Quality Audit

Ardee Main Street, Co Louth

Ardee Regeneration 2040
Louth County Council

November 2024 **HDC1256/102_RevB**

Hegsons Design Consultancy Limited

Dublin I Cork I Bedford I High Wycombe I Buxton I Saint-Denis-Le-Gast

Louth County Council

Ardee Main Street, Co Louth

Quality Audit

November 2024

Hegsons Design Consultancy Ltd

Dublin I Cork I Bedford I High Wycombe I Buxton I Saint-Denis-Le-Gast

Contents

1 Introduction

1.1 Introduction

Hegsons Design Consultancy Ltd have been commissioned to provide design consultancy services for the Ardee 2040 Regeneration Scheme.

1.2 Description of the Scheme

This DMURS Quality Audit report aims to assess the scheme from the perspective of the Design Manual for Urban Roads and Streets on aspects of safety, accessibility and streetscape. This project includes the provision of upgraded public realm facilities along the N2 Main Street in Ardee incorporating improved pedestrian permeability and active travel upgrades, pedestrian priority junction works, traffic calming. Pedestrian facilities along the route and upgraded public space at various location within the scheme.

Ardee, Co. Louth is on the N2 Dublin – Monaghan Road and is linked by the N33 to the M1 Dublin – Belfast motorway. Ardee is also on the N52 National Secondary Route, a cross-country diagonal route between Dundalk in the north and Nenagh in the south and linking many midlands towns along its route.

Ardee Main Street is a National Road and primary route for traffic moving in a north-south direction through Ardee. The road is a single carriageway, two-way road with footpath provided on both sides of the road along its full length. The carriageway is quite wide at various locations along the Main Street. A number of pedestrian crossing facilities are provided along the street however, no dedicated cycle facilities are provided along the street. A high level of car parking exists along the Main Street and a lot of the parking is in an irregular pattern, with combinations of parallel, saw-tooth and perpendicular parking along the street.

The Main Street is recognised as a constrained route which caters for local and regional road traffic. This traffic is a mixture of heavy goods vehicles (HGVs), bus and utility service vehicles, as well as regional and local car traffic. Traffic is observed as relatively significant and constant throughout the day, particularly at peak times. The road is subject to an urban speed limit of 50 km/hr and 60km/hr within the study area.

The N52 connects Kells in the west to the town centre and the N2 at a priority-controlled junction in the centre of the town. The N52 is a single carriageway two-way road which caters for a high volume of traffic travelling form the west and onward to the north along the N2. The N52 Jervis Street section of the road has a pedestrian footpath on the northern side of the road between the N2 and Ash Walk. Footpaths are provided on the northern side of the road along the road, but only a small section of footpath is provided intermittently on the southern side of the road. The road is subject to an urban speed limit of 50 km/hr and 60km/hr within the study area.

Ash Walk is a narrow one-way westbound street which connects the N2 Main Street, via a priority-controlled junction with Sean O'Carroll Street, to the N52 Jervis Street. The street is narrow with footpath provided along the full length of the street running east-west on both sides of the road. However, no footpaths are provided along the section of Ash Walk heading south towards the N52.

It should be noted that as a result of the Ardee Educate Together School, a section of Ash Walk road from the N52 to the school site will be constructed to service the school. This road will allow for the extension of Ash Walk road. Upon completion of the extension this will provide access to the publicly owned HSE lands and facilitate the development of these lands for institutional use including “Enabled Housing” for older people and the 50 bed Nursing Home unit.

Sean O’Carroll Street is a narrow two-way street which connects the N2 Main Street at the Ash Walk priority-controlled junction to the N33 at a roundabout junction, to the east of Ardee town centre. The street provides on-street parking along the northern side of the road for the extend of the residential property boundaries, thus reducing the width of the road to only enable one vehicle to pass at a time. The street has footpaths along the entire length of the street on the southern side and for a large extend of the northern side of the road. The road provides a dedicated cycle lance for 300m on the northern side of the road, close to the N33.

Tierney Street is a single carriageway two-way street which connects the N2 Main Street at the Malone Terrace priority-controlled junction and whilst serving various residential dwellings, is a cul-de-sac to the east. The street leads to the Ardee Wastewater Treatment plant to the east of the town centre. The street has footpaths along its entire length, and these are provided on both side of the road.

Golf Links Road is a single carriageway two-way street which connects the N2 Main Street to the northwest areas of the town, including Ardee golf course. The N2 connects to the Golf Links Road at the priority-controlled junction. The street has footpaths on both side of the street along the section close to the N2 junction. A pedestrian crossing facility is provided to the west of the N2 in order to connect the Woodland Walk to the Town Park to the north of the road.

The introduction of improved active travel provisions, improved pedestrian permeability and junction upgrades, would assist in shifting priority in the town centre towards vulnerable road users. These works, in conjunction with a regenerated street scape, would enhance the town centre as an area to live and do business. These works will create improved access for all vulnerable road users to access the existing bus services in a safe and comfortable manner, which will encourage use of the service.

1.2.1 The Scheme

The proposed scheme will consist of:

1. Public realm improvement works at Ardee Main Street (N2) and surrounding streets comprising: new hard landscaping including resurfacing; soft landscaping including new tree planting; street furniture; new pedestrian connections and footpaths; Sustainable Urban Drainage System (SUDS); new cycle parking; tactile paving; and undergrounding of services.

2. Road improvement works at Ardee Main Street (N2) and surrounding streets to include: alteration of road alignment; realignment of Golf Links Road / N2 junction; raised junctions; resurfacing; shared surface treatments; revised access arrangements; pedestrian crossing points; reduction and rationalisation of the layout / orientation of existing on-street public car parking provision; installation of electric vehicle charging points; new bus stop shelters; road signs; and new public lighting.

3. Resurfacing of Bridge Street Bridge (NIAH Reg. No. 13823008 / Protected Structure Ref: LHS017/056) at Bridge Street.

4. Construction of a new segregated cycle lanes at Main Street (N2) (in the townland of Townparks), Ardee provided as dedicated one-way and two-way bi-directional cycle lanes and associated cycle parking stands.

5. Alterations to the existing car parking layout at Ardee Library off Ardee Main Street (N2) (in the townland of Townparks) to create in part a public plaza including retention of Sir Frederick Foster Memorial Fountain scheduled monument (NIAH Reg No. 13823042 / Protected Structure Ref: LHS017/070) and realignment of existing access road to Foster Close.

6. Extension of Ash Walk Road (extending approx. 60m to the west and upgrades to existing junction to the Supervalu car park / services access off Ash Walk Road.

7. All associated site works including: drainage; undergrounding of services; and all other associated ancillary development works.

Further to discussion with TII and feedback received through TII Departure submission no. 36213, it should be noted that any change of speed limit cannot be approved through the Departures process and that the design although encouraging a 30kph speed or lower, would be assessed in the same way whether it was a designated 30kph or 50kph speed limit zone. The proposed design, including raised tables and carriageway width, will create an urban environment which results in reduced vehicle speeds.

2 Quality Audit

Quality Audit is a defined process, independent of, but involving, the design team that, through planning, design, construction and management stages of a project provides a check that high quality places are delivered and maintained by all relevant parties, for the benefit of all end users. Quality Audit is a process, applied to urban roads, traffic management or development schemes, which systematically reviews projects using a series of discrete but linked evaluations and ensures that the broad objectives of place, functionality, maintenance and safety are achieved.

Quality Audit was introduced in the publication Design Manual for Urban Roads and Streets following concerns that in the design of new streets provisions made for motor vehicles frequently led to a poorly-designed public realm. In an urban area there is a high level of competing demand from different classes of road users. A well-balanced street should have minimal visual clutter and obstacles; incorporating durable materials and most importantly, will encourage a degree of negotiation between road users as they make their way through it.

Quality Audit involves various assessments of the impacts of a street scheme in terms of road safety, visual quality and the use of streets by the community. Access for people with additional needs, pedestrians, cyclists and drivers of motor vehicles is considered.

In the context of a Quality Audit, a road safety assessment is considered to be an appropriate method of examining road safety issues as it incorporates both the hazard identification techniques used in road safety audit (RSA) and formal risk assessment techniques. This allows the opportunity at an early stage for road safety issues to be considered in a more dynamic way within the design process, and to ensure that safety issues are considered as part of the design rather than after design work is completed.

The Quality Audit Team reports findings with suggestions for future action. It should be noted that, in a Quality Audit, it is not the intention that suggestions would be binding on the design team; they are offered for detailed consideration in the design process.

DMURS states that Quality Audits should consist of the following parts:

- DMURS Street Design Audit
- Individual Design Audits
- Quality Audit Report

In the case of this report the individual design audits comprise an RSA, an Integration & Accessibility audit, a Walkability audit and Cycle audit.

3 Methodology

The Design Audit Team for the Quality Audit (Independent of the Road Safety Audit Team – Outlined in Chapter 5) was as follows:

Ken Hegarty Chartered Engineer MIEI

Steve Sissons Engineer

Road safety, non-motorized users, visual quality, people with additional and functionality were considered in the Quality Audit. This exercise focused on issues such as:

- the design rationale as it related to vehicle, cycle and pedestrian movements;
- pedestrian desire lines both to and through the site;
- access requirements for all modes of transport;
- access requirements for disabled people and other vulnerable users;
- any road safety concerns associated with the scheme;
- the visual appearance of the scheme as it is experienced by those entering it and moving around within the street, including how this affects road user behaviour; and
- any other issues considered relevant to each constituent element of the Quality Audit process.

Multiple Site Visits have been carried out by the Audit Team to enable the generation of the Quality Audit and the individual audits within. These site visits included:

- Assessment of existing infrastructure for Walkability, Accessibility and Cycle Audit

In accordance with DMURS Advice Note No. 4 May 2019 (contained on https://www.dmurs.ie/supplementary-material) a Quality Audit should always contain a DMURS Street Design Audit and Other Design Audits (as required).

Section 4.0 of this report contains the Street Design Audit.

Section 5.0 contains the Other Design Audits (Road Safety, Walking, Cycling, Accessibility). The Street Design Audit is in the format provided as a template on the DMURS website.

4 Street Design Audit

The use of DMURS in urban areas is mandatory and the DMURS Street Design Audit is an auditing tool that can be used to ensure that the relevant issues contained within DMURS have been duly considered.

The DMURS Street Design Audit is primarily concerned with four major aspects of street design:

- Connectivity
- Self-Regulating Street Environment
- Pedestrian and Cycling Environment
- Visual Quality

The Street Audit focuses on ensuring a place based / integrated approach to design has been incorporated and based around 4 core principles:

1. To support the creation of integrated street networks which promote higher levels of permeability and legibility for all users, and in particular more sustainable forms of transport. – DMURS Chapter 3

2. The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment – DMURS Chapter 4

3. The quality of the street is measured by the quality of the pedestrian environment – DMURS Chapter 4

4. Greater communication and co-operation between design professionals through the promotion of a plan-led, multidisciplinary approach to design – DMURS Chapter 5

The DMURS Street Design Audits consists of a series of short tables that can be used to cross check a design against the principles, approaches and standards contained within DMURS. The Street Design Audit for the scheme has been carried out using the template as provided from www.dmurs.ie.

The Street Design Audit Report has been included in **Appendix A** to this report.

5 Road Safety Audit

A Stage 2 Audit has been carried out in accordance with the relevant sections of Transport Infrastructure Ireland Publication (Standards) “Road Safety Audit” GE-STY-01024 (December 2017). The team have examined and reported only on the road safety implications of the design submitted and has not examined or verified the compliance of the design to any other criteria.

The Road Safety Audit Report has been included in **Appendix B** to this report.

6 Walkability & Accessibility Audit

6.1 Introduction

The Design Team have carried out audits on Walkability & Accessibility issues on the existing scheme and have used these issues to inform the design principles of the proposed scheme. Currently no cycling infrastructure is in place along the extents of the scheme.

A summary of the key issues identified across both areas of Walkability & Accessibility are outlined below.

6.2 General Walkability & Accessibility Issues

Issue 6.1:

Within the existing extents of the scheme, there is a lack of drop kerbs facilitating pedestrian desire lines and no evidence of tactile paving at key junction crossings as well as incorrect tactile provision and desire lines. It has been noted that point hazards provide obstructions along the footways and where vehicle access points are present across existing footways, vehicular priority is provided instead of continuity of pedestrian infrastructure.

Recommendation:

Ensure Tactile paving and drop kerbs of appropriate size and orientation along pedestrian desire lines at road crossings, improve pedestrian desire lines around junctions and re-prioritise individual vehicular access points for pedestrian priority where they cross the footway.

Issue 6.2:

Currently in Ardee there is a significant issue regarding accessibility and crossing of the N2 to facilitate pedestrian desire lines. Within the study area, only 2 pedestrian crossings and 1 zebra crossing are present.

Recommendation:

Improve desire lines and incorporate pedestrian crossing infrastructure (controlled and uncontrolled) along the N2 Main Street.

Issue 6.3:

Accessibility issues for all road user is currently impacted by the random nature of various parking orientations along the Main Street. The lack of a consistent approach to car parking, the Main Street currently accommodates parallel, perpendicular, and saw-tooth parking at various points along the route, can cause a significant issue regarding accessibility, in particular for mobility impaired users.

Recommendations:

Provide a rationalised and consistent approach to car parking along both sides of the N2 Main Street.

Issue 6.4:

Trip Hazards & Ponding Water observed within the existing footways through desktop and site survey. These trip hazards may result in slips and falls and will lead to deteriorating.

Recommendation:

Assessment of issues creating ponding and trip hazards such as tree surveys, flat spot analysis and survey of utilities. A full streetscape design will would be required to ensure functional drainage channels, gratings & paving.

Issue 6.5:

Existing Footpath widths are constrained at key locations preventing pedestrians from using the infrastructure comfortably with street furniture in the way e.g. Lighting Columns, bollards. There is also a noted lack of segregated infrastructure along the route which has lengths of uncontrolled vehicular access raising significant safety concerns.

Recommendation:

Provide continuous widened infrastructure along the N2 Main Street, removing point constraints and re-prioritising the area to provide segregated pedestrian infrastructure with controlled vehicular access points.

Issue 6.6:

The N2 carriageway along the route, in particular the southern section, is very wide, leading to ambient traffic speeds which would be higher than what is appropriate for the area in period of less traffic congestion.

Recommendation:

Provide appropriate signage, speed limits, vertical and horizontal deflections, narrowed carriageway in line with speed control requirements.

Issue 6.7:

Pedestrian connectivity to the library area is not currently provided across the N2. This is an issue for all road users including the mobility impaired users. Unregulated pedestrian crossings could lead to collision, injury with passing traffic.

Recommendation:

Consider the appropriate provision go as dedicated crossing point at this location to enhance connectivity across the Main Street

Issue 6.8:

The wide junctions, in particular at Golf Links Road, is difficult for vulnerable road user to crossing on the desire line. The legibility of the junction is also poor and pedestrian facilities are discontinued at this location. The pedestrian priority is not evident with no appropriate signage present.

Recommendation:

A reduction in the wide and number of lanes that need to be crossed should be considered along with the provision of appropriate uncontrolled tactile paving/dropped kerbing and pedestrian crossing facilities at this location to ensure continuity of the footpath network.

Issue 6.9:

There is a lack of cycle facilities along the entire route, included dedicated cycle lanes and parking facilities.

Recommendation:

The introduction of dedicated cycle facilities and secure cycle parking facilities along the route would enhance and encourage more cycle users through the area.

