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| Scheme Name | Enhancements to Berkhamsted Railway Station | |
| | Parking | |
| Scheme Reference | 17 | |
| Problem References | CH3 | Taxis parking by station cause congestion and safety concerns for pedestrians |
| | CH18 | Better signage required at Lower Kings Rd/Brownlow Rd |
| | B24 | Access to platforms is difficult for cyclists due to the lack of lifts and wheeling channels |
| | B32 | Location of cycle racks at the back of station is not convenient (cyclists need to navigate under hazardous rail bridge) |
| | B33 | Width of carriageway underneath the railway bridges at Station Road / Whitehill and Lower Kings Road / Brownlow Road are hazardous to both cyclists and pedestrians |
| | PK1 | Parking is limited at the station due to taxis, skips, posts |
| | PK16 | Parking along country lanes to avoid station parking costs |
| | PT5 | Impossible to get a taxi in peak periods |
| Links to other schemes: | UTP | 21 |

Context



Figure 1 Location Plan

Berkhamsted Station is located approximately 400m north of Berkhamsted High Street, via Lower Kings Road. The main London terminal for trains from Berkhamsted is London Euston, with journey times varying from 27 to 39 minutes between the two locations. The station accommodates over 1.3 million passengers annually across 4 platforms.



Figure 2 Station Entrance

In terms of general infrastructure, Berkhamsted Station provides 483 parking spaces at the rear of the station (including 4 disabled spaces), along with additional spaces at the front for drop off and picking up passengers. Taxi parking is provided at the forecourt of the building, with 70 covered cycle spaces located mainly at the rear of the station (adjacent to platform 4). In addition, 2 bus stops are located on Lower Kings Road, directly in front of the station entrance, providing access to Northchurch, Chesham and Hemel Hempstead.




Due to the current spatial constraints of the station forecourt, both taxis and private vehicles are having to park on Lower Kings Road, causing localised congestion and safety concerns for pedestrians. There is a perception that the forecourt does not provide sufficient facilities for taxis, private cars, cyclists and pedestrians. In addition, the lack of signage to facilities at the rear of the station (accessed via Brownlow Road) increases the reliance on the forecourt for all transport modes.


Berkhamsted Station has recently increased its cycle parking provision adjacent to platform 4. However, it is evident that these facilities are currently not fully utilised by commuters, with many cyclists parking under the arches located adjacent to the forecourt. The location and security of cycling facilities is vital in the awareness and growth of cycle mode share throughout Berkhamsted.



In addition to cycle parking, London Midland has also increased the amount of car parking from 395 to 483 spaces through the construction of double-decker parking at the rear of the station. Observation and recent data suggests that the car park is rarely above 70% capacity on a weekday however, there are many commuters parking along Station Road and New Road in an attempt to avoid station parking charges.


To improve the transport facilities at Berkhamsted Station, a number of options have been developed, as examined below. The options have been developed to fulfil the following

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| <p>overarching LTP Objectives:</p> <ul style="list-style-type: none"> • Improve transport opportunities for all and achieve behavioural change in mode choice • Improve the safety and security of residents and other road users |
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| Measures/Components | | | |
|---------------------|--|--|------------------|
| Ref | Description | Assessment of Suitability | Cost |
| 17.1 | Provide designated taxi overflow parking area at the rear of Berkhamsted Station to prevent overcrowding outside the main entrance |  <p>The station forecourt currently accommodates 8 parking spaces, 4 disabled parking spaces, and a taxi drop off point for three/four taxis. However, due to the need for taxis during the peak times, as many as 10 taxis are waiting at the forecourt during the day.</p> <p>The proposed improvements include maintaining the current 3 space pick up area, but also to have a designated taxi waiting area at the rear of the station, off Brownlow Road (see Figure 4 for location details). This will improve conditions at the forecourt entrance, enhancing the priority of cyclists and pedestrians, whilst preserving the local taxi service.</p> <p>Deliverability – 1 to 2 years STANDARD</p> | Less than £2,000 |

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| 17.2 | Provide designated drop off area at front of Berkhamsted Station |  <p>There is currently uncertainty regarding the location of dropping off facilities at Berkhamsted Station, in addition to the priority that each transport mode has.</p> <p>In addition to the movement of taxi waiting areas to the rear of the station, a designated drop off area is required near to the forecourt. Currently, there are facilities for short stay parking, taxi pickup, disabled parking and cycle parking. By utilising the area in front of La Gare Bistro as a drop off area for cars, cyclists and pedestrians will be given higher priority within the main forecourt.</p> <p>Deliverability –1 to 2 years STANDARD</p> | Less than £2,000 |
| 17.3 | Improve signage at Brownlow Road/Lower Kings Road junction | <p>Customers are currently unaware of the facilities provided at the rear of the station. The proposal includes the provision of signs at the entrance to Brownlow Road making it clear that there are car and bicycle parking facilities at the rear, along with further drop-off points.</p> <p>Deliverability – less than 1 year SIMPLE</p> | Less than £2,000 |

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| <p>17.4</p> | <p>Cycle Parking Locations</p> | <p>Provide additional cycle parking at the front of Berkhamsted Station. There is currently under utilised footway space which could accommodate additional Sheffield stands. The existing cycle parking is at capacity – a survey undertaken by Tring and Berkhamsted Cycle Campaign indicated it was over 100% occupied on six of the seven survey days. Provision of additional parking at the front will negate the need for cyclists to navigate under the Brownlow Road bridge, which was perceived at hazardous by stakeholders.</p>   <p><i>Figure 3 Opportunities for additional cycle parking</i></p> <p>Deliverability – less than 1 year SIMPLE</p> | <p>£2,000 to £4,000</p> |
| <p>17.5</p> | <p>Provide wheeling channels and improved access to platforms for cyclists</p> | <p>Following liaison with London Midland, they do not support the provision of wheeling channels at stations. However Berkhamsted Station is due to become step free in 2013 through the Department for Transport’s ‘Access for All’ programme. This will encourage additional use of the station for cyclists</p> <p>NOT DELIVERABLE</p> | |

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| 17.6 | Extend parking restrictions on White Hill |  | <p>White Hill is currently used by commuters for daytime parking, with 'Park at your own risk' signs located on adjacent walls. The current parking restrictions require extending on the northern edge of White Hill, as the highway is too narrow for passing vehicles. See Figure 4 for location.</p> | £4,000 to £6,000 |
| Deliverability – less than 1 year SIMPLE | | | | |

Supporting Evidence of Measures/Components

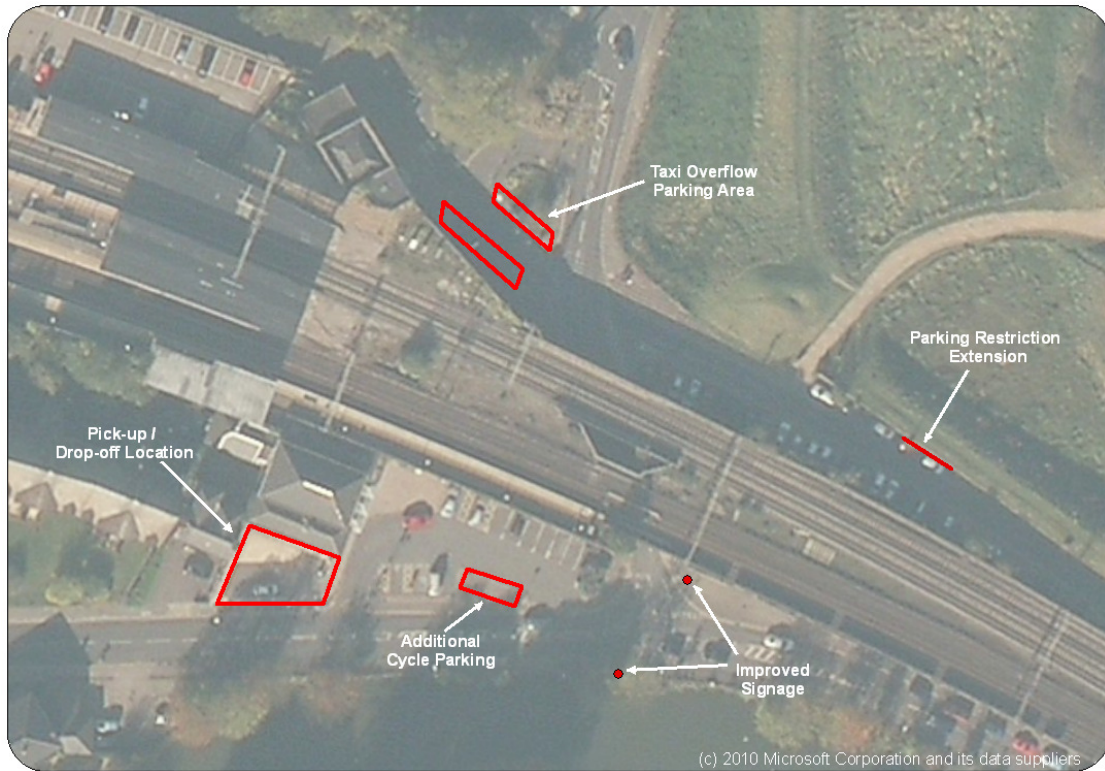


Figure 3 Location of Proposed Improvements

Preferred Option

The preferred option includes measures 17.1, 17.2, 17.3, 17.4, and 17.6. The combination of these measures will enhance the priority of vulnerable road users at the station forecourt whilst encouraging mode shift from the private car. The implementation of schemes can be staged to allow measures 17.3 and 17.6 to be completed first, during further planning and design of forecourt and parking measures.

