation Comments

Client agrees with the Designer's response.

2.12 Problem 12

Drawing: 60599248-ACM-0110-0000-DR-TR-00005

Location: Sprint stop (northbound)

Summary: Proposed fencing will stop passengers alighting on to the Sprint bus which may result in pedestrians walking within the carriageway increasing their risk of being struck by a vehicle.

A Sprint stop is proposed on the Birmingham Road heading northbound on the approach to the Broadway. However, fencing has been proposed in front of the bus stop which will prevent passengers alighting and may force them to walk within the carriageway to access and exit the bus. This will increase their risk of being struck by oncoming vehicles which may result in serious or fatal injury.

Recommendation:

It is recommended that the proposed fencing is removed.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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The positioning of the guardrail in front of the northbound Travelodge bus shelter was a mistake on the drawing that has now been corrected.

Client Organisation Comments

Client agrees with the Designer's response and proposed changes.

2.13 Problem 13

Drawing: 60599248-ACM-0110-0000-DR-TR-00006

Location: Birmingham Road (southbound)

Summary: Bus stop located in close proximity to a right turn facility which may result in collisions.

The proposals include new bus stops for the Sprint bus along the corridor. One of Sprint stops is located alongside a right turn facility on to Queens Road. The width of the right turn lane appears narrow which may result in collisions between a vehicle waiting to turn right and an approaching Sprint bus.

Recommendation:

It is recommended that sufficient merging space is provided before the stop line to ensure Sprint buses can move over safely and suitable signing is displayed.

Design Organisation Response	<input type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected <input checked="" type="checkbox"/> N/A to the Phase 1 scheme
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The works to widen the carriageway to provide a northbound bus lane at Queens Road junction are no longer included in the Phase 1 scheme. The Phase 1 scheme has moved the bus stop to the south of the junction. This matter will be considered further during the design of Phase 2.

Client Organisation Comments

Client agrees with the Designer's response.

2.14 Problem 14

Drawing: 60599248-ACM-0110-0000-DR-TR-00006

Location: Birmingham Road (northbound) near Queens Road

Summary: Proposed lining overlaps bus stop markings which may result in confusion for bus drivers leading to sudden braking and cause injury to passengers.

The proposals show the start of a new bus lane before Queens Road travelling northbound along Birmingham Road. However, the guidance marking for running traffic has been proposed over a Sprint bus stop. This may confuse oncoming bus drivers who may fail to stop at first resulting in sudden braking and injury to passengers on board.

Recommendation:

It is recommended that the bus stop is relocated within the bus lane.

Design Organisation Response	<input type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected <input checked="" type="checkbox"/> N/A to the Phase 1 scheme
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The works to widen the carriageway to start a northbound bus lane at this location are no longer included in the Phase 1 scheme. This matter will be considered further during the design of Phase 2.

Client Organisation Comments

Client agrees with the Designer's response.

2.15 Problem 15

Drawing: 60599248-ACM-0110-0000-DR-TR-00008

Location: Access to the Bell Inn

Summary: Incorrect lining may confuse drivers resulting in sudden braking leading to rear end shunt collisions.

The proposed bus lane is to end after the entrance point to the Bell Inn pub. Although keep clear markings have been proposed across the entrance, a solid white line has also been proposed. This may result in driver confusion leading to sudden lane change manoeuvres or braking which could cause side swipe or rear end shunt collisions.

Recommendation:

It is recommended that the lining is changed to a broken line in order to let drivers know they can access the Bell Inn pub.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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The solid white longitudinal line will be replaced by a broken line at the next drawing revision.

Client Organisation Comments

Client agrees with the Designer's response and proposed changes.

2.16 Problem 16

Drawing: 60599248-ACM-0110-0000-DR-TR-00008

Location: Birmingham Road (southbound) near Skip Lane

Summary: Poor cycle facility may result in side swipe collisions with oncoming buses.

A cycle guidance marking instructing cyclists to re-join the footway is proposed to be located between an existing bus stop and the start of a proposed bus lane near Skip Lane travelling

southbound on the Birmingham Road. Signing drawing “60599248-ACM-1250-0000-DR-TR-00008 Rev P01.1” shows the proposed bus lane will allow motorbikes and cyclists to travel in the lane during operating hours and therefore cyclists do not need to leave the carriageway. If a cyclist was to leave the carriageway at this point, a bus pulling off from the bus stop may fail to see them and a side swipe collision may occur resulting in serious injury to the cyclist.

Recommendation:

It is recommended that the cycle guidance lining is removed to allow cyclists to continue in the bus lane.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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The cycle guidance lining has been removed.

Client Organisation Comments

Client agrees with the Designer’s response and proposed changes.

2.17 Problem 17

Drawing: 60599248-ACM-0110-0000-DR-TR-00009

Location: Birmingham Road (southbound) near Merrions Close

Summary: Poor cycle facility may result in side swipe collisions with oncoming buses.