Issue 6.10:

The existing bus stop on the eastern side of the N2 Main Street does not provide a shelter for commuters. The existing bus stop is on a narrow island and isolated for from the adjoining footpath.

Recommendation:

The possibility of providing appropriate bus stop shelter to be evaluated at this location and provided if feasible. The existing footpath and island should be reinstated to avoid / minimise potential trip hazards to users. A review of the improvements to the junction may address this issue.

Issue 6.11:

Forward visibility from the existing bus stop on the western side of the road may be blocked by parking vehicles, in particular any high sided vehicles. The bus shelter should be setback to ensure visibility is not impeded.

Recommendation:

Ensure appropriate forward visibility is provided to waiting commuters and pedestrians in the event that they cross the road at this location after disembarking the bus.

Issue 6.12:

The existing pedestrian footpath facilities, for example at the junction of Ash Walk and Main Street are poor, with a very narrow footpath available on one side of the lane. The existing laneway is a one-way single carriageway with traffic entering off the Main Street to the nearby retail area. Vulnerable road users are at higher risk from collision potentially due to the lack of vehicle separation.

Recommendation:

Review appropriate footpath widths to facilitate the passing footfall along this section of roadway and avoid pedestrians being forced to enter the vehicle trafficked area.

Issue 6.13:

Narrow and uneven footpaths along the route may present difficulties for vulnerable road users.

Recommendation:

Footpaths should be widened and designed to an appropriate standard to safely accommodate pedestrians along this route. Footpath drainage should be considered appropriate in order to provide adequate mobility and protection for vulnerable road users.

Issue 6.14:
The existing footpaths have deteriorated in certain locations, thus confining the available footpath widths for passing pedestrians. These confined dimensions can lead to mobility issues for wheelchair access and lead to pedestrian / vulnerable road users entering into the road carriageway at this location, leading to potential collisions.

Recommendation:
Poor footpath surface should be replaced, and street furniture positions should reflect the passing of pedestrian, wheelchair and /or buggy footfall.

6.3 Summary

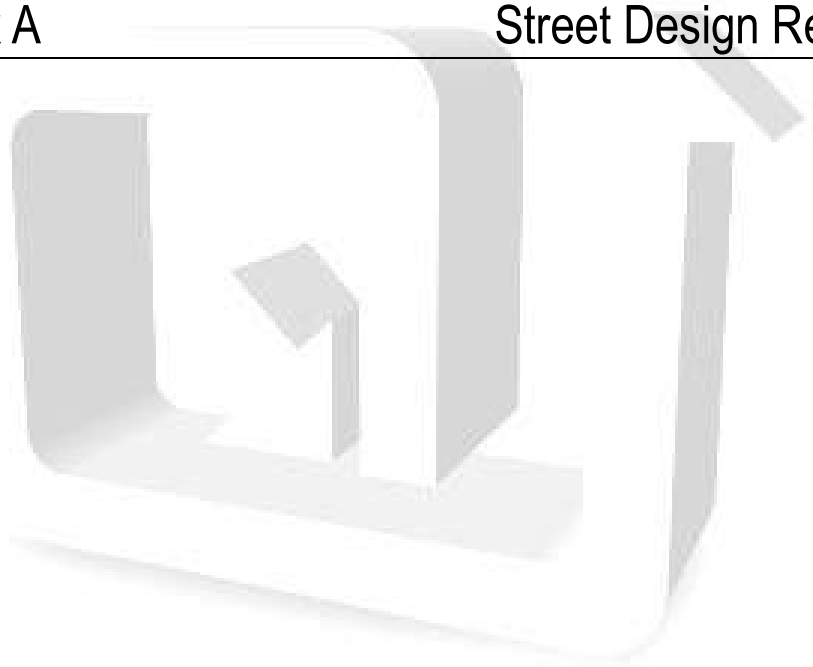
The existing pedestrian and facilities along the N2 Main Street are substandard in locations and do not present enticing sustainable transport modes of travel within the area due to the existing car dominant design of the N2 and the associated car parking arrangements.

Providing a DMURS compliant design with upgrades to the footpath and road space will result in a significant improvement to road safety conditions at the location, leading to enhanced connectivity to infrastructure and facilities. Some minor audit issues are highlighted in this audit, predominately related to footpath space and the lack of cycle facilities along the route is also referenced.

The route is very well located in terms of connectivity to the wider commuter network and its close proximity to services means that sustainable travel modes are viable and offer significant advantages to prospective road users compared to private car travel.

Significant improvements to the streetscape by improving the geometry of the existing route, the quality of the crossing facilities, footpath and cycle provisions etc, will make the Mian Street a more user-friendly environment for all.

Appendix A Street Design Report



Design Manual for Urban Roads and Streets

Street Design Audit

Prepared in respect of: 2040 Ardee Regeneration Scheme

Prepared by: *Hegsons Design Consultancy Ltd*

Date: *November 2024*

Connectivity		
Key Issues	**Key DMURS Reference.**	**Design Response**
Strategic routes/major desire lines been identified and are clearly incorporated into the design.	3.1 – Integrated Street Network 3.2.1 – Movement Function 3.3.1 – Street layouts 3.3.4 - Wayfinding	Current Infrastructure segregates the town between east and west sides of the N2 Main Street and does not provide infrastructure for crossing the main street at key pedestrian desire lines around the N2 Main Street Ardee. The scope of the project includes the provision of upgraded public realm facilities along the N2 Main Street in Ardee incorporating improved pedestrian permeability and active travel upgrades, pedestrian priority junction works, traffic calming. Pedestrian facilities along the route and upgraded public space at various location within the scheme. Improvements to the main street will improve wayfinding and movement function while new continuous footways along the route and create a more integrated street network. Proposed cycleways along the Main Street and the inclusion of raised tables with coloured surface will re-prioritise the street away from being heavily vehicular focused and promote active travel.
Multiple points of access are provided to the site/place, in particular for sustainable modes.	3.3.1 – Street Layouts 3.3.3 – Retrofitting	Improvements to existing Main Street and adjoining area will improve wayfinding and movement function while new continuous footways along the route will create a more integrated street network.

		The proposed design rationalises the level and orientation of the car parking along the route. Raised tables and horizontal deflection of the carriageway will help control speed and enable safer access along the route. The scheme includes the widening of footways and crossing points along the length of the Main Street improving the quality of infrastructure for vulnerable road users within the centre of the town. Improving the pedestrian points of access between the east and west sides of the main street and the provision of active travel infrastructure in the form of cycleways within the study area will also provide development of other sustainable modes of transport and future connection to the wider infrastructure already in place.
Accessibility throughout the site is maximised for pedestrians and cyclists, ensuring route choice.	3.3.1 – Street Layouts 3.3.2 – Block Sizes 3.4.1 – Vehicle Permeability	Inclusion of cycling infrastructure along the northbound and southbound carriageways of the Main Street, upgrade of existing footways and improved pedestrian routes in and around the Mian Street will enhance active travel choice. The provision of continuous cycling infrastructure within the scheme extents will form the basis of development and tie in to any future wider Ardee cycling network enabling improved connectivity and promote a wider choice of travel within the growing Urban area. This will also add to route choice available to local journeys such as school traffic and commuting. Narrowing of the Main Street carriageway and inclusion of raised tables and junction amendments will also reduce the current operational 85th %ile speeds providing a safer environment for pedestrians and cyclists to operate.

		The calming of traffic and raised table along the N2 and the reduction in carriageway width will also assist vulnerable road users.
Through movements by private vehicles on local streets are discouraged by an appropriate level of traffic calming measures.	3.2.1 – Movement Function 3.2.2 – Place Context 3.4.1 – Vehicle Permeability	Narrowing of the Main Street R147 carriageway and inclusion of raised tables and junction amendments will reduce the current operational 85th %ile speeds along the road and will provide a safer environment for pedestrians and cyclists to operate. The proposed route upgrades seek to enhance the overall area and promote the historic nature of the area which will be enhanced by the new proposed Public Realm Scheme. Traffic calming in the form of raised tables and pedestrian crossings will ringfence the approaches to this main area of pedestrian activity and add increased significance to the Place Context and re-prioritisation of the space away from vehicular traffic. The rationalisation of car parking will also shift the priority away for the current private car dominated streetscape.

Self-Regulating Street Environment		
Key Issues	**Key DMURS Reference.**	**Design Response**
A suitable range of design speeds have been applied with regard to context and function.	3.2.1 – Movement Function. 3.2.3 – Place Context. 4.1.1 – A Balanced Approach to Speed	85th %ile Operational Speeds on the existing Main Street have been monitored at 59kph. A posted speed limit of 50kph is currently in place. The inclusion of multiple raised tables aims to reduce the operational speeds to typical urban values of between 30-35kph junction improving safety to pedestrians and cyclists. The posted speed for the area is proposed to be lowered to 30kph.
The street environment will facilitate the creation of a traffic clamed environment via the use of 'softer' or passive measures.	4.2.1 – Building Height and Street Width 4.2.2 – Street Trees 4.2.3 – Active Street Edges 4.2.4 – Signage and Line Marking 4.2.7 – Planting 4.4.2 – Carriageway Surfaces 4.4.9 - On-Street Parking Advice Note 1 – Transitions and Gateways	85th %ile operational speeds on the existing N2 Main Street have been monitored at 59kph. A posted speed limit of 50kph is currently in place. The inclusion of multiple raised tables aims to soften the environment, discouraging drivers from higher operational speeds and vehicular priority. The proposed works will aim to reduce the carriageway widths and junction radii in line with DMURS guidance promoting lower operational speeds while soft & active street edges such as raised cycle lanes, rationalised parking, colour and material changes & urban planting will further raise driver awareness and encourage lower through speeds. This will be especially important given the relatively low-level building heights along the main street in adding to the feeling of enclosure. The proposed reduction of the existing carriageway width away from TII DMRB standards in line with DMURS guidelines will similarly discourage higher operational speeds and promote the 'active street edge'

A suitable range of design standards/measures have been applied that are consistent with the applied design speeds.	4.4.1 - Carriageway Widths 4.4.4 – Forward Visibility 4.4.5 – Visibility Splays 4.4.6 – Alignment and curvature 4.4.7 – Horizontal and Vertical Deflections Advice Note 1 – Transitions and Gateways	Design standards as outlined in DMURS have been adopted to improve the existing carriageway widths, road geometry, forward and junction visibilities and horizontal and vertical deflections throughout the scheme.
Pedestrian and Cycling Environment		
Key Issues	**Key DMURS Reference.**	**Design Response**
The built environment contributes to the creation of a safe and comfortable pedestrian environment.	4.2.1 – Building Height and Street Width 4.2.3 – Active Street Edges 4.2.5 – Street Furniture 4.4.9 - On-Street parking	Key focus has been given to providing a fully accessible design with comfortable pedestrian facilities throughout the study area with a key focus on safe controlled linkages between the east and west sides of the Main Street, increased permeability around side streets and the Library area and improved facilities along Ash Walk. The development of the study area as a public space for pedestrians and inclusion of street furniture will create safe pedestrian leisure/meet up space within the urban centre. Rationalised on-street car parking will also form part of the creation of the safer pedestrian and cyclist environment.
Junctions been designed to ensure the needs of pedestrians and cyclists are prioritised.	4.3.2 - Pedestrian Crossings 4.3.3 – Corner Radii 4.4.3 - Junction Design 4.4.7 - Horizontal and Vertical Deflections	The Main Street redevelopment will be supplemented by junction upgrades including raised table constructions and provision of high visibility pedestrian crossing facilities and desire lines between the east and west sides of the Main Street.

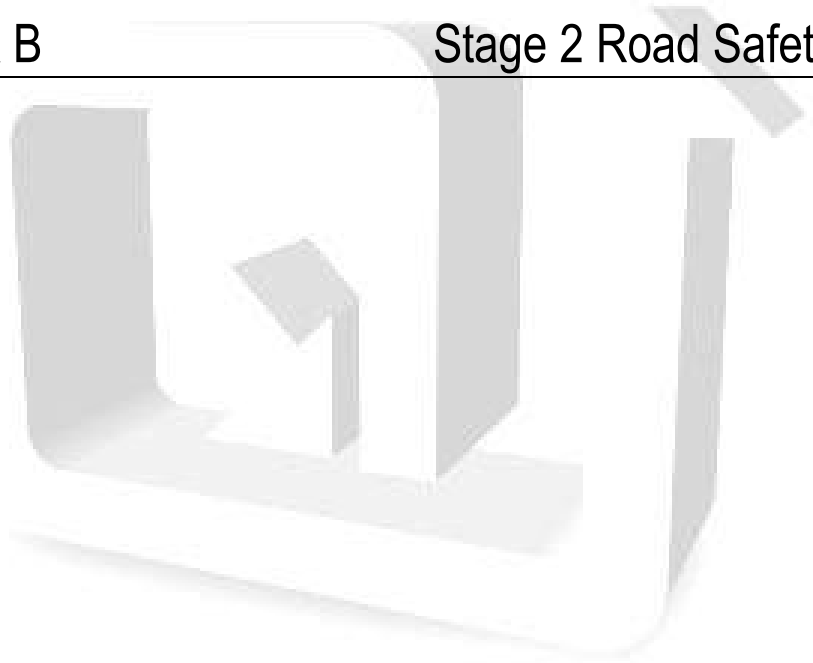
		Traffic calming in the form of raised tables and pedestrian crossings will ringfence the approaches to this main area of pedestrian activity and add increased significance to the Place Context and reprioritisation of the space away from vehicular traffic. The provision of additional pedestrian crossings will take into consider the pedestrian desire lines along the route. Consideration is being given to the designation of character area along the route as a Shared Surface highlighting the use of the area by cyclists in a low-speed zone. Segregated cycle facilities are being proposed along the Main Street to provide active travel. This can potentially be further extended in future scenarios to the wider town areas by connecting with cycle lanes provided for other future developments. Crossing points are to be provided throughout to cater for transition between cycle infrastructure and to cater for both pedestrians and cyclists alike.
Footpaths are continuous and wide enough to cater for the anticipated number of pedestrian movements.	3.2.1 – Movement Function. 3.2.3 – Place Context. 4.2.5 – Street Furniture 4.3.1 - Footways, Verges and Strips 4.3.2 - Pedestrian Crossings	Continuous footpaths are being provided as part of the proposed design including the provision of new high visibility pedestrian crossings along the full extent of the Main Street. Along the Main Street footways are typically a minimum of 2.0m in width, widening to over 3-4m in some environs along main street where it is anticipated the focus of pedestrian activity will be present. Short sections of minimum 1.6m-1.8m footways are also provided but are constrained to areas of lower pedestrian activity and are intermittent point occurrences.

Pedestrian and Cycling Environment (cont)		
Key Issues	**Key DMURS Reference.**	**Response**
The particular needs of visually and mobility impaired users been identified and incorporated in the design.	4.2.5 - Street Furniture 4.3.1 - Footways, Verges and Strips 4.2.5 - Street Furniture 4.3.2 - Pedestrian Crossings 4.3.4 - Pedestrianised and Shared Surfaces	The design has been cognisant of the use of tactile paving, kerbing at shared surfaces, pedestrian crossings and height changes between areas in the proposed design to consider needs of visually and mobility impaired users. The design is ensuring a fully accessible scheme featuring material changes that caters for all mobility impaired users throughout. Accessible Car-Parking is also to be provided along the Main Street to ensure that mobility impaired users have a choice of location to park to meet their demands from the town centre.
Cycling facilities will cater for cyclists of all ages and abilities.	3.2.1 – Movement Function. 3.2.3 – Place Context. 4.3.5 - Cycle facilities.	Cycling facilities proposed will be via an off-road cycle lane providing a buffer to the adjacent road carriageway. Cycle Lanes will continue between the junctions to optimise use by cyclists of all ability with the cycle lane ranging between 1.5m one-way and a 2.0-3.0m wide two-way facility. Proposed facilities will enable future connection to cycling infrastructure existing and proposed on the outskirts of the town.