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| Contribution to Objectives / Indicators | UTP Objectives | <ul style="list-style-type: none"> • Improve connectivity between transport modes to allow for greater transport flexibility • Promote active travel modes throughout the study area to encourage active and healthy lifestyles • Address parking issues regarding Tring and Berkhamsted Stations, through encouragement of car share schemes and mode shift from the car |
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| Outline Cost Analysis of Preferred Option or Options | | |
|---|--------------------------|--------------|
| Design and Implementation | Indicative Cost | Notes |
| 17.1 | Less than £2,000 | |
| 17.2 | Less than £2,000 | |
| 17.3 | Less than £2,000 | |
| 17.4 | £2,000 to £4,000 | |
| 17.6 | £4,000 to £6,000 | |
| TOTAL COST FOR DELIVERY | £6,000 to £16,000 | |

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| Maintenance Liability | High Medium Low | |
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| Deliverability of Preferred Option | Simple – ‘quick win’, could be delivered within 1 year |
| | Standard – could be delivered in 1 to 2 years, in line with IWP |
| Delivery Issues | Complex – could not be delivered in 2 years, has some issues that require resolution before design |
| Delivery Issues | Consultation with London Midland and public regarding forecourt schemes and CPZ. |

Other Information/Additional Notes:

Schemes shown in grey have been considered but are not deemed to be feasible and are not recommended to be progressed.

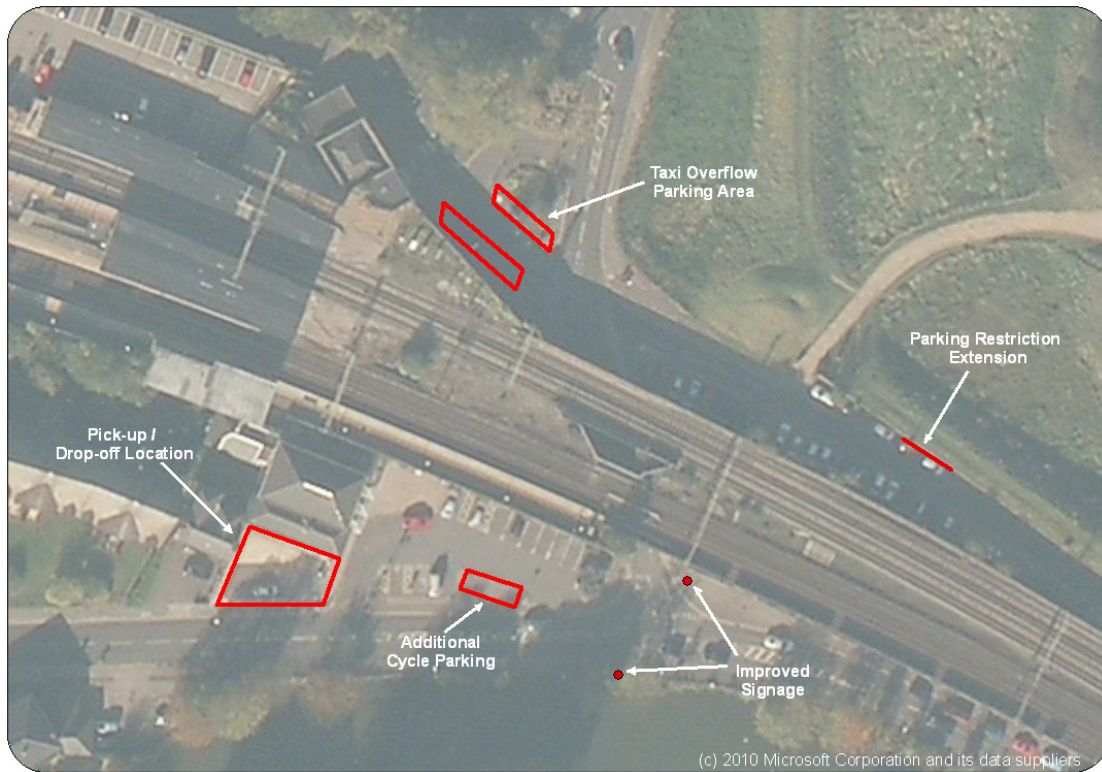


Figure 4 Location of Proposed Improvements

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| Scheme Name | Introduce Real Time Information and make Improvements to Existing Bus Network | |
| | Public Transport | |
| Scheme Reference | 18 | |
| Problem References | PT3 | The bus reliability requires improvement |
| | PT4 | 500 route not reliable |
| | PT8 | Bus reliability is an issue in Berkhamsted |
| Links to other schemes: | UTP | |

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| Context |
| <p>Throughout Tring and Berkhamsted, the accuracy and reliability of public transport arrival and departure times has been perceived as an issue. This is primarily caused by congestion and traffic calming measures through the two town centres. As a result, there is wide support for improved public transport information and accuracy of bus arrival times throughout the study area.</p> <p>Established in 1999, the Intalink Partnership (between local and bus and train operators in Hertfordshire) aims to improve public transport information and connectivity between modes. As a result of the partnership, new technology is being introduced across the county, including Real Time Passenger Information, roadside information and Electronic Passenger Information Points (ePIP).</p> <p>Real Time Passenger Information technology is now available in a variety of formats:</p> <ul style="list-style-type: none"> • Online real time departure information. In Hertfordshire, the Intalink website provides real time information for each stop, demonstrating any expected delays; • Mobile application. The Intalink partnership provides the equivalent online information on an app that can be downloaded for Android and iPhones in order to access real time information via a Smartphone (see Figure 1); • Display screens at bus stops provide real time information and have currently been installed around the county, focusing on high frequency services. An example of an ePIP can be seen in Figure 2; • Near Field Communication technology posters. These are being introduced across Hertfordshire in 2013 allowing public to access departure time information by scanning a poster QR code¹ by a mobile phone. <p>Hertfordshire County Council is working with all public transport operators that express an interest in RTPI technology in order to encourage wider roll out. However, many operators that have routes in Tring, Northchurch and Berkhamsted do not have Real Time Passenger Information.</p> <p>Bus routes in Tring and Berkhamsted suffer from a lack of commercial viability and many are already supported by Hertfordshire County Council. As a result, it may be possible to investigate improvements to contracted routes if developer contributions or other external</p> |

¹ QR or Quick Response Codes are a type of two-dimensional barcode that can be read using a Smartphone and dedicated QR reading devices, that link directly to text, emails, websites, phone numbers and more - <http://www.whatisagrcode.co.uk/>

funding source becomes available.

The following measures have therefore been developed to fulfil the following overarching LTP Objective:

1. Enhance quality of life, health and the natural, built and historic environment for all residents

| Measures/Components | | | |
|---------------------|--|--|------------------------------------|
| Ref | Description | Assessment of Suitability | Cost |
| 18.1 | Introduce Real Time Information across all town centre bus stops | <p>Real Time Passenger Information (RTPI) works effectively when data is passed to the user at the point of need, meaning that the roll out of recent RTPI technology should be implemented where appropriate. For Berkhamsted and Tring, the implementation of Real Time Information will benefit passengers, as the information would reflect traffic conditions.</p> <p>It is proposed that Berkhamsted and Tring Town Centres are included within the county roll out of Real Time Passenger Information during 2013. There are currently 6 bus stops on Berkhamsted High Street that would benefit from 19 inch in-shelter RTPI display screens:</p> <ol style="list-style-type: none"> 1. Adjacent to Victoria Road; 2. Opposite Victoria Road; 3. Opposite Town Hall; 4. Opposite Kings Road; 5. Opposite Cross Oak Road; 6. Adjacent to Cross Oak Road. <p>In addition, there are 4 bus stops on Tring High Street that would also benefit:</p> <ol style="list-style-type: none"> 1. Opposite the Rose and Crown Hotel; 2. Outside the Rose and Crown Hotel; 3. Opposite Christchurch Road; 4. Adjacent to Christchurch Road. <p>The proposed implementation of display screens should be developed in line with the current Intalink facilities located on Berkhamsted High Street, improving connectivity between public transport modes. However, there are currently no further plans for the installation of screens. Should funding be available (e.g. developer contributions or external), more locations would be considered.</p> <p>In addition, the future roll out of Near Field Communication posters, stop specific timetables, and local marketing of the Intalink website and</p> | 19" Display Screens £7,000 each |