The proposals widen the carriageway of Birmingham Road travelling southbound to incorporate a bus lane which allows buses, motorbikes and cyclists to travel in (signing drawing “60599248-ACM-1250-0000-DR-TR-00009 Rev P01.1”). However, cycle guidance has been proposed instructing cyclists to re-join the carriageway in to the bus lane. It is unclear why this has been proposed when cyclists are free to travel within the bus lane. These marking may result in confusion for cyclists and cause sudden weaving on to and off the carriageway leading to a collision with an oncoming vehicle.

Recommendation:

It is recommended that the cycle guidance marking is removed as cyclists are free to travel in the proposed bus lane.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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The cycle guidance lining has been removed.

Client Organisation Comments

Client agrees with the Designer’s response and proposed changes.

2.18 Problem 18

Drawing: 60599248-ACM-0110-0000-DR-TR-00010

Location: Birmingham Road (southbound) near Chapel Lane

Summary: Sprint bus stop located at conflict point which may result in side swipe collisions.

A proposed Sprint bus stop has been located before the junction of a service road for residential houses at the point where a break in the bus lane allows vehicles to turn left. This is a conflict point and may result in side swipe or rear shunt collisions as a vehicle wanting to access the service road pulls in and a Sprint bus stops to allow passenger to alight. Also, a driver may pass a bus at the bus stop and turn across the front of the bus to enter the service road. If the bus pulls away, it may collide with the turning vehicle.

Recommendation:

It is recommended that the Sprint bus stop is relocated after the junction for the service road within the existing bus lane.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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The Sprint stop has been moved further south so that it is now approximately 30m from the junction with side road.

Client Organisation Comments

Client agrees with the Designer's response and proposed changes.

2.19 Problem 19

Drawing: 60599248-ACM-0110-0000-DR-TR-00010

Location: Birmingham Road / Chapel Lane junction

Summary: Proposed merge arrows may confuse oncoming vehicles resulting in lane weaving causing side swipe collisions.

The proposals incorporate a bus lane to continue to the A34 after the Chapel Lane junction. However, merge arrows have been proposed to direct vehicles away from the bus lane which may be confusing for oncoming vehicles. Drivers may see the merge arrows and move lanes from the M6 (M5) in to the M6 (M1) lane believing it is not possible to achieve in lane 2 (M6/M5). Weaving from lane to lane could result in side swipe collisions with other vehicles travelling to the M6 leading to injury and/ or damage.

Recommendation:

It is recommended that proposed merge arrows are removed and lane guidance markings introduced.

Design Organisation Response	<input type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected <input checked="" type="checkbox"/> N/A to the Phase 1 scheme
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The works to widen the carriageway to enable the early continuation of a bus lane south of Chapel Lane junction are no longer included in the Phase 1 scheme. This matter will be considered further during the design of Phase 2.

Client Organisation Comments

Client agrees with the Designer's response.

2.20 Problem 20

Drawing: 60599248-ACM-0110-0000-DR-TR-00015

Location: A34 Walsall Road (southbound) near Booths Farm Road

Summary: Proposed edging may result in kerb strikes or overrun causing injury to passengers or pedestrians.

The proposals build out existing kerb lines along the A34 Walsall Road to improve alignment. However, at the start of bus lane (opposite Stanford Avenue) the proposed build out may result in kerb strikes or overrun on to the footway due to its alignment. This may result in injury to passengers onboard and/ or collisions with pedestrians on the footway.

Recommendation:

It is recommended hatching is used to guide buses in to the bus lane and replace the kerb extensions.

Design Organisation Response	<input type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input checked="" type="checkbox"/> Rejected
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While hatching could be used, in this residential area hatched areas such as these are likely to be abused by parked vehicles, potentially making bus manoeuvres more difficult. Additionally, this stop is for non-Sprint bus services and the operator is content that the kerb alignment is sufficient for their operational needs.

Client Organisation Comments

The design has changed since the designer's response was written and kerbing is no longer proposed for the build out prior to the bus stop and the bus lane.

2.21 Problem 21

Drawing: 60599248-ACM-0110-0000-DR-TR-00015

Location: Sprint bus stop opposite Booths Farm Road

Summary: Location of Sprint bus stop may overhang on to pedestrian crossing causing a hazard for partially sighted pedestrians resulting in injury.

The proposals include new bus stops for the Sprint bus which will be 18m long. A proposed bus stop is located opposite Booths Farm Road, travelling northbound. The proposed bus stop is in close vicinity to an existing pedestrian crossing and due to the length of the bus, may overhang the pedestrian crossing. This is a hazard for pedestrians, particularly partially sighted pedestrians who may not see the bus over hanging on to the crossing causing injury should they inadvertently walk in to it.

Recommendation:

It is recommended that the Sprint stop is relocated to ensure that a bus will clear the limit of the crossing.

Design Organisation Response	<input type="checkbox"/> Accepted <input type="checkbox"/> Part Accepted <input checked="" type="checkbox"/> Rejected
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The Sprint bus has 3 door positions and at this stop, it will dock with its middle doors only, so that it is placed exactly as indicated by the bus cage road marking. The articulated bus will therefore not block the controlled pedestrian crossing, which will be clear of the back of the bus.