Visual Quality		
Key Issues	**Key Considerations and DMURS Ref:**	**Design Response**
The landscape plan responds to the street hierarchy and the value of the place.	3.2.1 – Movement Function. 3.2.3 – Place Context. 4.2.2 – Street Trees 4.2.7 – Planting Advice Note 1 – Transitions and Gateways	The Design Team are liaising with the Louth County Council to ensure that the landscape plan is in keeping with the planning specifications of the area and any other proposed works in Ardee to ensure the project takes cognisance of the street hierarchy and aesthetic value of the town.
Street furniture is orderly placed.	3.2.1 – Movement Function. 3.2.3 – Place Context. 4.2.5 - Street Furniture. 4.3.1 Footways, Verges and Strips	Street Furniture will be placed cognisant of pedestrian desire lines, footpath widths and likely use of the various zones within the scheme extents. Selection of Street furniture type at detailed design will be cognisant of the place profile and be in keeping with the design elements incorporated from the existing environment.
The use of signage and line marking has been minimised.	3.2.1 – Movement Function. 3.2.3 – Place Context. 4.2.4 - Signage and Line Marking.	Signage and line markings have been minimised within the scheme extents in favour of using material and colour changes to inform all road users.
Materials and finishes used throughout the scheme have been selected from a limited palette and respond to the value of the place?	3.2.1 – Movement Function. 3.2.3 – Place Context. 4.2.6 – Materials and Finishes 4.2.8 – Historic Contexts. 4.3.2 – Pedestrian Crossings 4.4.2 – Carriageway Surfaces	Materials and finishes will be chosen at detailed design stage in consultation with Louth County Council and following close consideration of the historic context of the area. Full consideration will be given to construction guidance as outlined in DMURS Advice Note 2 – Materials and Specifications to ensure

	Advice Note 2 – Materials and Specifications	that appropriate surface and sub surface materials and construction are implemented. The Design Team are engaging with Louth County Council to ensure a design in keeping with the area and in keeping with the long-term development and planning strategy for the town of Ardee.
Additional Comments		

Appendix B Stage 2 Road Safety Audit



Title: **STAGE 2 ROAD SAFETY AUDIT**

For;

Main Street Ardee

Client: **Louth County Council**

Date: **June 2024**

Report reference: **2067R02 Rev 1**

VERSION: **October 2024 Addendum - FINAL**

Prepared By:

Bruton Consulting Engineers Ltd

Glaspistol
Clogherhead
Drogheda
Co. Louth.

Tel: 041 9881456
Mob: 086 8067075
E: admin@brutonceng.ie
W: www.brutonceng.ie

CONTENTS SHEET

Contents

1.0 Introduction

This report was prepared in response to a request from Mr. Lee Hannigan, Turley, on behalf of Louth County Council, for a Stage 2 Road Safety Audit of the proposed Ardee Main Street Regeneration Project.

The Road Safety Audit Team comprised of;

Team Leader: **Norman Bruton**, BE CEng FIEI, Cert Comp RSA.

TII Auditor Approval no. NB 168446

Team Member: **Owen O'Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI

TII Auditor Approval no. OO1291756

The Road Safety Audit comprised an examination of the drawings and other material provided and a site visit by the Audit Team, on the 17th of June 2024.

The weather at the time of the site visit was mainly dry however with some rain showers. The road surface was generally dry and became damp.

This Stage 2 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated December 2017.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria.

The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users.

If any of the recommendations within this safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

A location map showing where each problem occurs is provided in **Appendix A.**

A list of the documents provided to the Audit Team is provided in **Appendix B.**

The feedback form is provided in **Appendix C.**

TII Approval of the Audit Team is provided in **Appendix D.**

A Combined Stage 1&2 Road Safety Audit was carried out in November 2023 by the same Audit Team (report ref 2067R01).

The first version of this report was finalised in July 2024. Since then the design has developed to accommodate private accesses and other minor adjustments along the scheme. This has resulted in some localised changes to the design. This version of the report includes an additional section (Section

3A) which is based on a review of the updated drawings at these locations. The new drawing references are added to Appendix B. For ease of reference and clarity text associated with this October 2024 update is presented in blue.

2.0 Background

Ardee Main Street is part of the N2 National Primary route. The road is a single carriageway, two-way road with footpaths provided on both side of the road along its full length. The carriageway is quite wide at various locations along the Main Street and narrow at one point close to the Dee River crossing.

A number of pedestrian crossing facilities are provided along the street however, no dedicated cycle facilities are provided along the street. A high level of car parking is experienced along the Main Street and a lot of the parking is in an irregular pattern, with combinations of parallel, echelon and perpendicular parking along the street.

The proposed development would consist of:

- Realignment and narrowing of the carriageway on Main Street and alterations / rationalising of on-street parking provision to reduce the overall number of spaces.
- Creation of new urban civic spaces, streets, road junctions, pedestrian pavements and cycle routes.
- Active Travel Upgrades along the Main Street
- Construction of new public realm comprising new hardscape surfaces, kerbing, street furniture, public street and feature lighting, soft landscape planting, cycle parking and signage.
- Alterations to the existing car parking layout outside Ardee Library to create a public plaza.

The site location map is shown below.

For ease of reference and clarity text associated with this October 2024 update is presented in blue.

Image Courtesy of openstreetmap.org

3.0 Issues Identified in this Stage 2 Audit (June 2024)

3.1 Problem (Repeat of Issue 3.1 in the Stage 1&2 RSA)

Location

Throughout the scheme, parking.

Problem

Although the scheme promotes vulnerable road users and active travel there is a risk that the reduction of parking areas will lead to illegal parking on the footpaths and cycle tracks thereby rendering them unsafe for vulnerable road users. Traffic wardens are generally only present in Ardee one day per week to enforce compliance.

Recommendation

It is recommended that sufficient alternative parking spaces be provided close to the Main Street to facilitate those trading in the area. Signage to direct drivers to these parking areas may be required until they are well established for those who can no longer park along the Main Street.

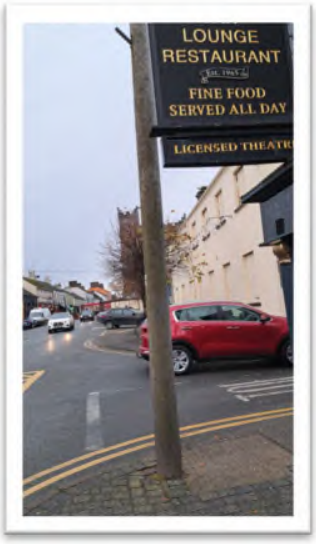
3.2 Problem (Repeat of Issue 3.2 in the Stage 1&2 RSA)

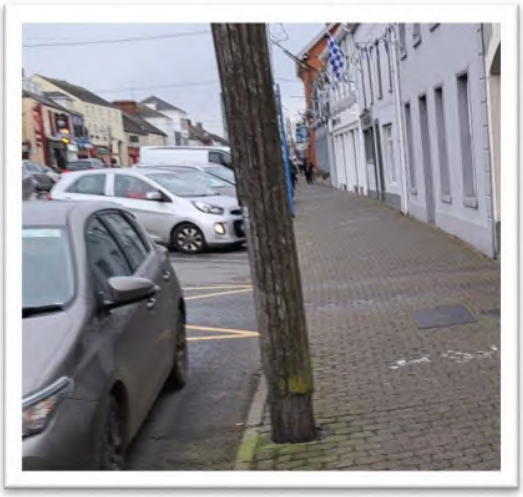
Location

Throughout the scheme, Utility Poles.

Problem

There are some substantial utility poles in the footpaths along the scheme. It is unclear if these poles are to be removed. If they are to remain they present hazards for pedestrians who may collide with them if not looking up, or if the pedestrians are visually impaired and also the poles reduce the effective width of the footpath to such an extent that some pedestrians may step onto the carriageway to avoid them thereby increasing the risk of being struck by a passing vehicle.





Recommendation
It is recommended that the poles be removed.

3.3 Problem (Repeat of Issue 3.3 in the Stage 1&2 RSA)

Location
Throughout the scheme, Loading bays.

Problem
It is noted that some loading bays have been provided along the scheme. Main Street is a long street with many commercial & retail premises. The loading bays may be remote from many shops leading to delivery vehicles parking on the cycle tracks and footpaths thereby blocking the routes for cyclists and pedestrians leading to those vulnerable road users entering the carriageway and being at risk of being struck by passing vehicles.

Recommendation
It is recommended that an assessment be carried out for the need for additional loading bays along the scheme and they should be provided as required.

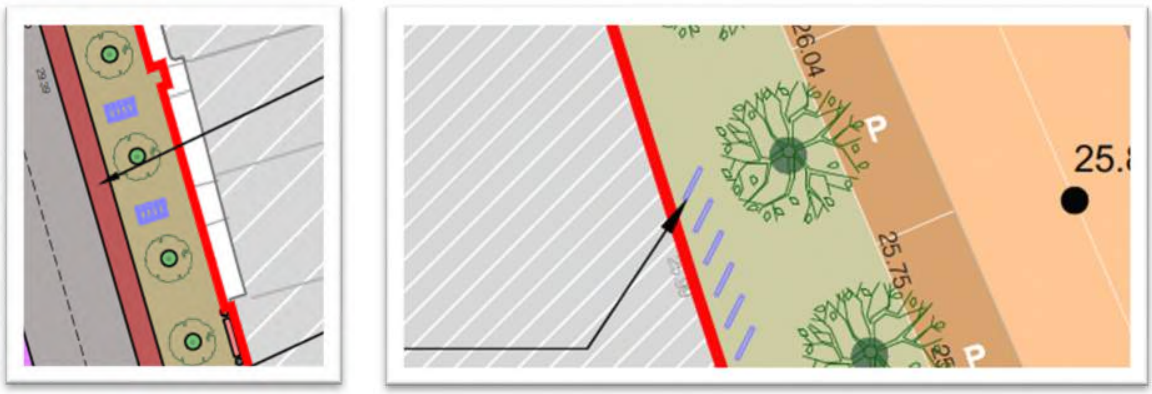
3.4 Problem (Repeat of Issue 3.4 in the Stage 1&2 RSA)

Location

Throughout the scheme, Street furniture including tree pits.

Problem

It is proposed to provide street furniture including trees along the scheme. There is a risk that the effective width of the remaining footpath may be less than the capacity needed to cater for the volumes using it. This could lead to collisions between pedestrians, spillover of pedestrians into cycle tracks or pedestrian collisions with street furniture.



Examples only

Recommendation

It is recommended that a suitable effective width of footpath be maintained throughout the scheme to cater for the typical volumes in Ardee, including increased future pedestrian use as a result of this scheme.

3.5 Problem

Location

Drawing HDC1256 106 Rev 06, Toucan crossing south of Ash Walk.

Problem

The northbound cycle track commences within the L-shaped tactile paving. This area should be shared use and access to the push buttons should be available. The Zebra type road markings should not be provided at toucan crossings as priority may be confusing. A lack of clarity could lead to collisions between vulnerable road users and passing traffic.

Recommendation

It is recommended that a standard layout toucan crossing be provided.

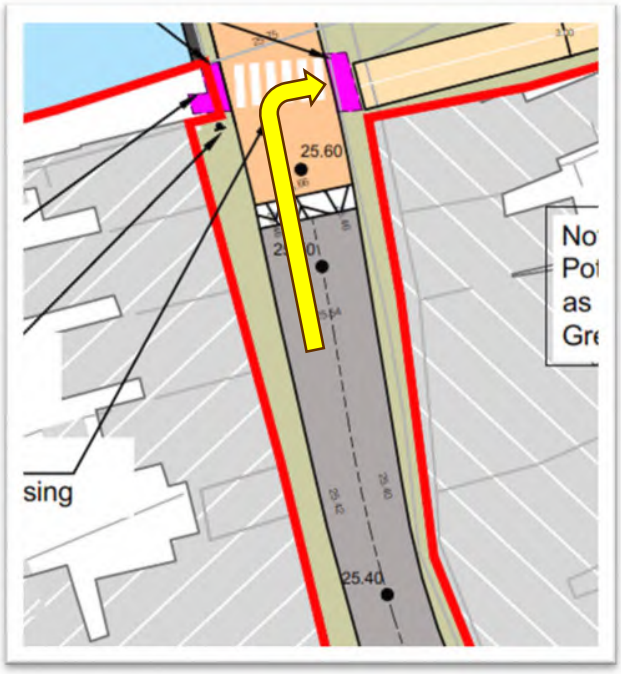
3.6 Problem (Update of Issue 3.6 in the Stage 1&2 RSA)

Location

Drawing HDC1256 107 Rev 07, South of Dee River bridge.

Problem

There is no provision for northbound cyclists to exit the N2 and wait to cross the signalised crossing. Cyclists will therefore continue travelling northbound on the Main Street carriageway thereby increasing the risk of collisions with general traffic. A proposal to direct cyclists via Hale Street was suggested in the Feedback Form of the Stage 1&2 Road Safety Audit. That proposal does not appear to be included in this design update.



Recommendation

It is recommended that a transition from on-road to off-road be provided for cyclists.

3.7 Problem

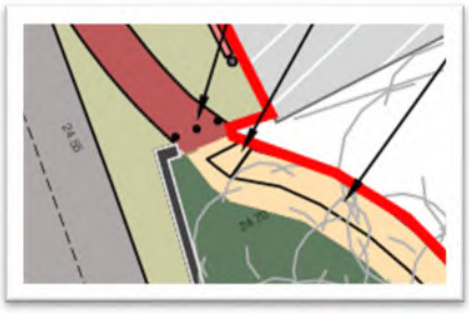
Location

Drawing HDC1256 107 Rev 07, Interface of Shared use and cycle only facilities.

Problem

A lack of guidance at the interface of shared use and cycle only facilities could lead to blind or partially sighted pedestrians entering a cyclists only area which would increase the likelihood of a collision with cyclists.

Examples only



Recommendation
It is recommended that suitable tramline tactile paving be provided at the interfaces.

3.8 Problem (Repeat of Issue 3.8 in the Stage 1&2 RSA)

Location
Drawing HDC1256 107 Rev 07, South of Dee River bridge.

Problem
There is a pinch point in the carriageway south of the bridge. Wide vehicles currently operate an informal shuttle system to pass each other. This may not be possible with the introduction of the new crossing as vehicles may be stuck in position while queuing at the signals. This could lead to side-swipe collisions, damage to bollards and mounting of the footpath. It is noted from the site visit that queuing on the N2 is common for long periods of each day. (It was observed during the most recent site visit that flexible bollards in the footpath at this location have been struck many times and have collapsed)

Recommendation
It is recommended that an analysis be carried out of the likelihood of queues at the pinch point and the possible need for a longer formal shuttle system.

3.9 Problem

Location

Drawing HDC1256 107 Rev 07, Pedestrian /cyclists bridge over the River Dee.