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| | | <p>mobile app should also include Berkhamsted, Northchurch and Tring to enable maximum accessibility of real time information to the whole community.</p> <p>Deliverability – 1 to 2 years STANDARD</p> | |
| 18.2 | <p>Introduce Real Time Information at bus stops adjacent to Tring and Berkhamsted Railway Stations</p> | <p>Similarly to the two town centres of Tring and Berkhamsted, the corresponding railway stations located off Lower Kings Road in Berkhamsted, and Station Road in Tring would benefit from RTPI and Intalink facilities. Both stations provide commuter access to London City Centre, and therefore accommodate a large amount of commuters on a daily basis. One of the main objectives of the UTP is for mode shift from the private car to other modes of transport. Introducing display screens and stop specific timetables at the locations on Lower Kings Road and Station Road will encourage commuters to use public transport as a viable alternative to the private car, as bus reliability improves. The specific proposal includes:</p> <ul style="list-style-type: none"> • One 40” screen at Berkhamsted Station (located outside the main entrance) demonstrating RTPI for all bus routes at the station and on the High Street. • Stop specific timetables to be distributed at both railway stations. <p>Deliverability – 1 to 2 years STANDARD</p> | <p>40” Display Screen £12,000</p> |

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| 18.3 | Further Real Time Information at bus stops in Northchurch and Berkhamsted | <p>Similarly to the two town centres of Tring and Berkhamsted, the following locations would benefit from RTPI and Intalink facilities.</p> <ol style="list-style-type: none"> 1. Adjacent to Northchurch shops; 2. A4251 near Swing Gate Lane; 3. Chesham Rd (adjacent to Ashlyns School entrance). <p>One of the main objectives of the UTP is for mode shift from the private car to other modes of transport. Introducing display screens and stop specific timetables at the locations will encourage commuters, shoppers and school pupils to use public transport as a viable alternative to the private car, as bus reliability improves. The specific proposal includes 19" screens and stop specific timetables to be distributed at each of the 6 bus stops.</p> <p>It is envisaged that funding would have to be sourced via Local Transport Plan, S106 or developer contributions.</p> <p>Deliverability – 1 to 2 years STANDARD</p> | 19" Display Screen £8,000 to £10,000 each |
| 18.4 | Bus Route 500 Changes | <p>The Arriva Route 500 was rerouted within Tring a number of years ago to improve journey time reliability. Currently, the 500 Route has a frequency of every half an hour during weekdays and Saturdays, and every hour on Sundays, through Tring via the town centre and London Road.</p> <p>It is anticipated that, as a result of Intalink innovation, journey time reliability will improve. In addition, there is significant support from local stakeholders for the Route 500 to include Station Road and Cow Lane in Tring. It is therefore proposed that the 500 Route provides alternative alignments every hour, allowing access to both areas on a regular basis. The proposed change in route is demonstrated in Figure 3. The proposals will require the following:</p> <ul style="list-style-type: none"> • Consultation; • Approval from the bus operator; • A review and implementation of infrastructure where required along the alternative path along Cow Lane. <p>In addition, the development within the northern areas of Tring will enhance the need for improved public transport facilities within the town.</p> <p>Deliverability – 1 to 2 years STANDARD</p> | TBC* (consultation required with HCC PTU) |

| Supporting Evidence of Measures/Components |
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| Preferred Option |
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| <p>The preferred option includes all measures (18.1, 18.2, 18.3 and 18.4) in order to encourage mode shift and greater confidence in public transport provision throughout the study area. The implementation will be phased in line with implementation of GPS devices on buses. The proposal includes the provision of RTPI at 20 bus stops throughout Berkhamsted and Tring, in addition to the implementation of Near Field Communication posters throughout the study area and marketing of Intalink technical services. An improvement to Route 500 will also provide bus accessibility to a number of residential areas and trip generators in east Tring, supporting accessibility from here to local and county wide destinations.</p> <p>In addition to the preferred option, the addition of a local circular bus route should be investigated, as this would assist in the mode shift from the private car for short journeys, and also provide a safe alternative for pupils travelling to school. It is envisaged that funding for the circular route would need to be sourced from local developer or private funding to ensure new developments have accessibility to local destinations.</p> <p>Also, bus stop design guidance suggests that residential areas ideally should be located within 400m of a bus stop to ensure accessibility. However, due to the topography of Berkhamsted (most notably south of the High Street), it is recommended that the bus stop locations are reviewed to ensure good accessibility for areas that lie within 400m of a route, with additional stops implemented in those areas where required. Existing patronage could provide an insight into where additional stops may be suitable.</p> |

| Contribution to Objectives / Indicators | UTP Objectives | |
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| | | <ul style="list-style-type: none"> • Improve connectivity between transport modes to allow for greater transport flexibility • Improve public transport provision and accessibility • Reduce congestion in key traffic hotspots throughout the study area |

| Outline Cost Analysis of Preferred Option or Options | | |
|--|--------------------|--|
| Design and Implementation | Indicative Cost | Notes |
| 18.1 | £70,000 to £80,000 | Costs do not include Communications link, ducting and maintenance of screens |
| 18.2 | £10,000 to £15,000 | |

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| 18.3 | £48,000 to £60,000 | |
| 18.4 | TBC | |
| TOTAL COST FOR DELIVERY | £128,000 to £155,000 | |

*Costs provided by HCC

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| Maintenance Liability | High Medium Low | Screens require maintenance and communications link. |
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| Deliverability of Preferred Option | Simple – ‘quick win’, could be delivered within 1 year |
| | Standard – could be delivered in 1 to 2 years, in line with IWP |
| | Complex – could not be delivered in 2 years, has some issues that require resolution before design |
| Delivery Issues | |

Other Information/Additional Notes:

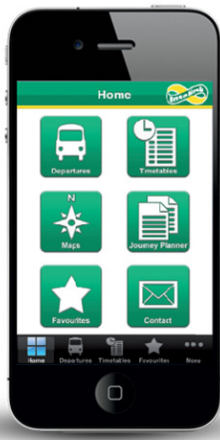


Figure 1 Intalink Mobile App



Figure 2 Existing ePIP on Berkhamsted High Street

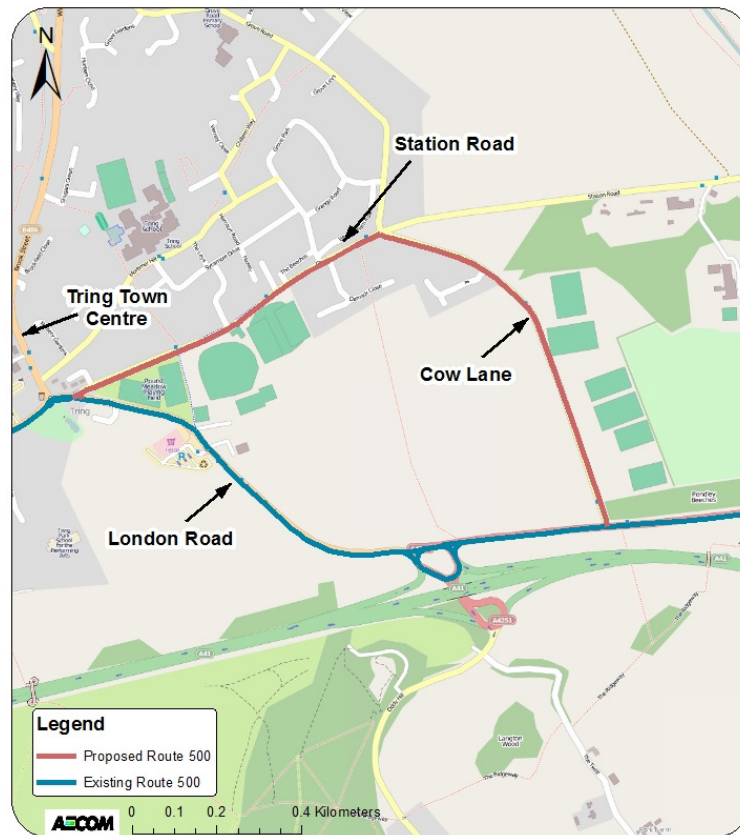


Figure 3 Bus Route 500

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| Scheme Name | Improve operation of Billet Lane corridor between Gossoms End and Bridgewater Road | |
| | Walking | |
| Scheme Reference | 19 | |
| Problem References | CH12 | Left filter required on Billet Lane onto High St due to congestion back to canal bridge |
| | B10 | No dedicated cycle routes in Berkhamsted |
| | B14 | Lack of wayfinding for pedestrians and cyclists in Berkhamsted |
| | B18 | Little cycle specific provision throughout the town |
| | W3 | Billet Lane has no crossing point near southern section where pavement disappears |
| | W7 | Billet Lane/Bridgewater Rd is very busy, and deters people from walking to nearby school |
| Links to other schemes: | UTP | 20, 34 |

Context



Figure 1 Location Plan

Billet Lane is located in the north western area of Berkhamsted, providing access to Northbridge Road Industrial Estate and residential areas including Springfield Road and Bridgewater Road to the north. Due to recent growth in peak traffic, congestion occurs from Gossoms End junction up to the canal bridge.