Client Organisation Comments

Client agrees with the Designer’s response.

2.22 Problem 22

Drawing: 60599248-ACM-0110-0000-DR-TR-00024

Location: Pedestrian Crossing (North) – Heathfield Road / Trinity Road Junction

Summary: Location of pedestrian guard railing may result in pedestrians crossing in unsafe locations increasing their risk of being struck by a vehicle.

The proposals alter the kerb lines and upgrade the signal poles and heads around the junction of Birchfield Road and Trinity Road/ Heathfield Road. However, no pedestrian guard railing has been proposed alongside the kerb line changes. This may result in pedestrians crossing in unsafe locations around the junction, increasing their risk of being struck by an oncoming vehicle.

Recommendation:

It is recommended that pedestrian guard railing is erected around the kerb line of the crossing points.

Design Organisation Response	<input type="checkbox"/> Accepted <input checked="" type="checkbox"/> Part Accepted <input type="checkbox"/> Rejected
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Pedestrian guardrail is no longer appropriate on the splitter island because the crossing is no longer a stagger. However, we have amended the design to include some guardrail to protect the partially sighted as they walk beneath the flyover towards this crossing, to prevent them stepping off the kerb into traffic and to guide them to the correct crossing point.

Client Organisation Comments

Client agrees with the Designer’s response and proposed changes.

2.23 Problem 23

Drawing: 60599248-ACM-0110-0000-DR-TR-00027

Location: Existing bus stop located adjacent to Burlington Street

Summary: Position of existing bus stop, new Sprint stop, and bus lane may result in side swipe collisions injuring passengers on board.

A proposed Sprint bus stop (adjacent to Phillips Street) is in close proximity to an existing bus stop that is remaining as part of the scheme. The proposals guide the existing bus route away from the Sprint stop and in to the bus lane using edging. However, no swept path analysis has been undertaken to show that this manoeuvre can be undertaken safely without overrun. If a bus was to overrun the edging, this may put pedestrians at risk of being struck by an oncoming bus. Similarly, it is unclear whether the Sprint bus will pass the waiting bus safely in the bus lane. This may result in a side swipe collision injuring passengers on board.

Recommendation:

It is recommended that a swept path analysis is undertaken to demonstrate a single decker bus can manoeuvre safely out of the bus stop without overrunning the kerb line and the edging is replaced by kerbing. Also, swept path analysis should be undertaken to show a Sprint bus can pass a waiting bus safely.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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The design has been amended and the build out removed. The Sprint bus will now utilise an upgraded version of the existing "Swimming Baths" stop.

Client Organisation Comments

Client agrees with the Designer's response and proposed changes.

2.24 Problem 24

Drawing: 60599248-ACM-0110-0000-DR-TR-00029

Location: A34 southbound exit at the junction with Newtown Middleway

Summary: Proposed merge point from two to one lane occurs opposite a junction which may result in head on or side swipe collisions as a vehicle turning left fails to see a merging vehicle.

The proposals start a new bus lane running southbound on New Town Row after the junction with Newtown Middleway. Vehicles are then to merge at the same point where Pritchett Street joins with New Town Row. This is a conflict point which may result in head on or side swipe collisions if a vehicle turning left out of Pritchett Street fails to see a merging vehicle.

Recommendation:

It is recommended that the bus lane starts after the junction with Pritchett Street and the existing merge is maintained. Also, it is recommended that on approach to the junction that, buses wishing to travel straight ahead will need to move in to lane 2 and proposed directional sign PS 4.55 will not include "Except Buses" in lane 1.

Design Organisation Response	<input checked="" type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input type="checkbox"/> Rejected
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The design has been amended to reflect the recommendation.

Client Organisation Comments

Client agrees with the Designer's response and proposed changes.

2.25 Problem 25

Drawing: 60599248-ACM-0110-0000-DR-TR-00030

Location: New Town Row (northbound) after Lancaster Tunnel

Summary: Existing road markings may result in confusion leading to kerb strikes and injuring passengers on board.

The proposals plan to make Lancaster Tunnel bus only in both directions, however, the lining after the tunnel heading southbound has not changed which will lead buses into a proposed build out. This may cause the bus to strike to kerb of the build out which may injure passengers on board.

Recommendation:

It is recommended that hatching is used to guide buses away from the proposed build out.

Design Organisation Response	<input type="checkbox"/> Accepted	<input type="checkbox"/> Part Accepted	<input checked="" type="checkbox"/> Rejected
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Although not shown on the drawing because it has not been picked up by the topographic survey, the approach to the proposed buildout at the northbound exit of the tunnel is already hatched and is not a trafficked part of the carriageway.

Client Organisation Comments

Client agrees with the Designer's response.

3.0 CLIENT ORGANISATION STATEMENT:

I accept these proposals by the Design Organisation

Name:

Position: Scheme Delivery Manager

Organisation: Transport for West Midlands

Signed:

Dated: 30/10/2020