Problem

The two-way cycle track leads to a shared use area on approach to the bridge. Pedestrians have no area to join the shared use area. This could result in pedestrians crossing the road bridge which has a very narrow footpath and pedestrians would be subject to wind forces from heavy goods vehicles possibly leading to loss of balance.

Recommendation

It is recommended that an area be provided for pedestrians to access the pedestrian bridge.

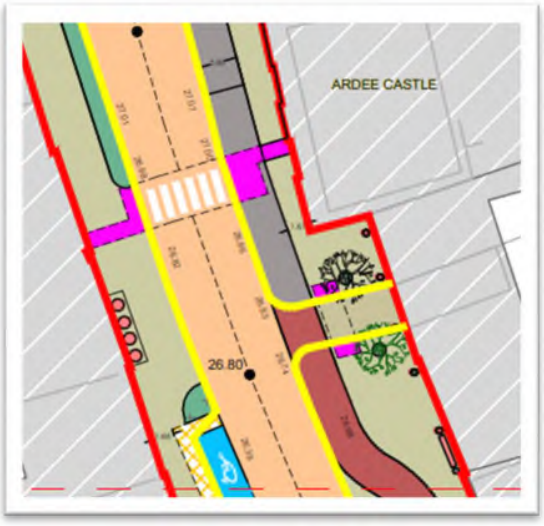
3.10 Problem

Location

Drawing HDC1256 107 Rev 06, General issue, Flush kerbs.

Problem

It is proposed to provide flush kerbs between the footpaths and cycle tracks at areas of raised tables. Given the arterial nature of the N2 and the high percentage of HGVs there will be no resistance to overrun by wide vehicles and no containment of errant vehicles. The flush kerbs will lead to higher turning speeds at side roads and private accesses which would increase injury severity if a vulnerable road user is struck. The flush kerbs also provide no warning for blind or partially sighted pedestrians that they could be entering an area trafficked by vehicles.



Example area only.

Recommendation

It is recommended that a suitable kerb upstand be provided except at pedestrian crossing areas.

3.11 Problem (Repeat of Issue 3.11 in the Stage 1&2 RSA)

Location

Drawing HDC1256 107 Rev 07, Car park north of Dee River crossing.

Problem

Some proposed car parking spaces appear to be difficult to enter and egress especially if the adjacent spaces are occupied. This could lead to material damage of vehicles or inaccessibility for some users with mobility impairment but not sufficient to be entitled to use the disabled spaces.

Recommendation
It is recommended that adequate turning space be provided for all car parking spaces.

3.12 Problem

Location
Drawing HDC1256 107 Rev 0, Two-way cycle track.

Problem
The two -way cycle track along the eastern side may not be obvious to all users that it is two-way This could lead to lack of discipline by cyclists travelling side by side thereby increasing the risk of collisions with oncoming cyclists.

Recommendation
It is recommended that additional cycle road marking logos with arrow heads be provided at regular intervals. (These are provided on some drawings).

3.13 Problem (Update of Issue 3.13 in the Stage 1&2 RSA)

Location
Drawing HDC1256 107 Rev 07, Cycle track adjacent to the carriageway.

Problem
Some portions of the two-way cycle track are adjacent to the N2 carriageway. The N2 (being a national primary route linking Dublin to Derry and connecting with the N52 (without tolls) has a high percentage of heavy goods vehicles (HGVs) and the lack of a buffer could lead to less confident cyclists wobbling,

especially if affected by the wind forces associated with HGVs, resulting in collisions. This may particularly be an issue at raised tables where there are flush kerbs only to segregate cyclists from general traffic. There was a suggestion of having a 30km/hr speed limit in Ardee town centre in the feedback form of the Stage 1&2 Road Safety Audit. This does not however appear to be part of the current proposal.

Recommendation

It is recommended that the 30km/hr speed limit be confirmed or that a buffer zone, bollards or a suitable kerb upstand be provided.

3.14 Problem (Repeat of Issue 3.14 in the Stage 1&2 RSA)

Location

Drawing HDC1256 107 Rev 07, Pedestrian Crossing at Ardee Castle.

Problem

The pedestrian crossing at Ardee castle has a two-way cycle track on the eastern side. A lack of warning could lead to blind or partially sighted pedestrians not realising they are sharing space with cyclists.

Recommendation

It is recommended that a well-defined shared area be provided with suitable ladder and tramline tactile paving at either side. This applies to other similar crossings throughout the scheme.

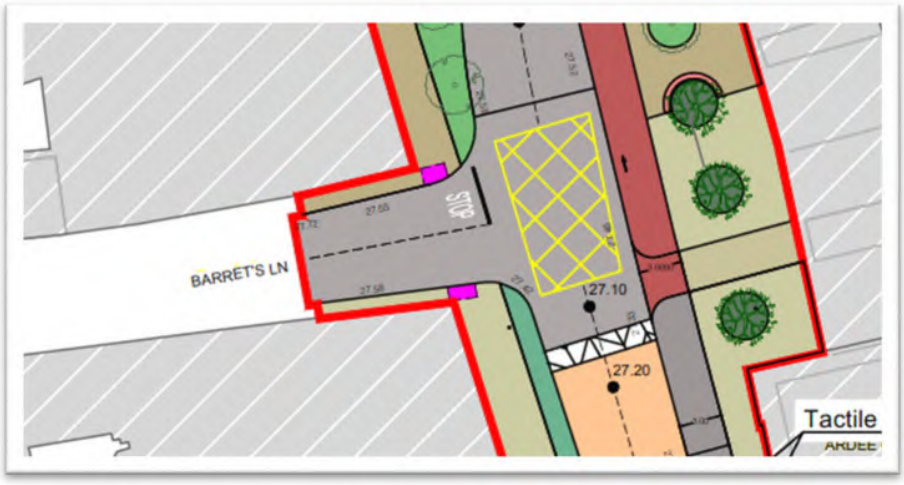
3.15 Problem (Repeat of Issue 3.15 in the Stage 1&2 RSA)

Location

Drawing HDC1256 107 Rev 07, N52 Barret's Lane.

Problem

The N52 is a national secondary road which is proposed to bypass Ardee in the future as part of a separate scheme. There is however no guarantee that this scheme will progress and a high volume of HGVs will continue to use the N52 if this scheme progresses. Although the N52 junction is being built out from its current layout it is unclear if HGVs will be able undertake the turning manoeuvres from and to the N2 in both directions. A lack of space would lead to overrunning of the footpaths, cycle track or side swipe/head -on collisions with other vehicles.



Recommendation

It is recommended that a swept path analysis be carried out for HGVs to ensure that turning manoeuvres can be undertaken. If this cannot be achieved a signalised junction may be required.

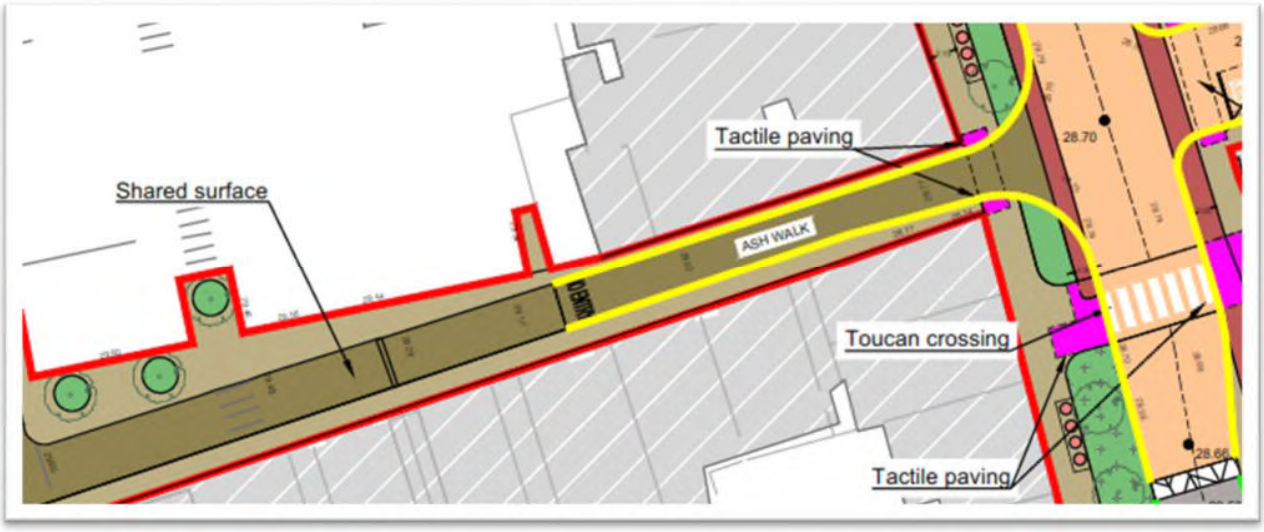
3.16 Problem

Location

Drawing HDC1256 106 Rev 06, Ash Walk, Shared Street.

Problem

Ask Walk is shown to be a 'Shared Street' It is unclear what distinguishing features or what signage will be provided to indicate this to users, especially drivers, as they enter this area. It appears that the footpaths are to be retained beyond the initial section from the N2 which does not signify a shared street but segregated facilities for pedestrians. A lack of clarity can lead to drivers presuming priority resulting in collisions.



Recommendation

It is recommended suitable details be provided to denote a 'shared street' at its transition from the N2.

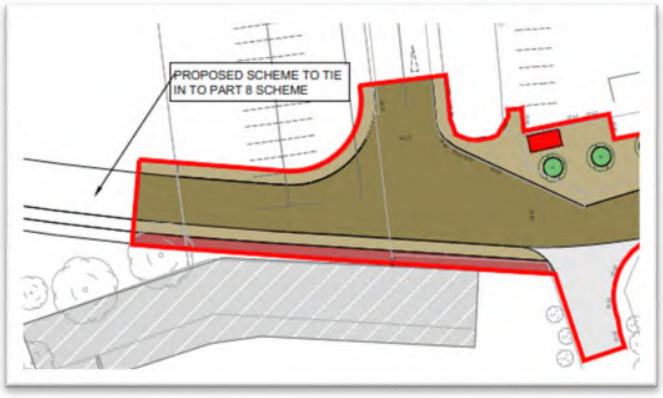
3.17 Problem

Location

Drawing HDC1256 106 Rev 06, Ash Walk.

Problem

Ash Walk is shown to tie-into a Part 8 scheme at the western end. Ash Walk is shown as a 'Shared Street'. It is unclear if the Part 8 scheme is to be a shared street and if its nature and use will therefore be consistent. A change of street type could increase the risk of collisions with vulnerable road users.



Recommendation
It is recommended that consistency in street type be provided.

3.18 Problem (Repeat of Issue 3.18 in the Stage 1&2 RSA)

Location
Drawing HDC1256 106 Rev 06, Ash Walk.

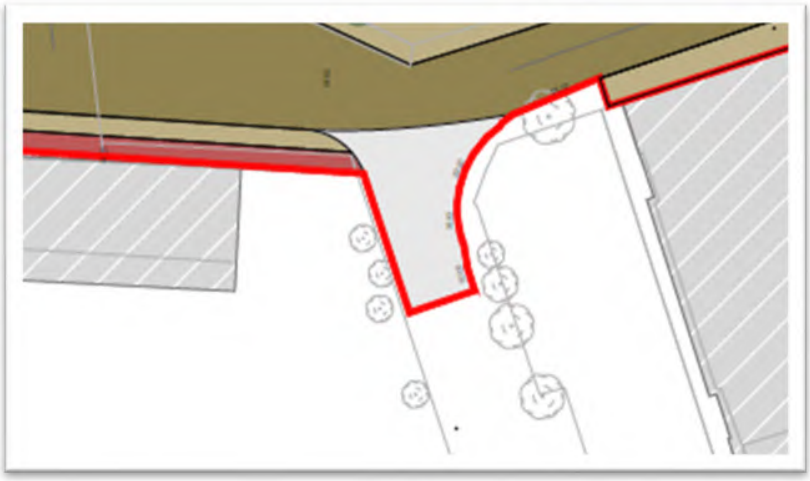
Problem
Ash Walk is relatively long and straight and one-way. This could lead to high vehicle speeds. High speeds leads to high injury severity if a vulnerable road users is struck by an errant vehicle.

Recommendation
It is recommended that traffic calming be provided along Ash Walk. (It is unclear if an existing raised table is to be retained)

3.19 Problem

Location
Drawing HDC1256 106 Rev 06, Ash Walk, tie in with link road to the N52.

Problem
The link road to the N52 from Ash Walk is not shown to be a shared street. A change of street type could increase the risk of collisions with vulnerable road users.



Recommendation

It is recommended that that consistency in street type be provided or that a suitable transition be provided.

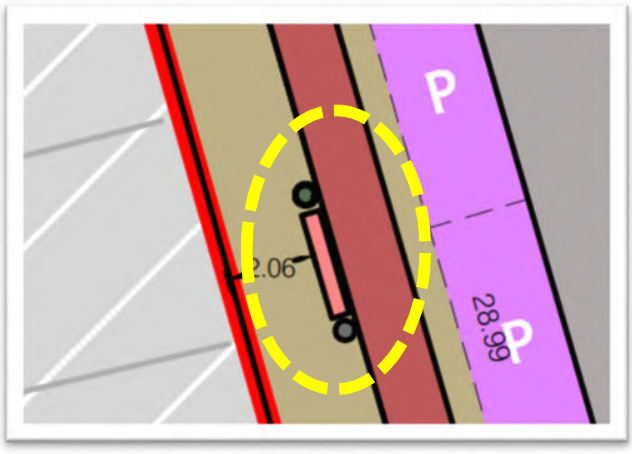
3.20 Problem

Location

Drawing HDC1256 106 Rev 06, benches adjacent to the cycle lane.

Problem

It is proposed to provide benches adjacent to the cycle track. If they are located too close to the cycle track they may be hazards for cyclists who may get their handlebars caught leading to loss of control and falls.



Example only

Recommendation

It is recommended adequate offset be provided at the edges of the cycle track without obstacles.