Billet Lane also crosses the Grand Union Canal, with an access point for pedestrians located

on its eastern side. However, there are currently no crossing facilities along Billet Lane, creating safety issues on a road where visibility is poor due to the local topography.

There is support for improvements at Billet Lane / Gossom End signalised junction due to its lack of facilities for cyclists and pedestrians, in addition to tidal congestion along Billet Lane. A number of measures have therefore been developed to improve the transport characteristics of the corridor, from which a combination of measures will support the objectives of this UTP.




The options have been developed to fulfil the following overarching LTP Objectives:

- Support economic development and planned dwelling growth
- Improve transport opportunities for all and achieve behavioural change in mode choice
- Enhance quality of life, health and the natural, built and historic environment for all residents
- Improve the safety and security of residents and other road users

| Measures/Components | | | |
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| Ref | Description | Assessment of Suitability | Cost |
| 19.1 | Upgrade junction signals at Gossoms End junction to MOVA, thus allowing greater response to changing traffic conditions throughout the day. | <p>As a result of restricted junction geometry, signal operation improvements are restricted to changes in signal timings.</p> <p>Therefore, it is proposed to update the existing signal timings to MOVA, to reflect current traffic conditions. As a result, less congestion would occur at the junction, with priority given to higher demand. The measure would require a turning count at this junction to ascertain the current traffic levels at each approach, but also the current signal timings in order to assess the benefits of implementing MOVA at this location.</p> <p>The implementation of the measure will involve the introduction of new traffic lights, with corresponding detectors at 3.5 seconds and 8 seconds on each approach lane (10 in total).</p> <p>Deliverability – 1 to 2 years STANDARD</p> | £40,000 to £45,000 |

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| 19.2 | Provide pedestrian crossing on Billet Lane adjacent to canal bridge to allow safe crossing from industrial estate to canal towpath. | <p>The provision of a crossing is required at this location based on the amount of pedestrians wishing to cross Billet Lane (see details in Table 1). The measure will provide a safe crossing point between the industrial estate and areas south of Billet Lane (including the canal towpath).</p> <p>Consultation with the police, public notice and written notification to the Secretary of State are necessary before the crossing is established following guidance in the Road Traffic Regulation Act 1984.</p> <p>The proposal includes a 2.4m wide crossing, with adjacent signage and guard railing.</p> <p>Figure 6 demonstrates the location of the proposed crossing. This location has been chosen for a number of reasons:</p> <ul style="list-style-type: none"> • It is over 5m from any junction; • Located where the footpath ends on the northern edge of Billet Lane. <p>However, as a result of poor visibility, the proposal does not fit the criteria for implementation. Therefore, further measures would need to be assessed in order to improve facilities for pedestrians along Billet Lane.</p> <p>NOT DELIVERABLE</p> | |
| 19.3 | Provide a cycle link from the canal towpath to the junction with Gossoms End through a shared footway/cycleway. | <p>A shared use footway is proposed as part of the Durrants Lane scheme (see Proforma 20). It is suggested that a shared use facility is also provided to connect to the Grand Union towpath from Gossoms End. Due to existing footway widths, cyclists would enter Billet Lane from the toucan crossing on the western footway. A dropped kerb would be provided to allow cyclists on to the eastern footway to access to the towpath. Some footpath widening would be required at the access to the towpath to provide a desirable facility. This link would require appropriate signage as it provides a viable alternative to the High Street. Refer to Figures 4, 5 and 6 for details.</p> <p>Deliverability – 1 to 2 years STANDARD</p> | £4,000 to £6,000 |

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| 19.4 | Provide left turn lane on egress to Gossoms End through widening Billet Lane. | <p>Traffic builds up along Billet Lane in the peak periods. Observations suggest that the mix of left and right turners onto Gossoms End is fairly even. It is therefore proposed that the approach to the junction is widened to two lanes, increasing the capacity of the junction, and therefore reducing congestion. The proposed layout is provided in Figure 4.</p> <p>The proposal does have deliverability issues, as the widening will require land-take to the north of the approach (currently private land), in addition to the requirement for full junction modelling in order to ascertain the level of improvement.</p> <p>NOT DELIVERABLE</p> | |
| 19.5 | Provide Advanced Stop Lines on approach to junction with Gossoms End. | <p>Investigate the feasibility of implementing 4.0m Advanced Stop Lines (ASLs) on all approaches at the junction to increase priority for cyclists and improve conspicuousness.</p> <p>Where possible, suitable feeder lanes should be provided, however width restraints mean it is likely ASLs would be gated on Billet Lane approach. The impact on capacity at the junction would need to be assessed.</p> <p>Deliverability – 1 to 2 years STANDARD</p> | £4,000 to £6,000 |
| 19.6 | Upgrade guard railings at junction with Gossoms End |  <p>The current safety barriers are in poor condition as they have been damaged through collisions on a number of occasions. It is therefore proposed to undertake a guardrail assessment to determine the requirement for guard rail at this location. Only if it is found that guard rail is necessary, high visibility guardrail should be provided.</p> <p>Deliverability – 1 to 2 years STANDARD</p> | Less than £2,000 |

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| 19.7 | Install Informal Crossing Point south of canal bridge on Billet Lane | <p>In order to extend the footway on the western side of Billet Lane (adjacent to Jewsons yard), a sheet piled or brick retaining wall would be required within the yard, with associated concrete backfill and fence. The alternative option would be to convert the existing pedestrian railing to Visi-rail, and install an informal crossing point with tactile paving just north of the junction with North Bridge Road (demonstrated in Figure 7).¹ As a result, pedestrians and local school pupils would be encouraged to cross at the safest location, instead of crossing the wide entrance to North Bridge Road, and then Billet Lane at the canal bridge.</p> <p>In addition, appropriate pedestrian crossing signage would be required on the northern and southern approaches to the canal bridge.</p> <p>This measure would improve awareness of pedestrians crossing Billet Lane at this junction, and allow for safe crossing for pedestrians wishing to travel to/from North Bridge Road Industrial Estate and residential areas to the north.</p> <p>Deliverability – 1 to 2 years STANDARD</p> | £4,000 to £6,000 |
| 19.8 | Install signal-controlled pedestrian crossing facilities on the Billet Lane arm of the junction with Gossoms End. | <p>Currently, there are signal-controlled pedestrian crossings on only two of the arms at Billet Lane / Gossoms End junction. It is proposed that these existing crossings are linked to a new signal controlled crossing on the third, Billet Lane, arm (in association with the proposed enhancement of the junction signals - Measure 19.1). The proposal includes the crossing signals, drop kerbs and associated tactile paving on both edges of Billet Lane.</p> <p>Deliverability – 1 to 2 years STANDARD</p> | £8,000 to £10,000 |