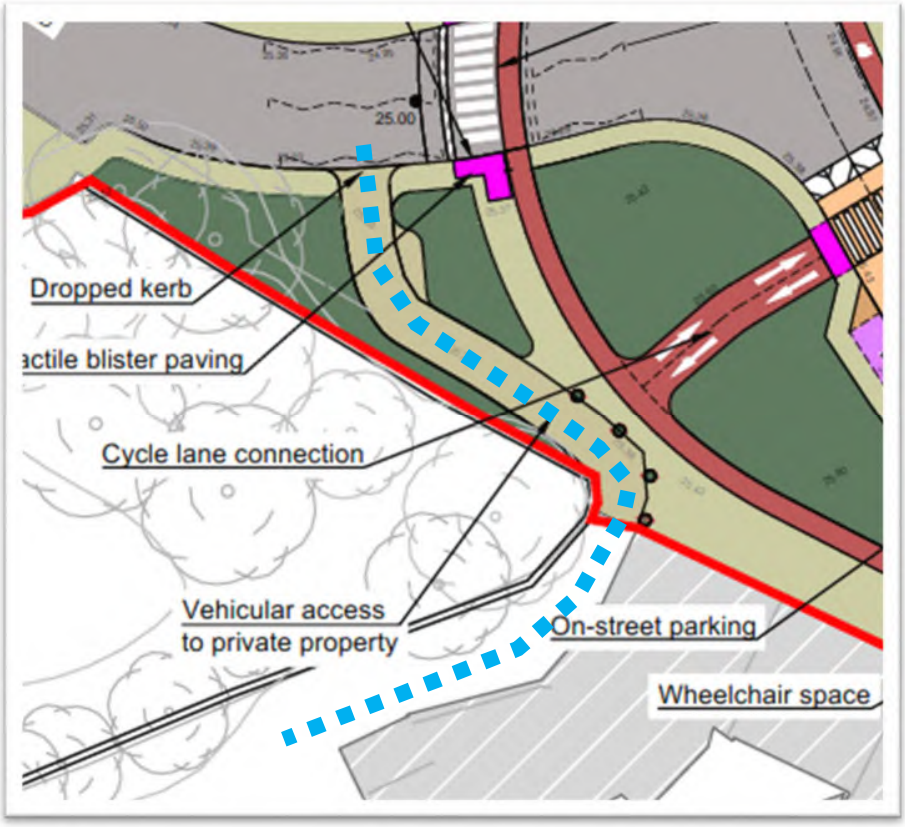
3.21 Problem (Repeat of Issue 3.21 in the Stage 1&2 RSA)

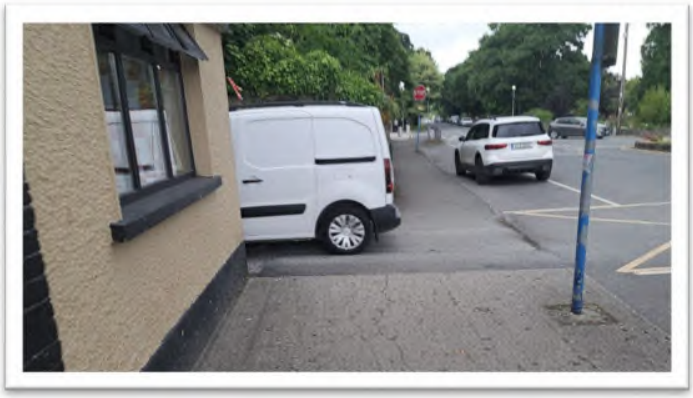
Location

Drawing HDC1256 102 Rev 07, Vehicular Access to Public House.

Problem

The vehicular access to the car park of the bar at the junction of Golf Links Road is for a single vehicles only. Drivers entering the route will not have inter-visibility to drivers leaving which could lead to reversing onto Golf Links Road resulting in collisions with through traffic or crossing pedestrians.





Recommendation

It is recommended that a passing bay be provided. Depending on the amount of usage this lane may need to be segregated from the pedestrian route.

3.22 Problem

Location

Drawing HDC1256 102 Rev 07, Golf Links Road Junction.

Problem

The corner radii at the Golf Links Road junction with the N2 are large. This could lead to high turning speeds and thus higher severity collisions.

Recommendation

It is recommended that the corner radii be reduced

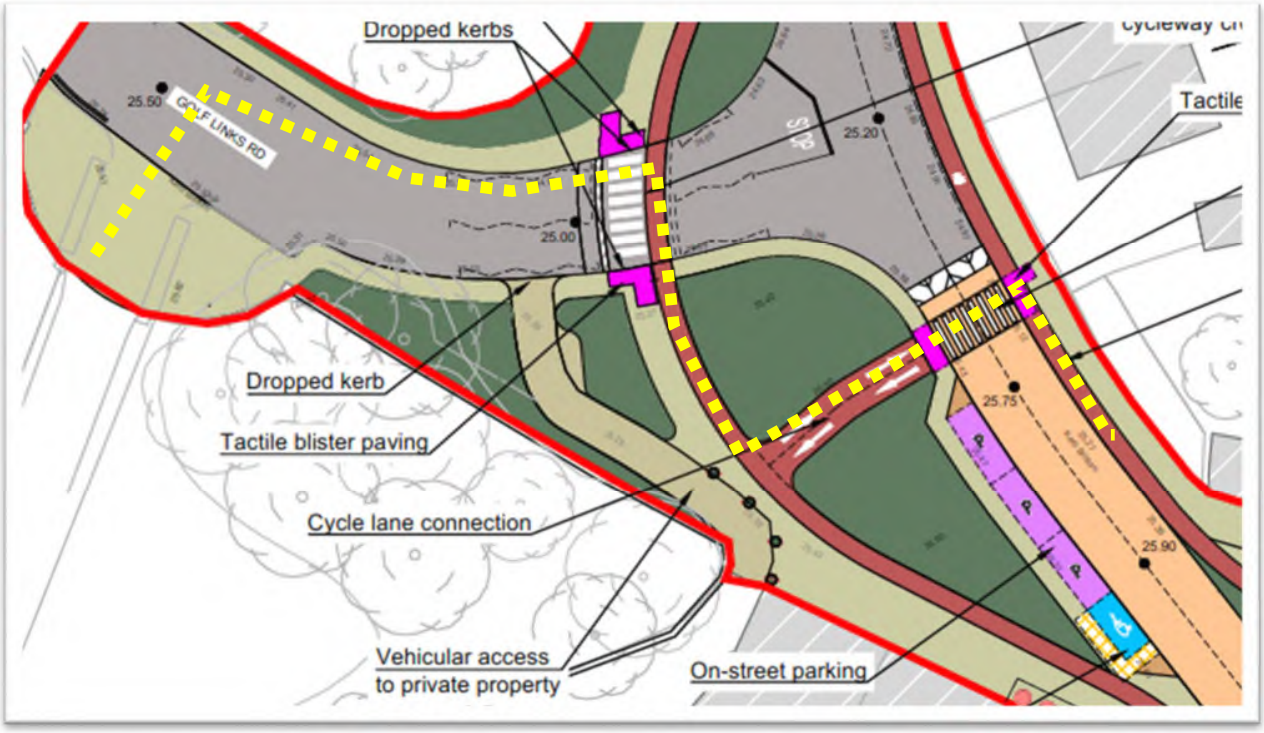
3.23 Problem

Location

Drawing HDC1256 102 Rev 07, Crossing on Golf Links Road.

Problem

A two-way section of cycle track is proposed to allow cyclists access the southbound cycle track. There is however no link for cyclists coming from Golf Links Road to do so. The new developments on the St. Joseph's site will generate cyclists movements that are not catered for. A lack of facilities will lead to cyclists travelling contra flow on the northbound cycle track which would increase the likelihood of collisions with other cyclists.



Recommendation

It is recommended that a link to the southbound site be provided to avoid cyclists travelling contraflow on the northbound cycle track.

3.24 Problem (Repeat of Issue 3.24 in the Stage 1&2 RSA)

Location
Drawing HDC1256 102 Rev 07, Northern cycle track tie-in.

Problem
The northbound cycle track tapers gently from off-road to on-road. This could lead to cyclists entering the busy N2 without looking to see if traffic is approaching. This could lead to 'squeezing' and collisions especially as the N2 carriageway width has been reduced.

Recommendation
It is recommended that the cycle track be terminated with a jug turn type arrangement whereby cyclists will be perpendicular to traffic and will have to stop before entering the carriageway.

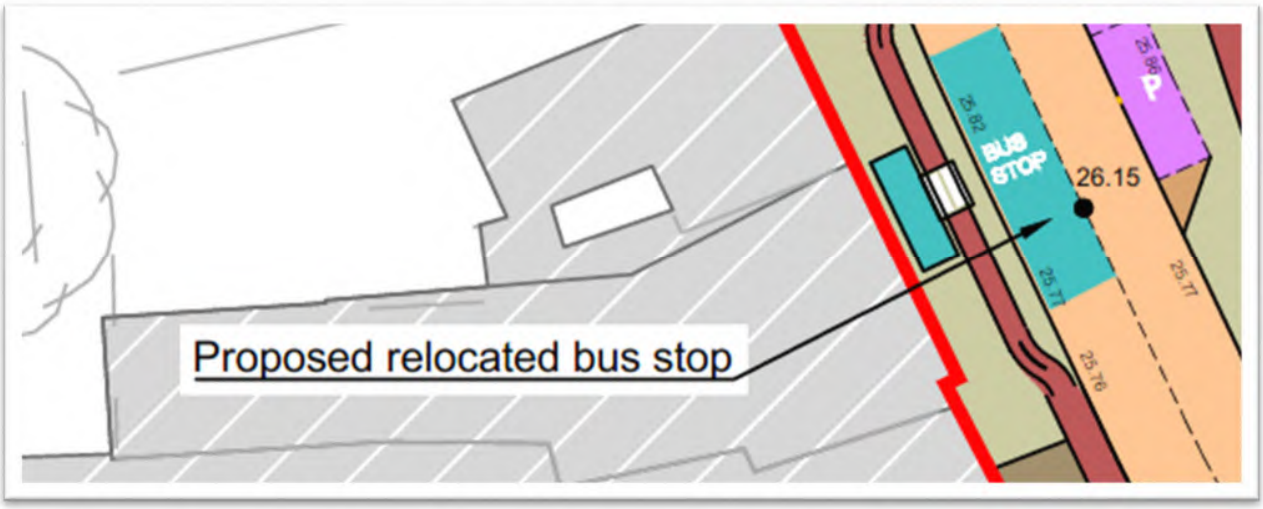
3.25 Problem

Location

Drawing HDC1256 102 Rev 07, Northbound bus shelter.

Problem

It is unclear what type of bus shelter is proposed at the relocated northbound bus stop. A full panel shelter could lead to a lack of space for pedestrians to pass leading to some pedestrians entering the cycle track where they would be at risk of being struck by passing cyclists.



Recommendation

It is recommended that a suitable type shelter be provided to avoid excessive restrictions in the footway.

3.26 Problem

Location

Drawing HDC1256 102 Rev 07, Disabled parking space.

Problem

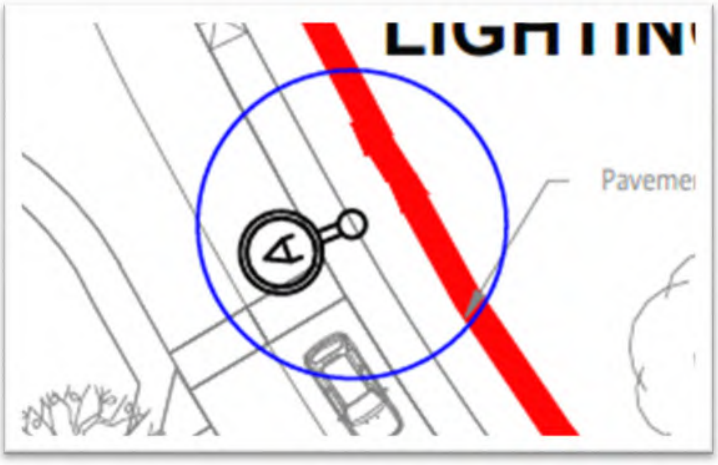
The buffer zone for the disabled parking space to the south of the southbound bus stop coincides with the footpath. It is unclear what the levels will be and if a wheelchair user will be able to use the space freely to access all areas of the car. A lack of space could lead to users entering the carriageway where they would be at greater risk of being struck by a passing vehicle.

Recommendation
It is recommended that that the footpath be rerouted to the rear of the buffer zone.

3.27 Problem

Location
Drawing ARD-MET-ZZ-XX-DR-E-6001A Rev P01, Lighting Columns, General issue.

Problem
Some lighting column locations are shown on the boundary between the cycle track and the footpath. The columns would be hazards for both cyclists and pedestrians.



Example only

Recommendation
It is recommended that the columns be located to the rear of the footpath or in green areas.

3.28 Problem

Location

Drawing HDC1256 102 Rev 07 (kerbs)

Problem

Flush kerbs are shown at the bus stops. This could lead to inaccessibility for some users resulting in loss of balance and falls.

Recommendation

It is recommended that kassel kerbs be provided at the bus stops with suitable transition gradients.

3.29 Problem

Location

Drawing HDC1256 106 Rev 06 (kerbs)

Problem

Full height kerbs are shown through the buffer zones of the disabled parking spaces. This could lead to inaccessibility, loss of balance, inability to use wheelchairs and to users entering the carriageway where they would be at greater risk of colliding with passing vehicles.

Example only

Recommendation

It is recommended that suitable kerbing and access to the footpath be provided outside the buffer zones.

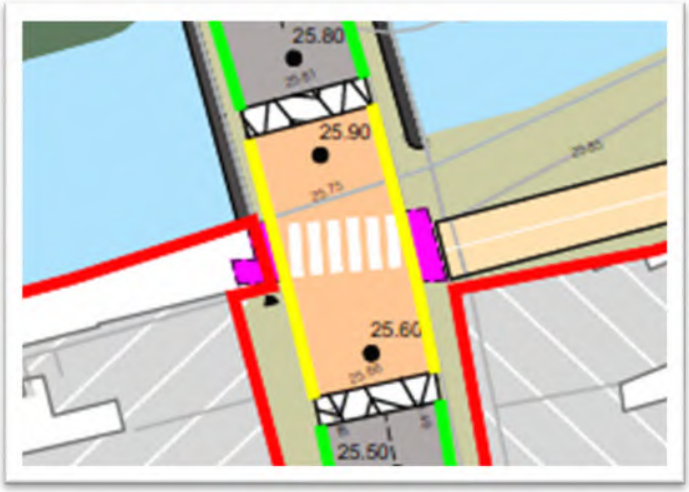
3.30 Problem

Location

Drawing HDC1256 1002Rev 06 (kerbs)

Problem

Flush kerbs are shown at the raised table partially over the river Dee bridge. A lack of kerb upstand will lead to no resistance to errant vehicle whose driver may loose concentration even at low sped resulting in a collision with the bridge parapet. This could lead to structural damage.



Recommendation

It is recommended that flush kerbs only be provided at the crossing point.

3.31 Problem

Location

Drawing 533273-NOD-01-XX-DR-C-020101 P03, Gullies at raised tables and crossing points for pedestrians and cyclists.

Problem

Gullies have not been provided upstream of each raised table and each pedestrian/cyclist crossing. This could lead to surface water ponding, loss of traction and loss of control in icy weather and slips and falls for vulnerable road users.

Example only

Recommendation

It is recommended that gullies be provided upstream of all raised area and crossing points to avoid surface water ponding.

3A Issues Identified in this Stage 2 Audit (October 2024)

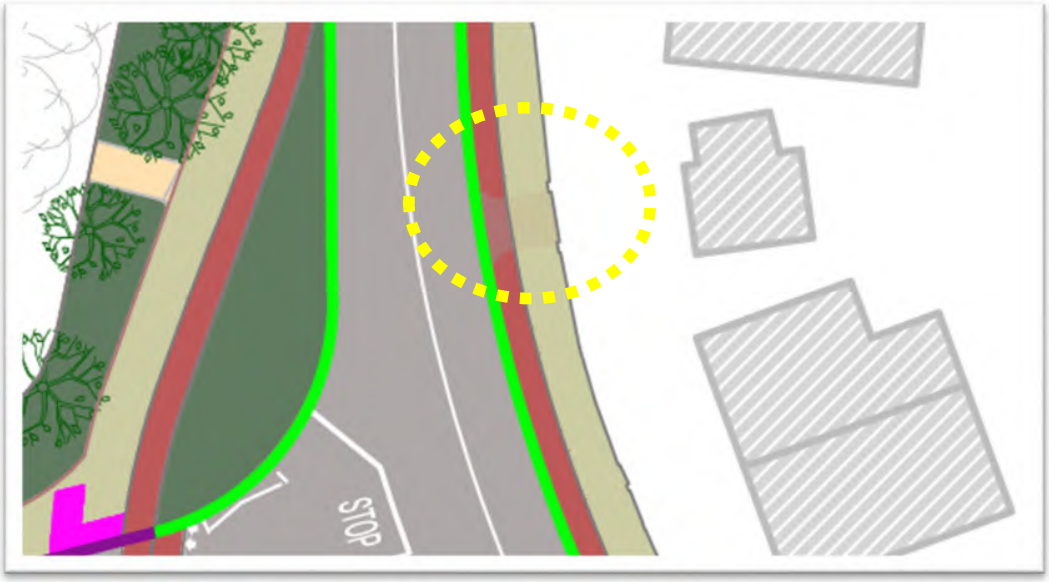
3A.1 Problem

Location

Drawing HDC1256 1002 (K) Rev 03 Kerb Layout, Access to private garage off N2.

Problem

The drawing shows a 125mm high kerb at the proposed vehicular access to the private garage on the eastern side of the N2 just north of the Golf Links Road junction. A high kerb could lead to vehicles 'bouncing back' when trying to access the driveway to the garage resulting in rear-end collisions.



Recommendation

It is recommended that the kerb height be adjusted to facilitate vehicular access.

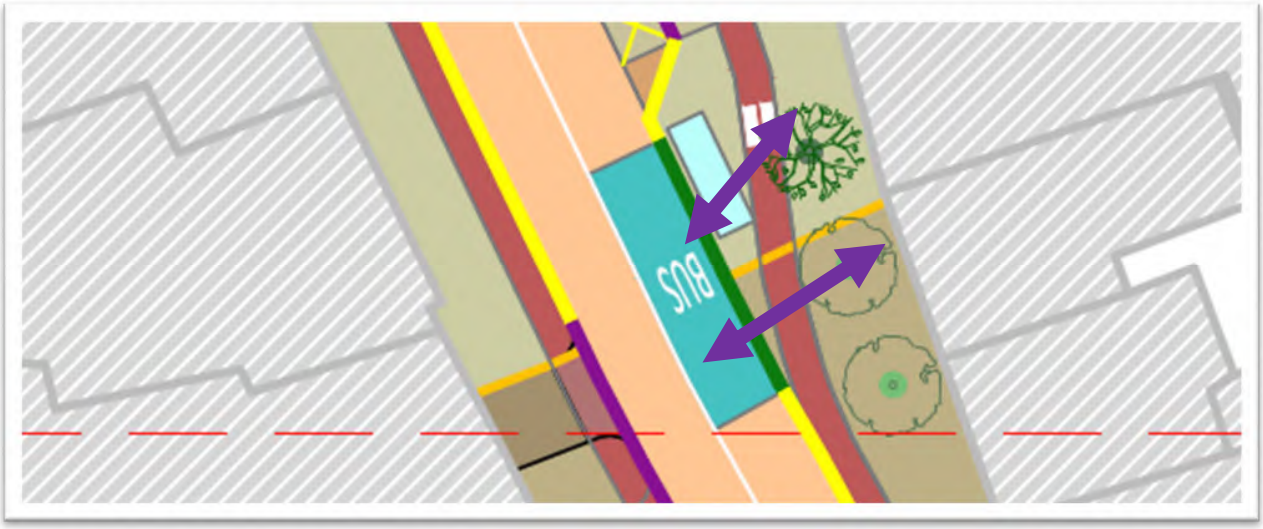
3A.2 Problem

Location

Drawing HDC1256 1002 (K) Rev 03 Kerb Layout, Relocated Bus stop and bus shelter, south bound.

Problem

The location of the bus shelter between the bus stop and the pedestrian crossing of the cycle track does not appear to allow enough space for pedestrian movements from the footpath if the shelter will have a back or front panels. This could lead to pedestrians crossing the cycle track away from the highlighted striped areas resulting in a higher likelihood of collision with cyclists who do not expect pedestrians to cross. Also, if passengers alight from the front of the bus there is very little space between where they will step out and the cycle track. This could lead to collisions with passing cyclists.



Recommendation

It is recommended that the layout be changed to provide adequate space for bus users without conflict with cyclists.

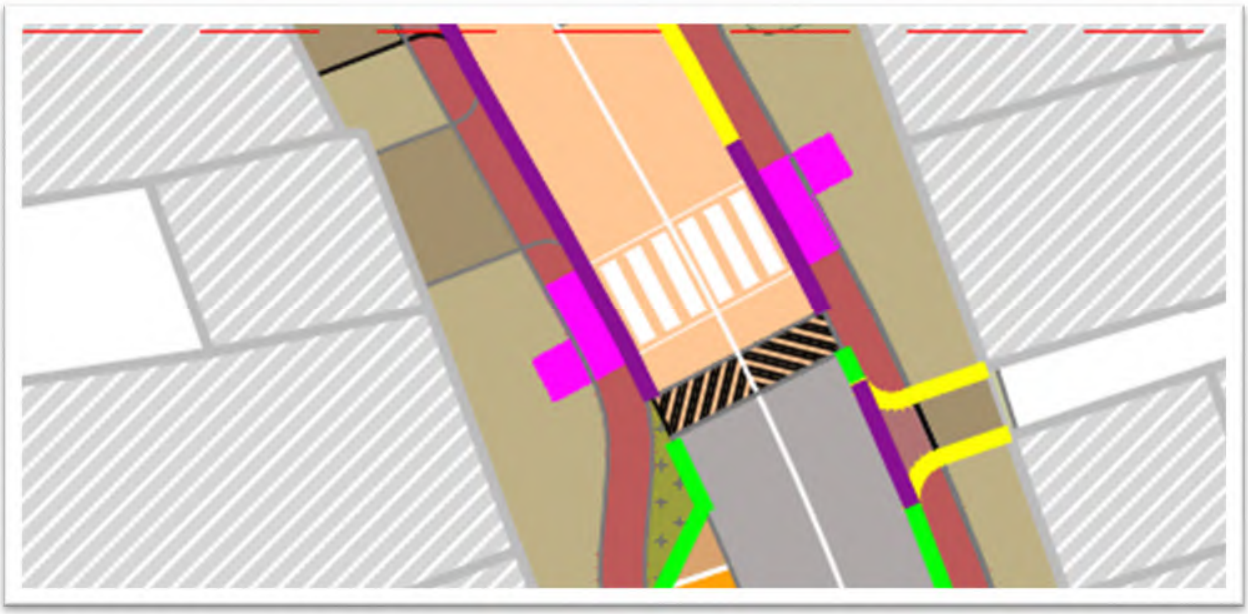
3A.3 Problem

Location

Drawing HDC1256 1002 (K) Rev 03 Kerb Layout, Zebra Crossing.

Problem

The tactile paving for the zebra crossing is within the cycle lane. It may not be clear to cyclists that pedestrians have priority as they approach the crossing. This could result in collisions between the two user groups.



Recommendation

It is recommended that a shared use area be developed at both sides of this zebra crossing and other similar crossings.

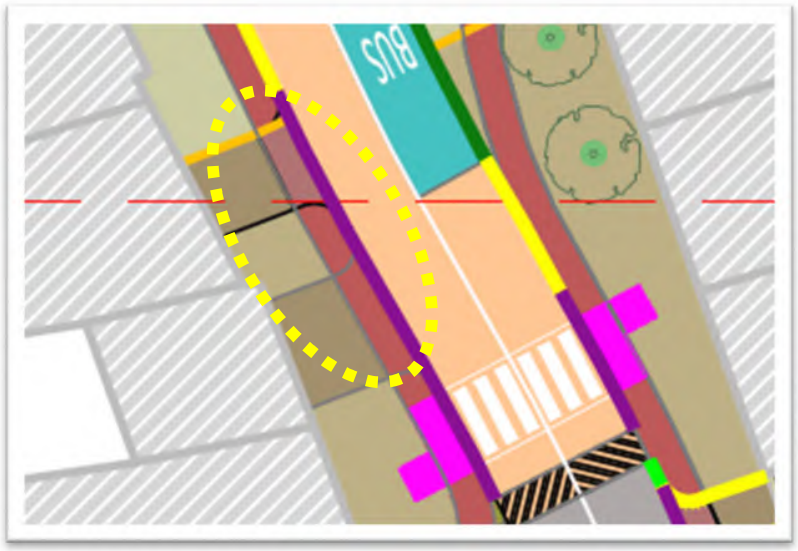
3A.4 Problem

Location

Drawing HDC1256 1002 (K) Rev 03 Kerb Layout, Flush Kerbing.

Problem

Flush kerbing is provided beyond the extents of the crossing areas at the zebra crossing. A blind or partially sighted pedestrian may inadvertently enter the carriageway if they cannot detect a level difference. This could result in collisions with passing vehicles.



Example only

Recommendation

It is recommended that flush kerbs only be provided at crossing points or access areas for pedestrians only.

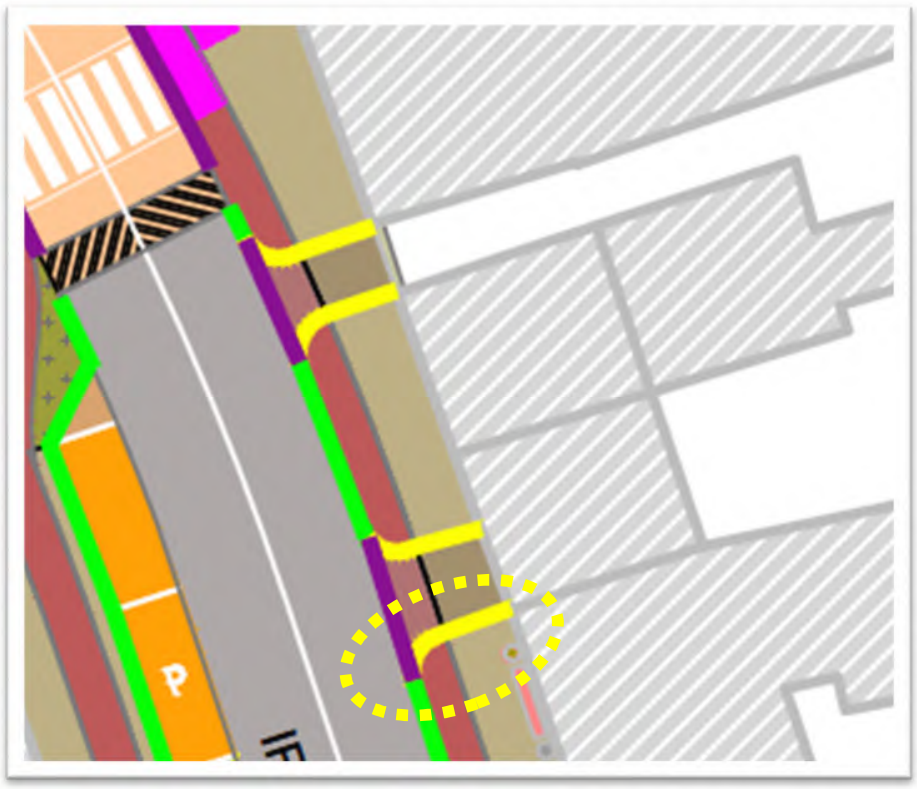
3A.5 Problem

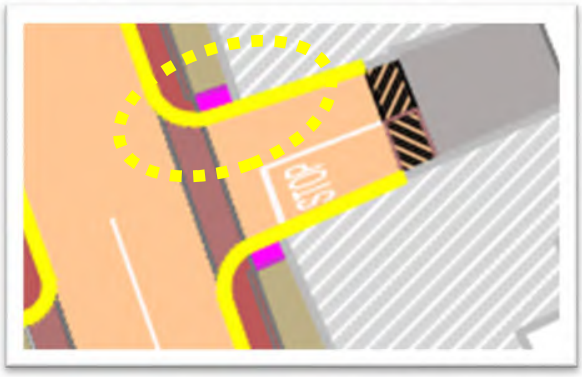
Location

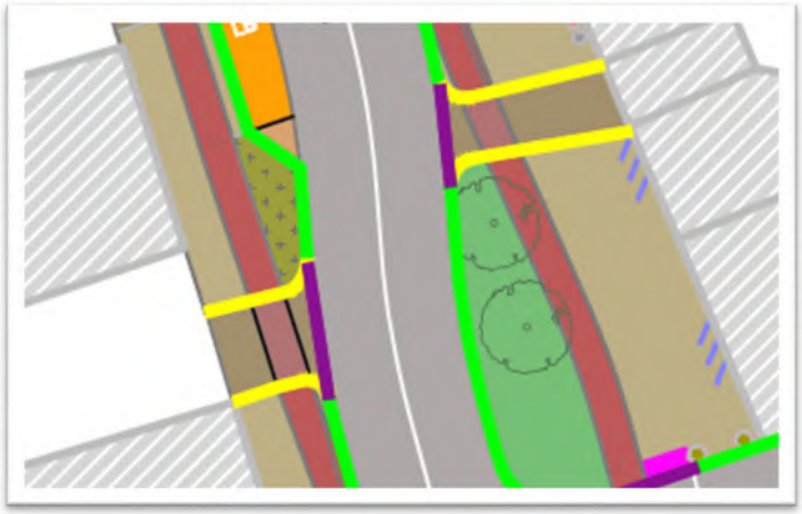
Drawing HDC1256 1002 (K) Rev 03 Kerb Layout, 50mm high kerbing at accesses.

Problem

It is proposed to provide 50mm high kerbing at some accesses across the footpath. This would be a trip hazard and would lead to inaccessibility for mobility impaired pedestrians.







Examples only

Recommendation

It is recommended that flush kerbs be used or no kerbs and that continuous footpath and cycle track facilities be used.

3A.6 Problem

Location

Drawing HDC1256 1004 (K) Rev 03 Kerb Layout, Tactile Paving.

Problem

The tactile paving shown at the western side crossing does not match in extent on both sides. There is a risk that blind or partially sighted pedestrians may use the tactile paving as a guide to have completed the crossing however may not detect it is not provided directly across from the start. In addition, the shading for the uncontrolled tactile paving is shown the same as controlled tactile paving. It is assumed that this is just a draughting issue and that buff coloured tactile paving will be used at uncontrolled crossings.

Recommendation

It is recommended that the extent of the tactile paving be matched on both sides.

4.0 Observations

4.1 Observation

The following have not been provided to the Audit Team;

- Site Clearance
- Cross sections
- Some road markings (centreline of N2)
- Some signage including directional signage
- Utility diversions.
- Ramp gradients at raised tables.
- Colour and type of tactile paving.

4.2 Observation

The bridge over the River Dee may need to be checked for additional dead weight and loading due to the propose raised table.

4.3 Observation

Departures from Standard (Design Cycle Manual and TII Publications where appropriate) have not been provided to the Audit Team.

4.4 Observation

Some electric vehicle charging points have recently been installed in the car park north of the River Dee bridge.

4.5 Observation

It is assumed that suitable gradient transition kerbs will be provided between the full height kerbs and lower or flush kerbs.

4.6 Observation

EV charger locations and infrastructure has not been shown on the drawings

4.7 Observation (October 2024)

The swept path for HGV entering Ash Walk would be extremely difficult to carry out. It is assumed that the N52 access would be used by such vehicles.