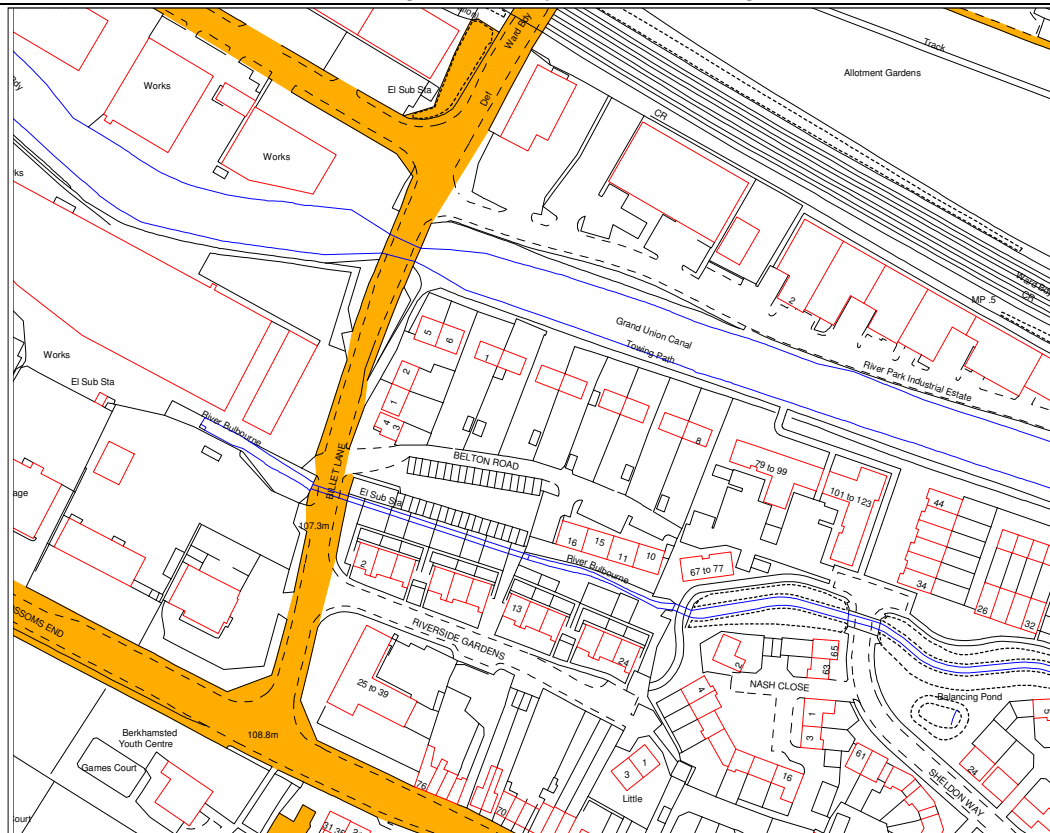


Supporting Evidence of Measures/Components

¹ Measure initially developed as part of SRTS Programme – Westfield First School and Nursery (May 2012)



Figure 2 Example Zebra Crossing



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**Billet Lane
Berkhamsted**

Produced using ArcView by
HB & LC Hertfordshire County Council

7 September 2012



Figure 3 Current Highway Boundary

Preferred Option

The preferred option along Billet Lane includes Measures 19.1, 19.3, 19.5, 19.6, 19.7 and 19.8.

In order for the Billet Lane / Gossoms End signals to operate efficiently, it is proposed that the signal operation is initially improved to MOVA. However, if further congestion builds as a result of traffic growth, measure 19.4 may be required.

The combination of the 6 proposed measures will ensure improved safe connectivity between the canal towpath and local trip producers (schools and businesses), and also improve the priority of vulnerable users along both Billet Lane and Gossoms End. It is recommended that the proposed measures are implemented in parallel with those proposed in Proforma 34 (e.g. zebra crossing on Bridgewater Road).

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| Contribution to Objectives / Indicators | UTP Objectives | <ul style="list-style-type: none"> • Improve connectivity between transport modes to allow for greater transport flexibility; • Improve connectivity within and between local towns through a complete network of walking and cycling facilities; • Reduce congestion in key traffic hotspots throughout the study area. |
|--|----------------|---|

| Outline Cost Analysis of Preferred Option or Options | | |
|---|---------------------------|--------------|
| Design and Implementation | Indicative Cost | Notes |
| 19.1 | £40,000 to £45,000 | |
| 19.3 | £4,000 to £6,000 | |
| 19.5 | £4,000 to £6,000 | |
| 19.6 | Less than £2,000 | |
| 19.7 | £4,000 to £6,000 | |
| 19.8 | £8,000 to £10,000 | |
| TOTAL COST FOR DELIVERY | £60,000 to £75,000 | |

| | | |
|------------------------------|-----------------------|--|
| Maintenance Liability | High Medium Low | |
|------------------------------|-----------------------|--|

| | |
|---|---|
| Deliverability of Preferred Option | Simple – ‘quick win’, could be delivered within 1 year |
| | Standard – could be delivered in 1 to 2 years, in line with IWP |
| | Complex – could not be delivered in 2 years, has some issues |

| | that require resolution before design |
|------------------------|---|
| Delivery Issues | Junction modelling and traffic counts would be required in order to improve the efficiency of Billet Lane/Gossoms End junction. The delivery of this scheme would ideally be aligned with the delivery of measures at Durrants Lane/High Street junction. |

Other Information/Additional Notes:

| | 8:00am to 9:00am | 2:45pm to 3:45pm |
|--------------------------|---------------------|---------------------|
| North | 2 | 2 |
| Crossed north of bridge | 10 | 6 |
| Crossed south of bridge | 11 | 4 |
| South on western footway | 11 | 2 |
| | 34 | 14 |

Table 1 Billet Lane pedestrian count (direction of travel from alleyway leading into Chiltern Park estates (May 2012)

The following drawings demonstrate the proposals for Billet Lane. **Figure 4** demonstrates the variety of proposals at Billet Lane / Gossoms End. **Figure 5** demonstrates the proposals at the canal bridge and approach on Billet Lane.

Existing highway dimensions are based on OS mapping provided by HCC and / or site measurements. It is recommended further survey work is carried out to provide a full assessment of available widths during feasibility design.

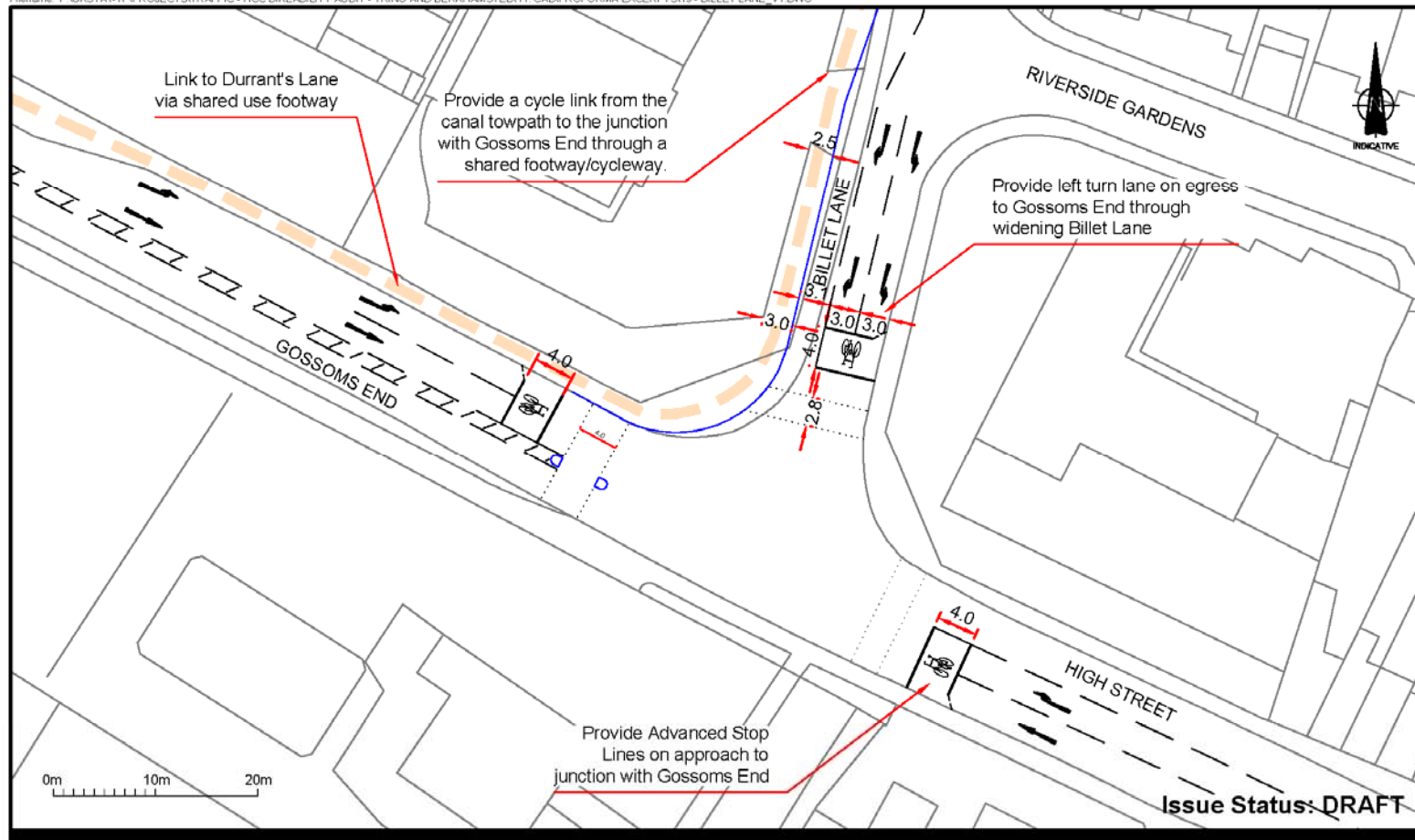
Schemes shown in grey have been considered but are not deemed to be feasible and are not recommended to be progressed.

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Figure 4

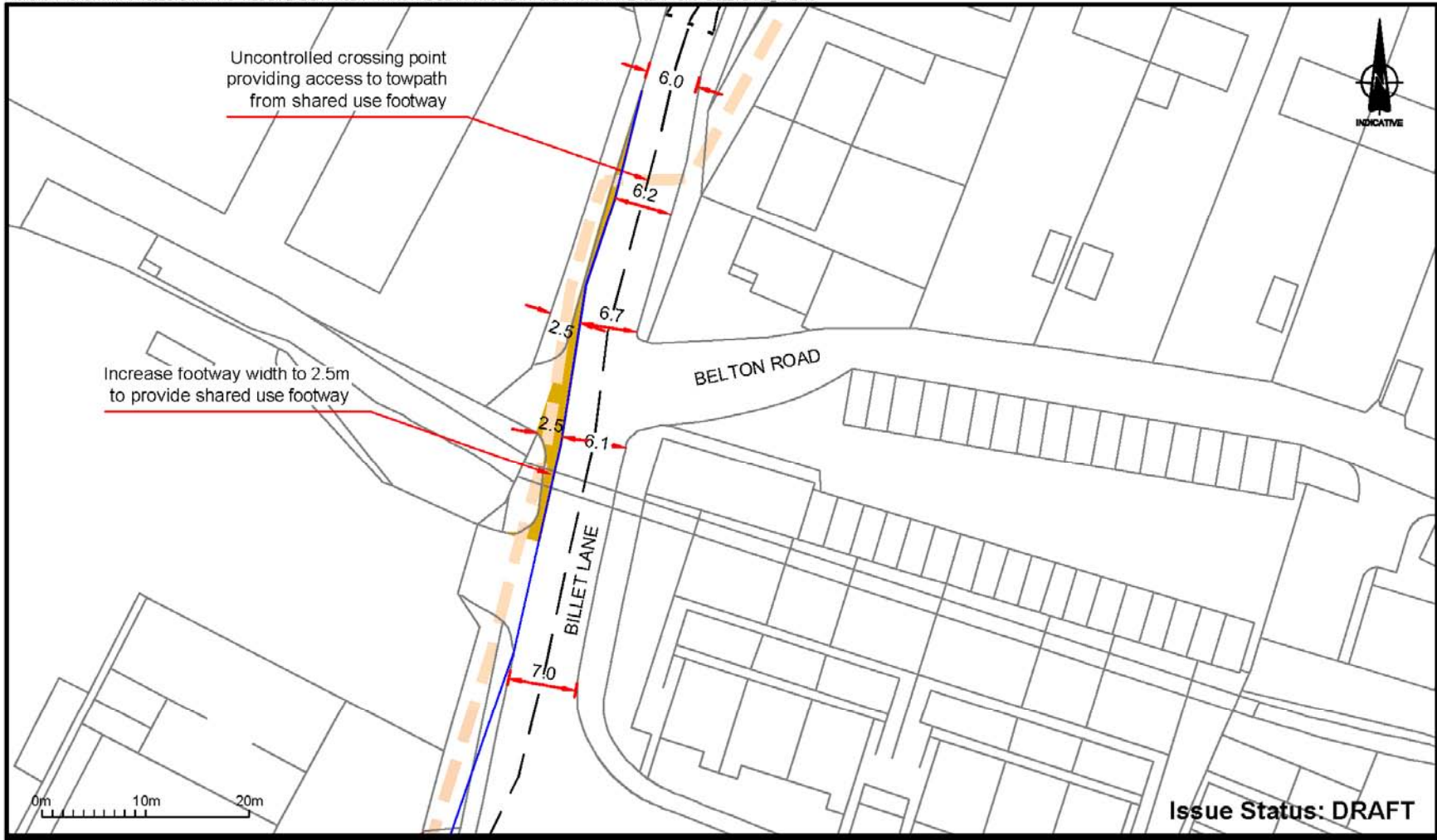
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Figure 5

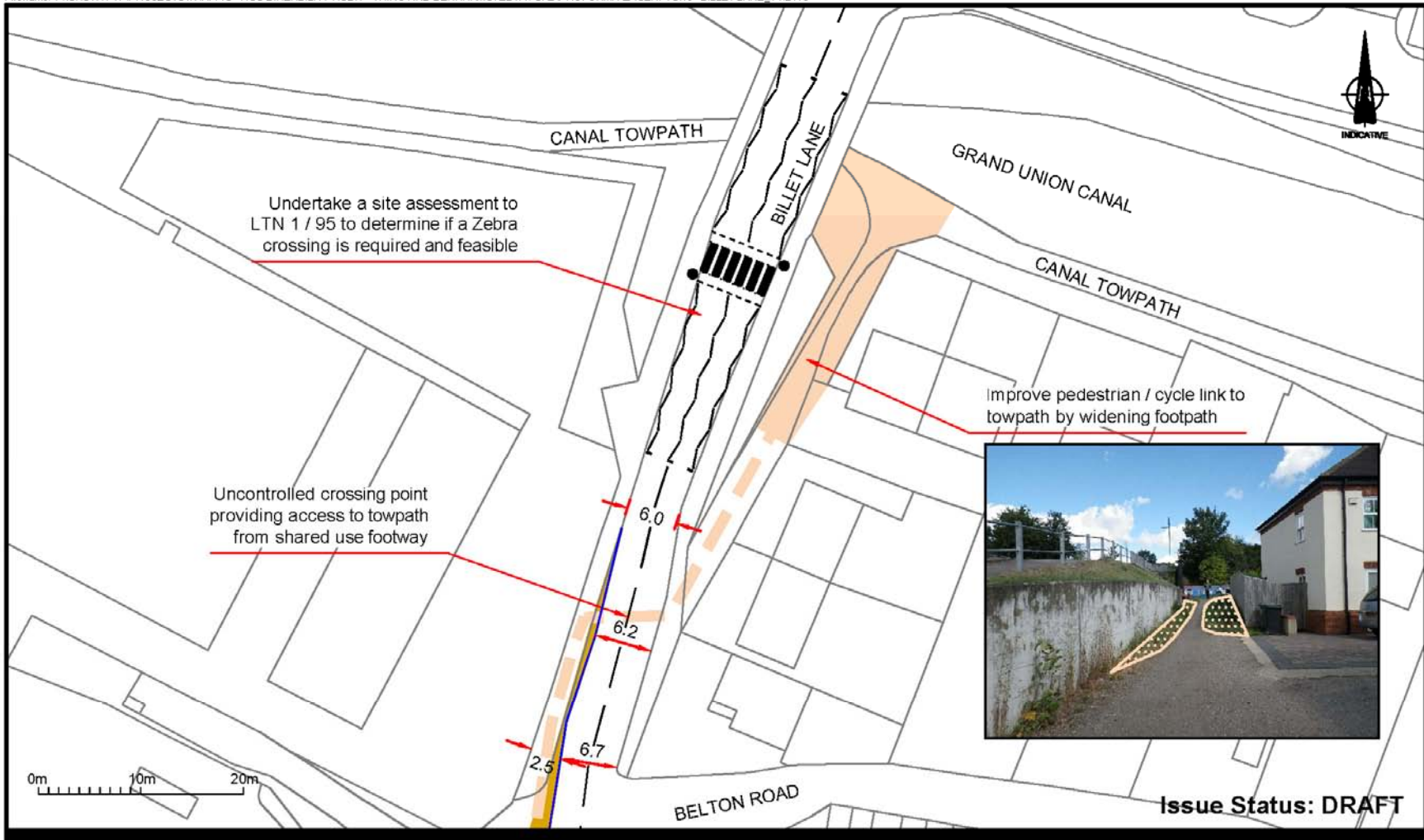
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Figure 6