5.0 Audit Statement

We certify that we have examined the site and the information provided. The examination has been carried out with the sole purpose of identifying any aspects of the design which could be added, removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions which we would recommend should be studied for implementation. The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

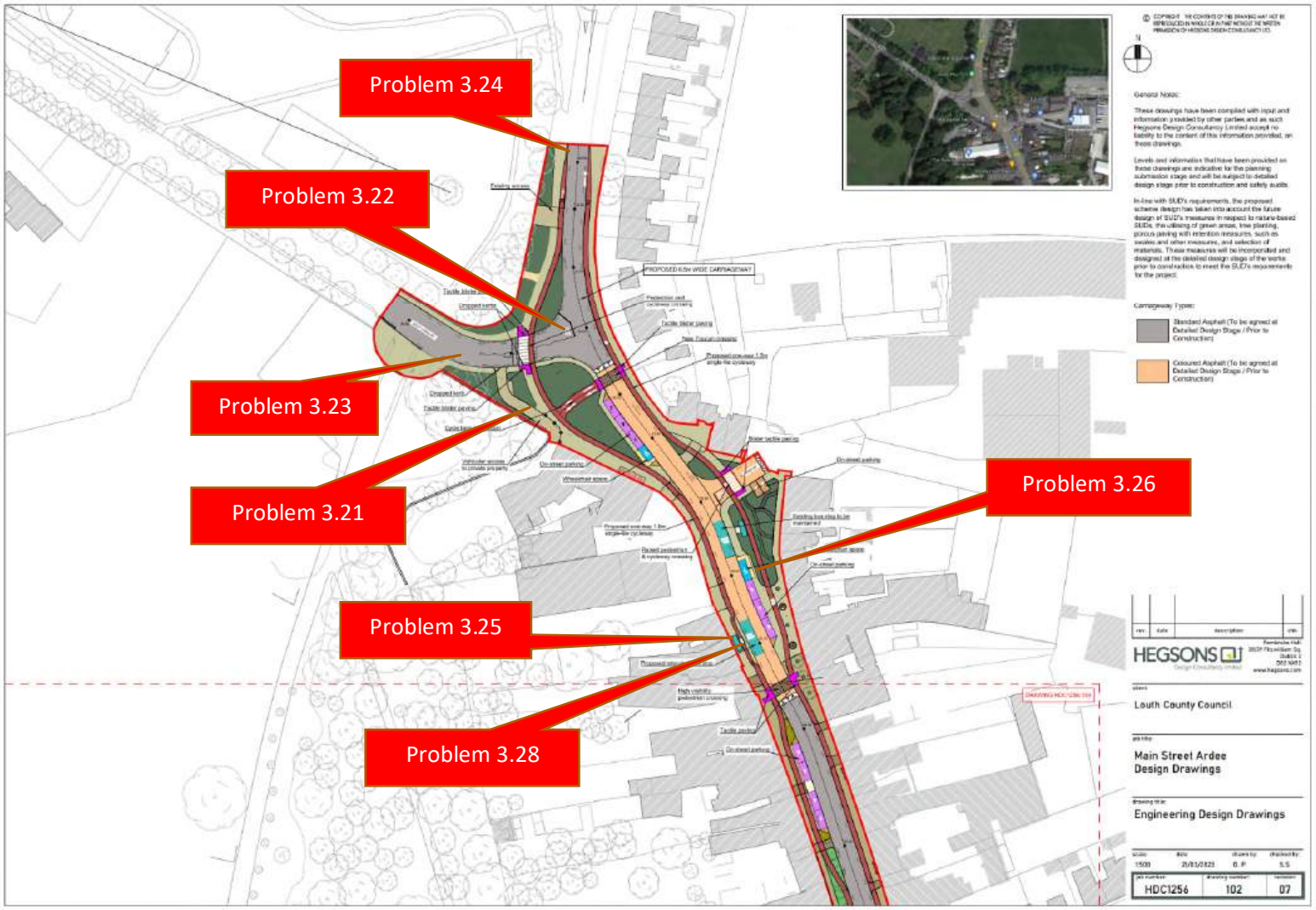
Norman Bruton **Signed:** 

(Audit Team Leader) **Dated: 25-10-2024**

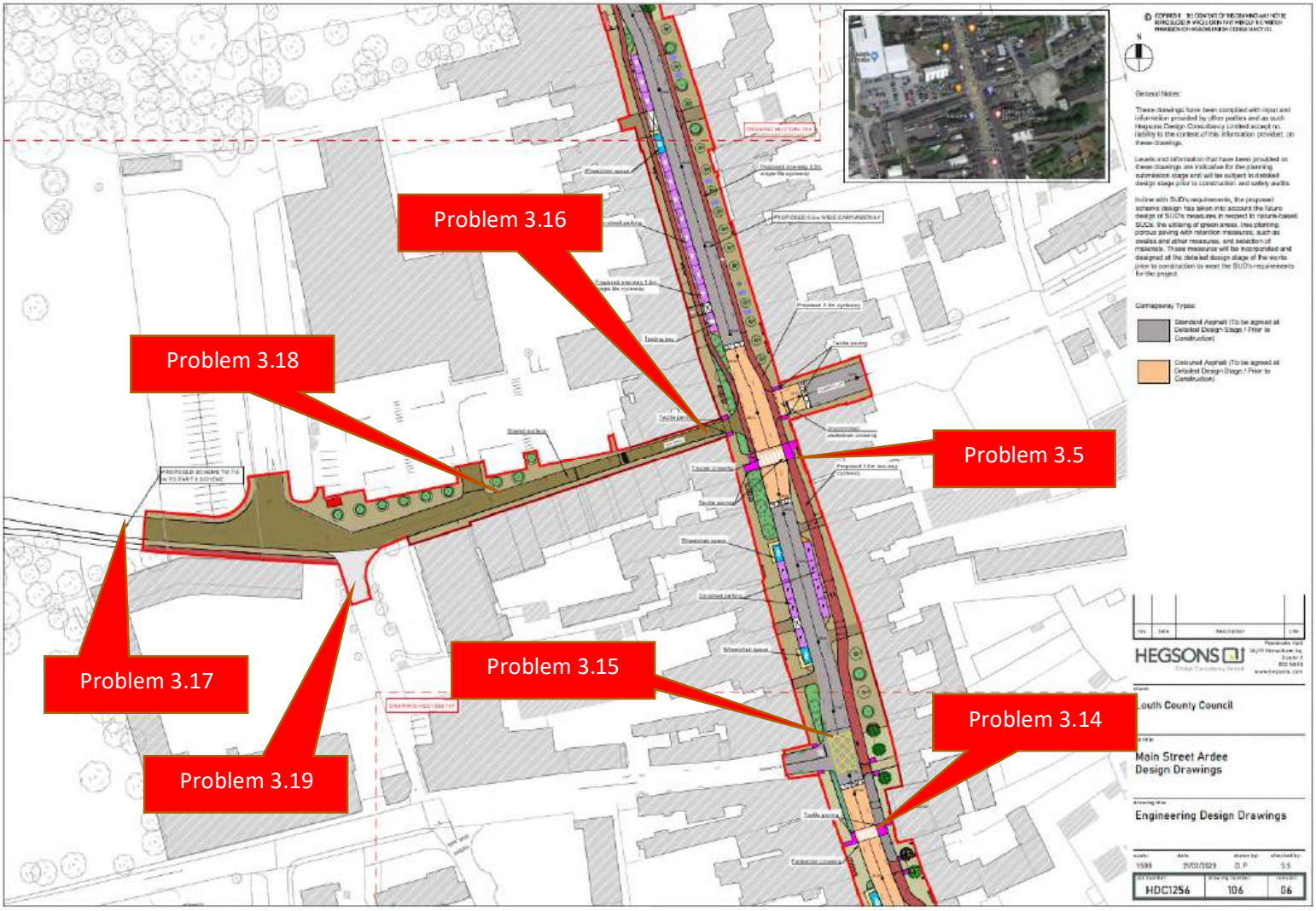
Owen O'Reilly **Signed:** 

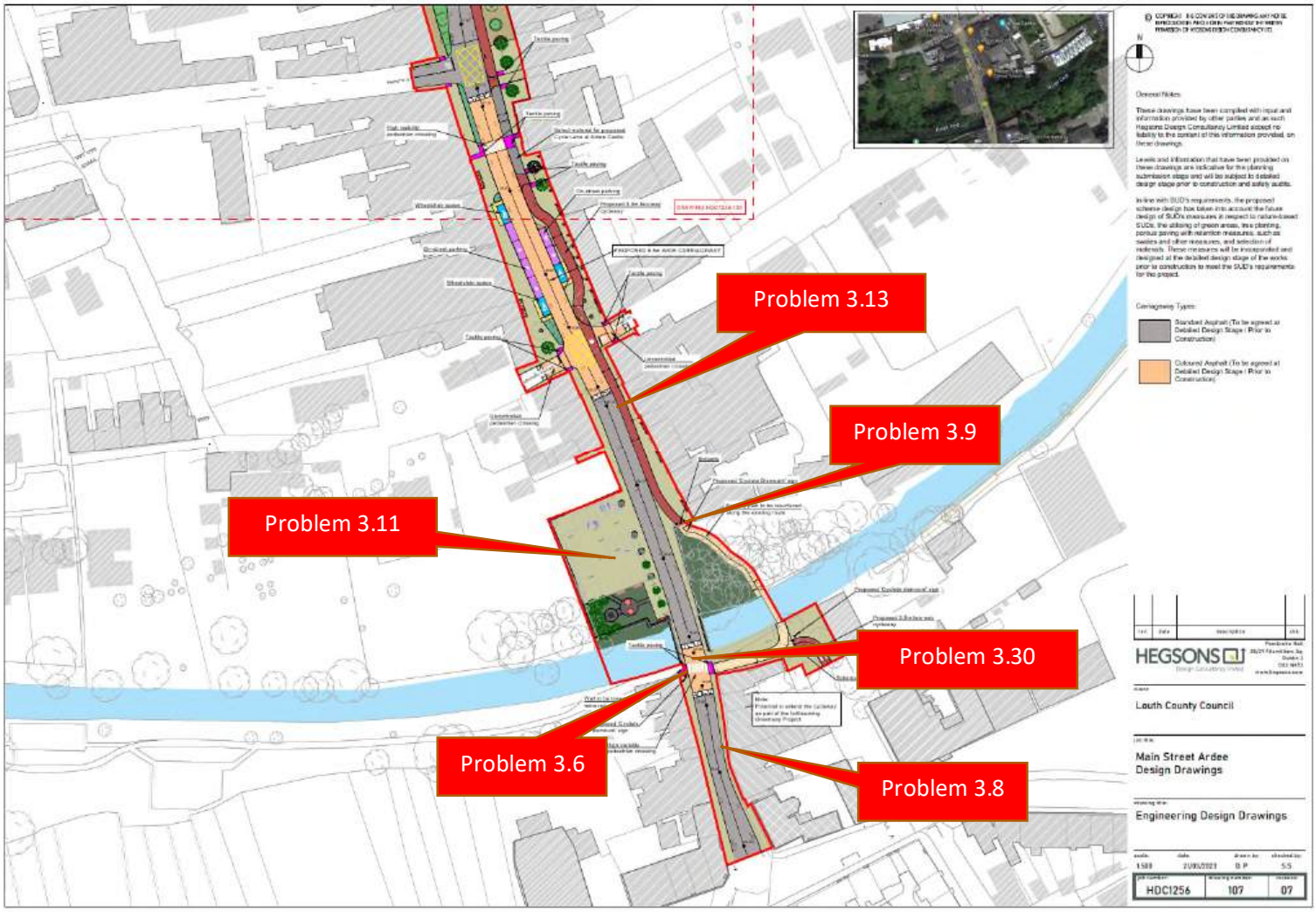
(Audit Team Member) **Dated: 25-10-2024**

Appendix A – Problem Location Map (June 2024)