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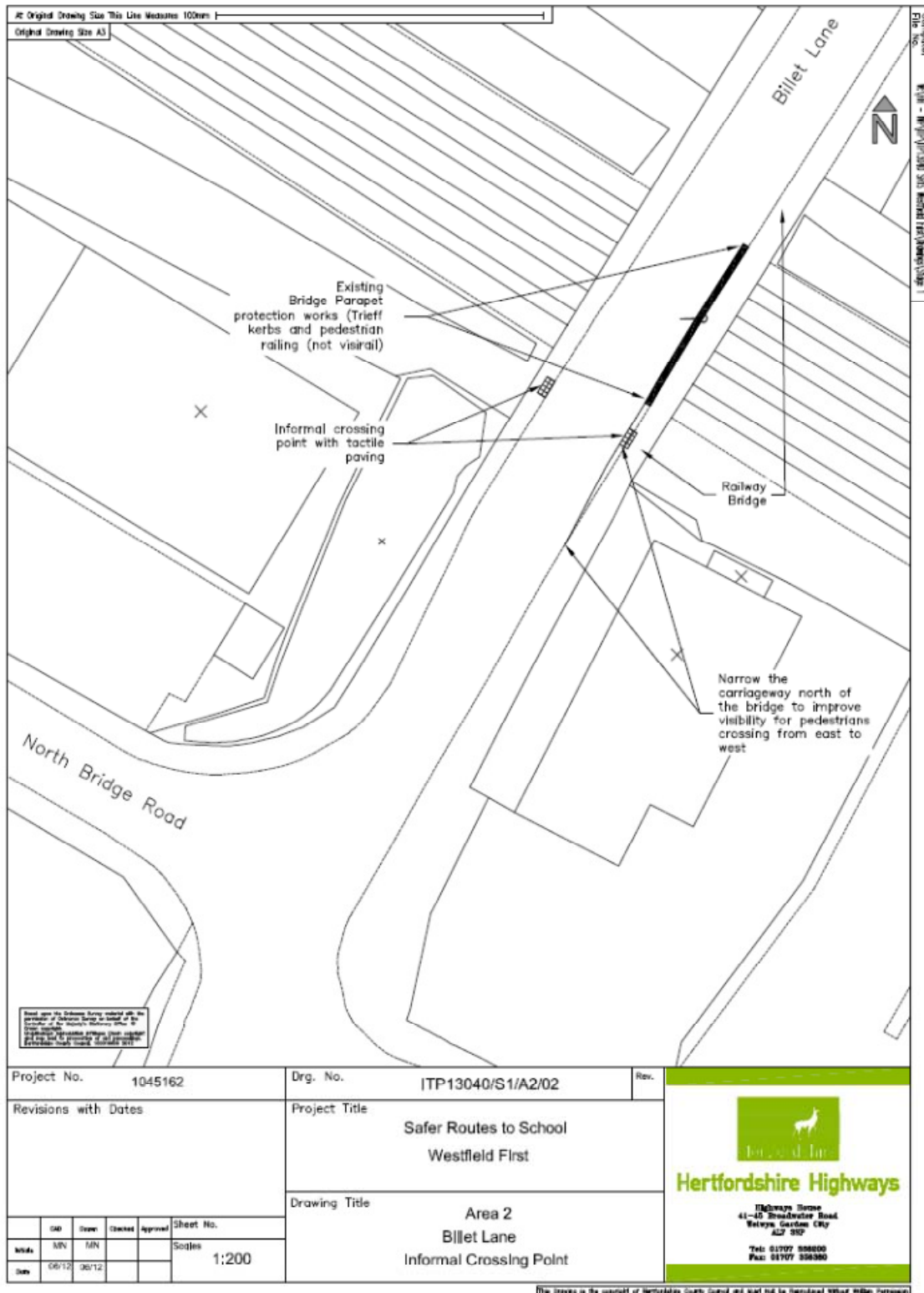
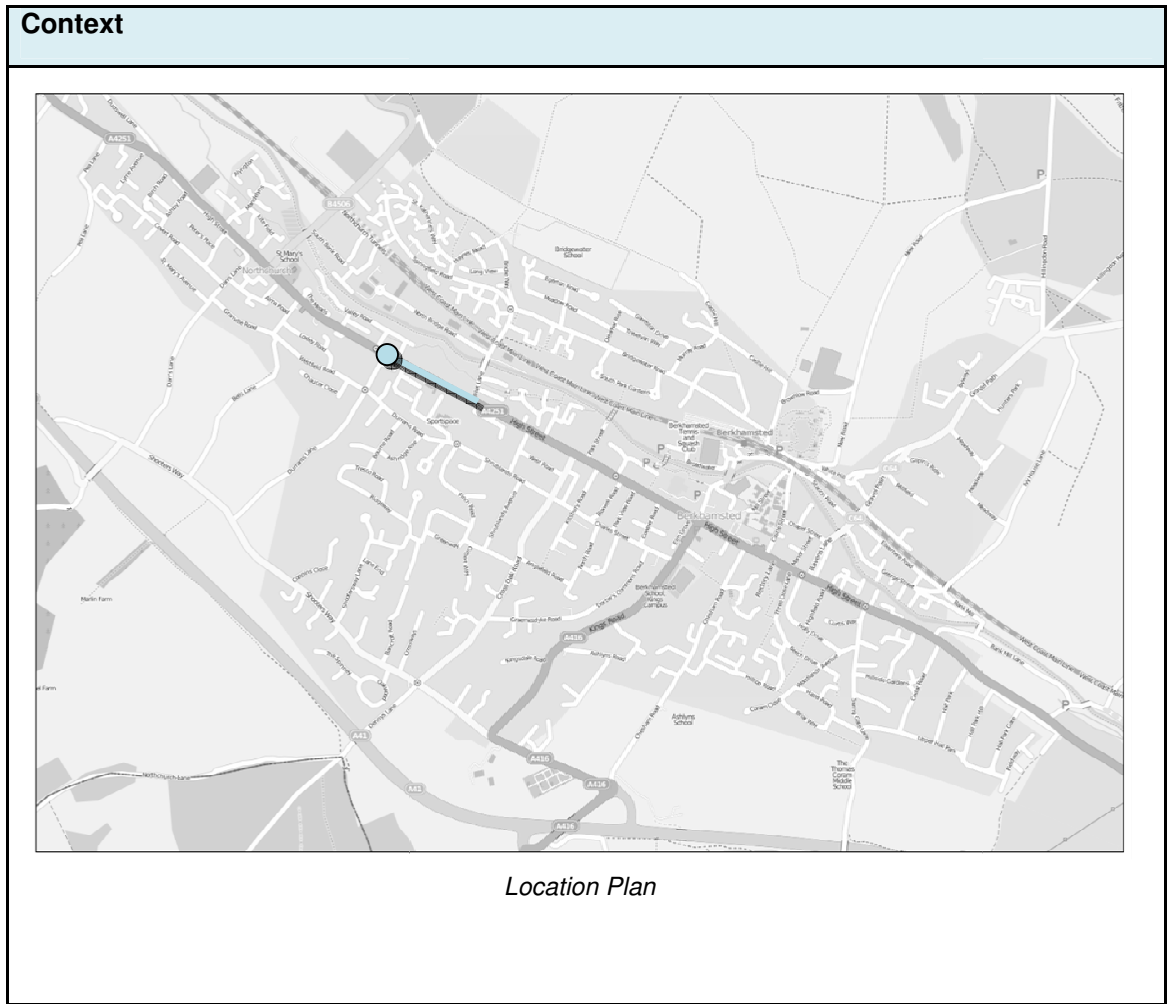


Figure 7 Informal Crossing Point on Billet Lane (SRtS Proposal May 2012)

| | | |
|--------------------------------|---|---|
| Scheme Name | Improve operation of Durrants Lane / High Street junction Walking | |
| Scheme Reference | 20 | |
| Problem References | CH20 | Poor access to Westfield School from High Street |
| | B01 | No safe access for cyclists from High St to Durrants Ln |
| | PT1 | Bus Stops by Durrants Ln lead to dangerous overtaking by pedestrians and junctions |
| | PT2 | Bus stop on A4251 NB is located at pedestrian refuge, blocking road |
| | S1 | No traffic from Moore St at mini roundabout - vehicles do not slow down at junction |
| | W1 | Pedestrian refuge points at High St/Durrants Lane are unsafe due to speed and depth |
| | W2 | No safe crossing point for pedestrians on northern side of High St/ Durrants Ln |
| Links to other schemes: | UTP | 05, 19, 34 |





Durrants Lane / High Street junction is located on the north western outskirts of Berkhamsted town. The current priority junction provides access to residential areas and a through route to Shootersway, in addition to Westfield First School and Egerton-Rothesay School. As a primary route through Berkhamsted and Northchurch, the A4251 High Street is a busy route throughout the day, causing congestion along Durrants Lane, particularly in the school peak hours.

Due to the location, geometry and multiple users of the junction, a number of issues have been raised during Stage 1 of the UTP development.

The private car is perceived to be given priority at this junction. There is wide support for improvement to shift priority to pedestrians and cyclists in order to reduce school based vehicle traffic in the local area, and to encourage sustainable travel to school. There is also a lack of safe crossing points adjacent to the junction, preventing school children or elderly residents from crossing the High Street.



The mini roundabout located at Moore Road (40m northwest along High Street) does not function correctly, as vehicles no longer slow down on approach due to the small amounts of traffic approaching from Moore Road.

It is envisaged that improvements to this junction would enhance the connectivity between key locations, but also encourage mode shift for school based trips from the private car to walking and cycling.