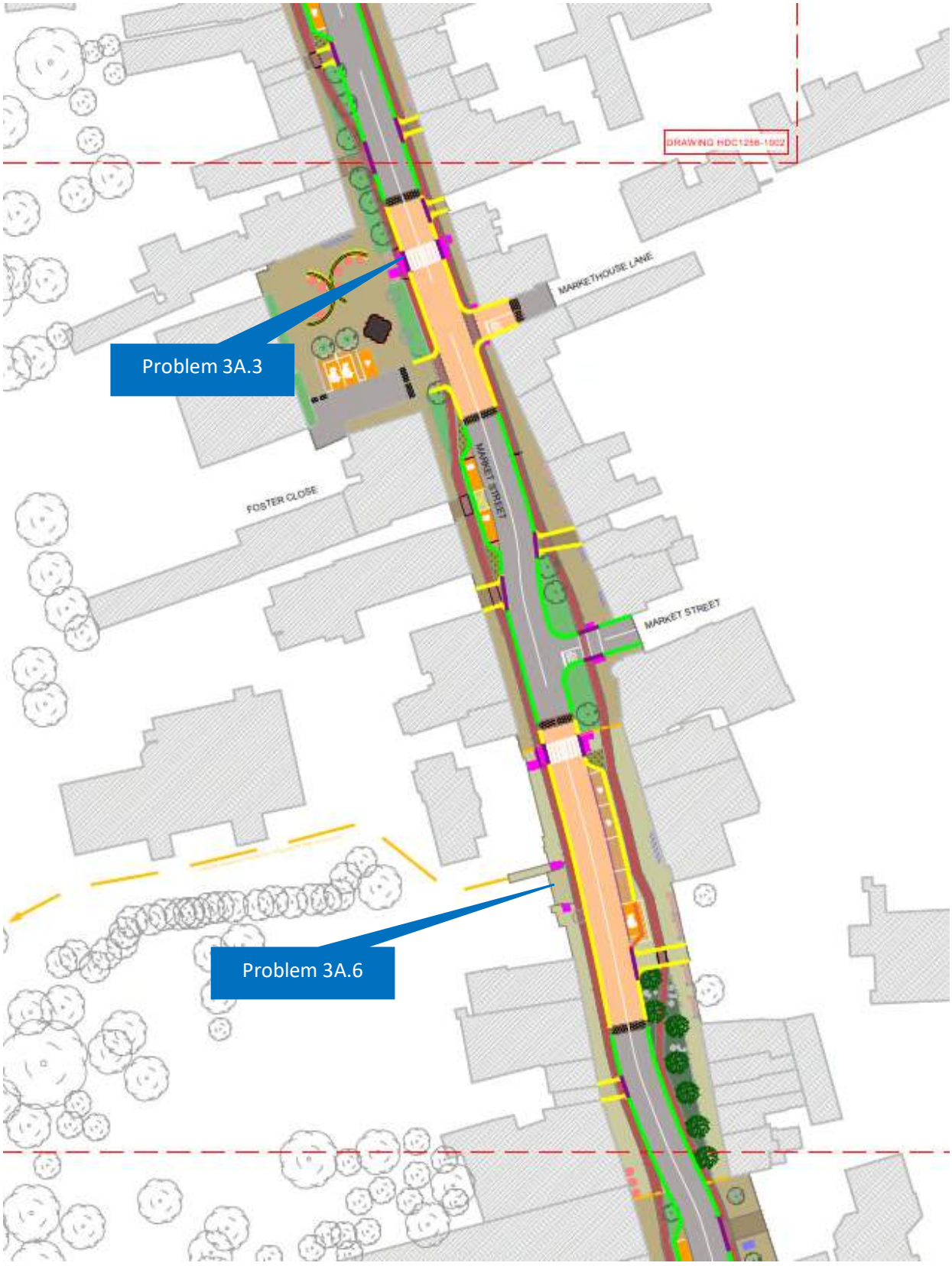


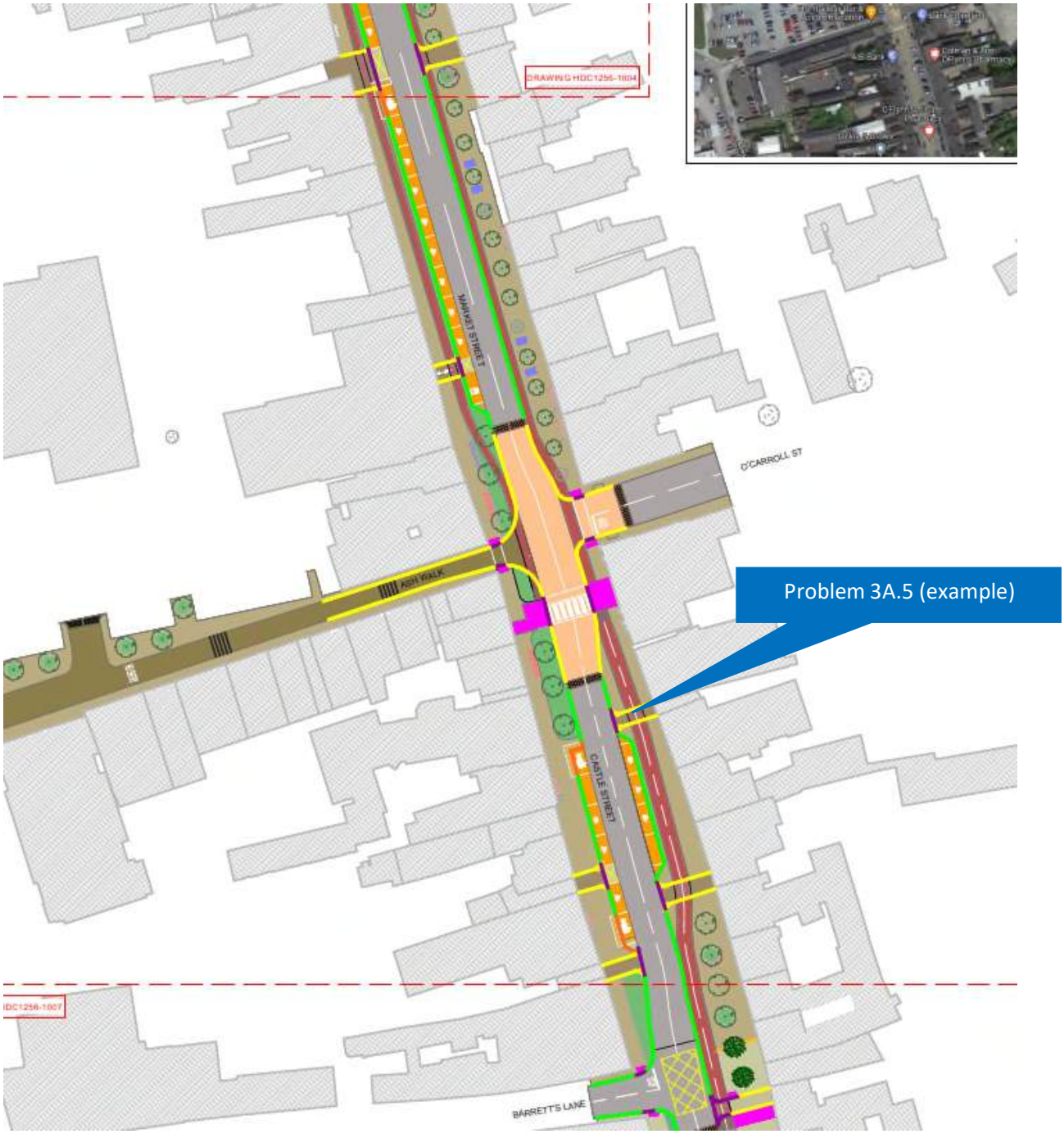

General Notes:
Carriageway Types:
Standard Asphalt (To be agreed at Detailed Design Stage / Prior to Construction)
Coloured Asphalt (To be agreed at Detailed Design Stage / Prior to Construction)
HEGSONS
Louth County Council
Main Street Ardee
Design Drawings
Engineering Design Drawings
HDC1256
104
05


Problem 3.16
Problem 3.18
Problem 3.5
Problem 3.17
Problem 3.15
Problem 3.14
Problem 3.19
HEGSONS
Louth County Council
Main Street Ardee
Design Drawings
Engineering Design Drawings
HDC1256
106
06


Problem 3.13
Problem 3.9
Problem 3.11
Problem 3.30
Problem 3.6
Problem 3.8
HEGSONS
Louth County Council
Main Street Ardee
Design Drawings
Engineering Design Drawings
HDC1256
107
07

Appendix A – Problem Location Map (October 2024)


DRAWING HDC1258-1002
MARKETHOUSE LANE
Problem 3A.3
MARKET STREET
FOSTER CLOSE
MARKET STREET
Problem 3A.6


Problem 3A.5 (example)
MARKET STREET
ASH WALK
O'CARROLL ST
CASTLE STREET
BARRETT'S LANE


DRAWING NO: HDC1256-1208
CASTLE STREET
TERNEY STREET
MALONE'S TERRACE
BRIDGE STREET
Car Park
BRIDGE STREET
HALE STREET
WILLIAM STREET

Appendix B

Information Supplied to the Audit Team (June 2024)

- Drawing LOUX3002-P-000-112 A
- Drawing LOUX3002-P-000-114 A
- Drawing LOUX3002-P-000-115 A
- Drawing LOUX3002-P-000-118 A
- Drawing 20240604_ARW_Ardee.dwg
- Drawing ARD-MET-ZZ-XX-DR-E-6001A Rev P01
- Drawing ARD-MET-ZZ-XX-DR-E-6001B Rev P01
- Visibility Analysis table for junctions, Hegsons
- Drawing HDC1256 102 Rev 07
- Drawing HDC1256 104 Rev 05
- Drawing HDC1256 106 Rev 06
- Drawing HDC1256 107 Rev 07
- Drawing HDC1256 102 Ex
- Drawing HDC1256 104 Ex
- Drawing HDC1256 106 Ex
- Drawing HDC1256 107 Ex
- Drawing HDC1256 102 Rev 07 (Kerbs)
- Drawing HDC1256 104 Rev 05 (Kerbs)
- Drawing HDC1256 106 Rev 06 (Kerbs)
- Drawing HDC1256 107 Rev 07 (Kerbs)
- Drawing HDC1256 102 Rev 07 (Visibility)
- Drawing HDC1256 104 Rev 05 (Visibility)
- Drawing HDC1256 106 Rev 06 (Visibility)
- Drawing HDC1256 107 Rev 07 (Visibility)
- Drawing 533273-NOD-01-XX-DR-C-020101 P03
- Drawing 533273-NOD-01-XX-DR-C-020102 P03
- Drawing 533273-NOD-01-XX-DR-C-020103 P03
- Drawing 533273-NOD-01-XX-DR-C-020104 P03
- Drawing 533273-NOD-01-XX-DR-C-020105 P03
- Drawing 533273-NOD-01-XX-DR-C-020106 P03
- Drawing 533273-NOD-01-XX-DR-C-020107 P03

Information Supplied to the Audit Team (October 2024)

- Drawing HDC1256 1002 (K) Rev 03
- Drawing HDC1256 1004 (K) Rev 03
- Drawing HDC1256 1006 (K) Rev 03
- Drawing HDC1256 1007 (K) Rev 03
- Drawing HDC1256 1002 (VT) Rev 03
- Drawing HDC1256 1003 (VT) Rev 03
- Drawing HDC1256 1006 (VT) Rev 03
- Drawing HDC1256 1007 (VT) Rev 03
- Drawing HDC1256 1002 (VS) Rev 03
- Drawing HDC1256 1004 (VS) Rev 03
- Drawing HDC1256 1006 (VS) Rev 03
- Drawing HDC1256 1007 (VS) Rev 03
- Drawing LOUX3002-P-000-125-A
- Drawing LOUX3002-P-000-126-A
- Drawing LOUX3002-P-000-112-A
- Drawing LOUX3002-P-000-113-A
- Drawing LOUX3002-P-000-114-A
- Drawing LOUX3002-P-000-115-A
- Drawing LOUX3002-P-000-116-A
- Drawing LOUX3002-P-000-117-A
- Drawing LOUX3002-P-000-118-A
- Drawing LOUX3002-P-000-119-A
- Drawing LOUX3002-P-000-120-A
- Drawing LOUX3002-P-000-121-A
- Drawing LOUX3002-P-000-122-A
- Drawing LOUX3002-P-000-123-A
- Drawing LOUX3002-P-000-124-A
- Drawing ARD-MET-ZZ-ZZ-DR-E-6001A_P03
- Drawing ARD-MET-ZZ-ZZ-DR-E-6001B_P03
- Drawing 533273-NOD-01-XX-DR-C-020101
- Drawing 533273-NOD-01-XX-DR-C-020102

- Drawing 533273-NOD-01-XX-DR-C-020103
- Drawing 533273-NOD-01-XX-DR-C-020104
- Drawing 533273-NOD-01-XX-DR-C-020105
- Drawing 533273-NOD-01-XX-DR-C-020106
- Drawing 533273-NOD-01-XX-DR-C-020107

Appendix C

Feedback Form

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT

Scheme: Ardee Main Street
Stage: 2 Road Safety Audit
Date Audit (Site Visit) Completed: 17-06-2024

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	Yes	No	The Council are promoting sustainable transport modes. A Car Parking Strategy will accompany the future planning application. These are existing spaces therefore no new signage will be required.	Yes
3.2	Yes	Yes	N/A	
3.3	Yes	Yes	There are 3 no. existing loading/trading bays along Main Street. 3 no. loading bays have been provided in a similar position to those existing. We consider that this will ensure that a similar level of accessibility to shops as currently exists remains following the construction of the proposed development.	
3.4	Yes	Yes	N/A	
3.5	Yes	Yes	N/A	
3.6	Yes	No	There is inadequate space available to the south of the bridge to accommodate an on-road to off road transition directly south of the Bridge Street bridge. Additional road signage will be proposed at the junction of the N2 / R170 which will direct cyclists approaching from the south in this direction. Further signage at the junction of the R170 / Hale Street will direct cyclists to turn up Hale Street to join the start	Yes

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
			of the proposed cycle lane. The planning application site boundary will be extended and notes added to ensure this design approach is visible to cyclists.	
3.7	Yes	Yes	N/A	
3.8	Yes	No	Due to the physical constraints of this section of Bridge Street no new works, apart from resurfacing works, are proposed in this location. Wide vehicles will continue to operate an informal shuttle system to pass each other on this portion of the road. We do not consider that the introduction of a new pedestrian crossing point to the north of Bridge Street will impact on the informal shuttle system in operation at this location nor will the scheme increase traffic volumes in the area (traffic reduction envisaged).	Yes
3.9	Yes	Yes	N/A	
3.10	Yes	Yes	N/A	
3.11	Yes	No	The car park currently operates without any issues and adequate operation turning space is currently available. The car park will be resurfaced as part of the proposed development but no design changes are proposed as part of the proposal.	Yes
3.12	Yes	Yes	N/A	
3.13	No	No	The proposed development is not aiming to deliver a protected cycle lane as we consider this would impact the overall design appearance of the proposed development, which is a promoting	Yes

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
			a more pedestrian / cyclist friendly public realm. The proposed design will include a stepped cycle track design as per the requirements of the National Cycle Manual. The introduction of a 30kph speed limit needs to be introduced through a separate procedure to this planning application. The proposed design, including raised tables and carriageway width, will create an urban environment which results in reduced vehicle speed.	
3.14	Yes	Yes	N/A	
3.15	Yes	Yes	Swept path analysis has been undertaken and no issues identified.	
3.16	Yes	Yes	N/A	
3.17	Yes	Yes	N/A	
3.18	Yes	Yes	The shared surface will be designed to decrease vehicle speed without the requirement for a physical speed control restraint.	
3.19	Yes	Yes	N/A	
3.20	Yes	Yes	N/A	
3.21	Yes	Yes	N/A	
3.22	Yes	Yes	N/A	
3.23	Yes	Yes	N/A	
3.24	No	No	Adequate space to accommodate cycle and pedestrian movements in the area are limited so the provision of a jug handle type arrangement at this location is not possible. The design proposed has been implemented on other national routes in Ireland e.g. N15 example	Yes

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
			photograph and we consider will lead to a safe access / egress to the cycle lane.	
3.25	Yes	Yes	N/A	
3.26	Yes	Yes	N/A	
3.27	Yes	Yes	N/A	
3.28	Yes	Yes	Typical details for shared surface bus stop will be incorporated into the proposed design & addressed at the construction stage.	
3.29	Yes	Yes	N/A	
3.30	Yes	Yes	N/A	
3.31	Yes	Yes	N/A	

Signed...(on behalf of Turley)..... **Date** 04/07/2024
Design Team Leader

Signed..... **Date**..... 15/7/2024
Audit Team Leader

Signed..... **Date**..... 4/7/2024
Employer

SAFETY AUDIT FORM – FEEDBACK ON AUDIT REPORT (OCTOBER 2024)

Scheme: Ardee Main Street
Stage: 2 Road Safety Audit
Date Audit (Site Visit) Completed: 17-06-2024

Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3A.1	Yes	Yes		
3A.2	Yes	Yes		
3A.3	Yes	Yes		
3A.4	Yes	Yes		
3A.5	Yes	Yes		
3A.6	Yes	Yes		

Signed..... **Date**24/10/2024.....
Design Team Leader (On behalf of Turley)

Signed..... **Date**25-10-2024.....
Audit Team Leader

Signed..... **Date:** 24 10 2024
Employer: For & On Behalf of LCC

Appendix D

From: Pat Phelan <Pat.Phelan@tii.ie>
Sent: Friday, July 26, 2024 3:41 PM
To: Lee Hannigan <lee.hannigan@turley.co.uk>
Cc: Lucy Curtis <LCurtis@kerry.nrdo.ie>
Subject: TII Road Safety Audit Approvals System - N2 Ardee Main Street Audit Team Approval

Lee,

I'm afraid not.

I was just speaking to Owen and he is keen to get his portal access issued resolved, but it won't be immediate as he has issues with his Microsoft Authenticator app.

If you need to progress with the Stage 2 RSA with the same team as previous (Norman Bruton & Owen O'Reilly), please proceed.

Owen is an experienced Audit Team Member and will be approved on the portal once we resolve his access issues. We can then catch up with the electronic approval on the system.

This email can be used as evidence of the approval of Norman (Team Leader) & Owen (Team Member) for the undertaking of the Stage 2 RSA of the N2 Ardee Main Street project in the interim.

Regards,

Pat Phelan | Road Safety Engineer

Transport Infrastructure Ireland

Parkgate Business Centre, Parkgate Place, Parkgate Street, Dublin 8, Ireland, D08 DK10

((01) 6463600 086 0564892 * Pat.Phelan@TII.ie

Hegsons Design Consultancy Limited

Dublin I Cork I London I Bedford I Wendover I Buxton I Saint-Denis-Le-Gast

Hegsons Design Consultancy Ltd - Company Reg: 450793
Pembroke Hall 38/39 Fitzwilliam Square West, Dublin 2,
DO2 NX53, Rep. of Ireland

Hegsons Design Consultancy (UK) Ltd - Company Reg: 6845621
Bedford i-Kan, 38 Mill Street, Bedford, MK40 3HD, United Kingdom

www.hegsons.com contact@hegsons.com