Interventions have been developed to fulfil the following overarching LTP Objectives:

- Support economic development and planned dwelling growth
- Improve transport opportunities for all and achieve behavioural change in mode choice
- Enhance quality of life, health and the natural, built and historic environment for all residents
- Improve the safety and security of residents and other road users

| Measures/Components | | | |
|---------------------|--|--|----------------------|
| Ref | Description | Assessment of Suitability | Cost |
| 20.1 | Provide traffic signals at Durrants Lane / High Street junction, with the inclusion of a Toucan crossing on the approach to Berkhamsted. | <p>A number of issues relate directly to the movement of cars, cyclists and pedestrians through the Durrants Lane/High Street junction, in addition to the build up of traffic along Durrants Lane as a minor arm to the junction.</p> <p>As a result, it is proposed that the junction is signalised in order to improve the safe access of Westfield School, but also to provide safe crossing facilities for all members of the community. In addition, greater priority will be given to trips from Durrants Lane, therefore reducing congestion, and vehicles travelling along High Street will be encouraged to slow down on approach. This action will inevitably cause a certain amount of queuing at these traffic lights.</p> <p>The details of the junction are provided in Figure 2, and have been developed based on DfT Guidance Note TD 50/04.</p> <p>The proposal forms part of a set of local measures that will enhance the environment for residents, including walking and cycling links to the towpath via Billet Lane, and speed limit reductions along High Street. The combination of measures will also encourage pupils to cycle or walk to school.</p> <p>Deliverability – Over 2 years COMPLEX</p> | £200,000 to £250,000 |

| | | | |
|-------------|--|---|-----------------------------|
| <p>20.2</p> | <p>Replace Moore Road mini roundabout with a priority junction</p> |  <p>Moore Road mini roundabout is located approximately 30m northwest of Durrants Lane/High Street junction. The third arm to the roundabout provides access to a small residential area, where traffic flows are very small. One of the main aims of the implementation of the roundabout was to reduce traffic speeds along High Street. However, due to the alignment and proportion of traffic to/from Moore Road, there is a perception that vehicles no longer slow down on approach. It is therefore proposed that, in parallel with the implementation of signals at Durrants Lane, a priority junction replaces the current mini-roundabout (details provided in Figure 2). The kerb radii at the junction could be tightened to 3.0m, subject to swept path analysis to slow down turning vehicles. The measure is suitable once sufficient traffic calming is provided along High Street to prevent speeding.</p> <p>Deliverability – Over 2 years COMPLEX</p> | <p>£150,000 to £200,000</p> |
| <p>20.3</p> | <p>Bus lay-bys on northern side of High Street near Durrants Lane to replace existing on-highway stop facilities</p> |  <p><i>Figure 1 Bus stop location</i></p> <p>In association with the proposed signalisation of the Durrants Lane/High Street junction, it is proposed to implement a bus stop layby at the existing bus stop location on the north side of the High Street (see Figure 3 for details). The proposal includes the following details:</p> <ul style="list-style-type: none"> • Length of the full width to exceed the length of the bus using it; | <p>£17,000 to £18,000</p> |

| | | | |
|--|--|--|--|
| | | <ul style="list-style-type: none"> • A raised boarding area extending to the back of the footway; • Signs and markings to indicate that its use is for buses only; • Seating and shelter to be moved to appropriate position; • 2m footway width; <p>Deliverability – 1 to 2 years STANDARD</p> | |
|--|--|--|--|

Supporting Evidence of Measures/Components

See **Figures 2 and 3**

Preferred Option

The preferred option includes measures 20.1, 20.2 and 20.3. As a result, congestion along Durrants Lane will be mitigated, along with safety concerns along all junction approaches. As a major issue for residents and stakeholders within the study area, the safety of school pupils travelling to Westfield First School will be improved through safer access and reduced speeding along High Street.

It is also recommended that these measures be implemented with those in Scheme 34 (Safer Routes to Schools) in order to provide much safer routes to Westfield school for cyclists and pedestrians.

| | | |
|--|----------------|---|
| Contribution to Objectives / Indicators | UTP Objectives | <ul style="list-style-type: none"> • Promote active travel modes throughout the study area to encourage active and healthy lifestyles • Improve connectivity within and between local towns through a complete network of walking and cycling facilities • Reduce congestion in key traffic hotspots throughout the study area |
|--|----------------|---|

Outline Cost Analysis of Preferred Option or Options

| Design and Implementation | Indicative Cost | Notes |
|----------------------------------|------------------------|--------------|
| 20.1 | £200,000 to £250,000 | |

| | | |
|--------------------------------|---------------------------------|--|
| 20.2 | £150,000 to £200,000 | |
| 20.3 | £17,000 to £18,000 | |
| TOTAL COST FOR DELIVERY | £367,000 to £468,000 | |

| | | |
|------------------------------|-----------------------|--|
| Maintenance Liability | High Medium Low | |
|------------------------------|-----------------------|--|

| | |
|---|---|
| Deliverability of Preferred Option | Simple – ‘quick win’, could be delivered within 1 year |
| | Standard – could be delivered in 1 to 2 years, in line with IWP |
| | Complex – could not be delivered in 2 years, has some issues that require resolution before design |
| Delivery Issues | The planning and implementation of measure 20.1 will include junction modelling and consultation. The geometric restrictions could also be an issue due to the proximity of private land adjacent to Durrants Lane. |

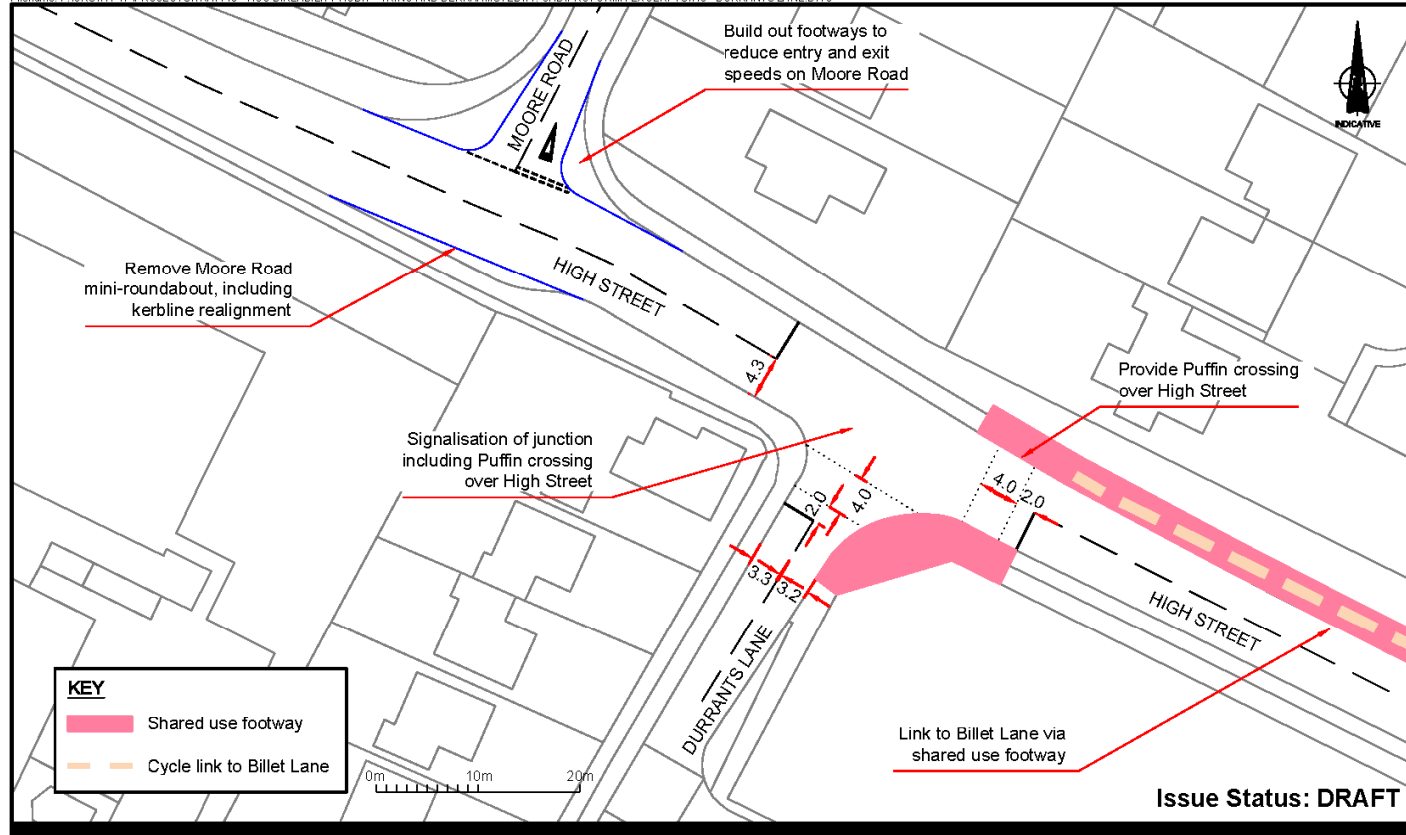
| | |
|--|--|
| Other Information/Additional Notes: | |
| Existing highway dimensions are based on OS mapping provided by HCC and / or site measurements. It is recommended further survey work is carried out to provide a full assessment of available widths during feasibility design. | |
| Schemes shown in grey have been considered but are not deemed to be feasible and are not recommended to be progressed. | |

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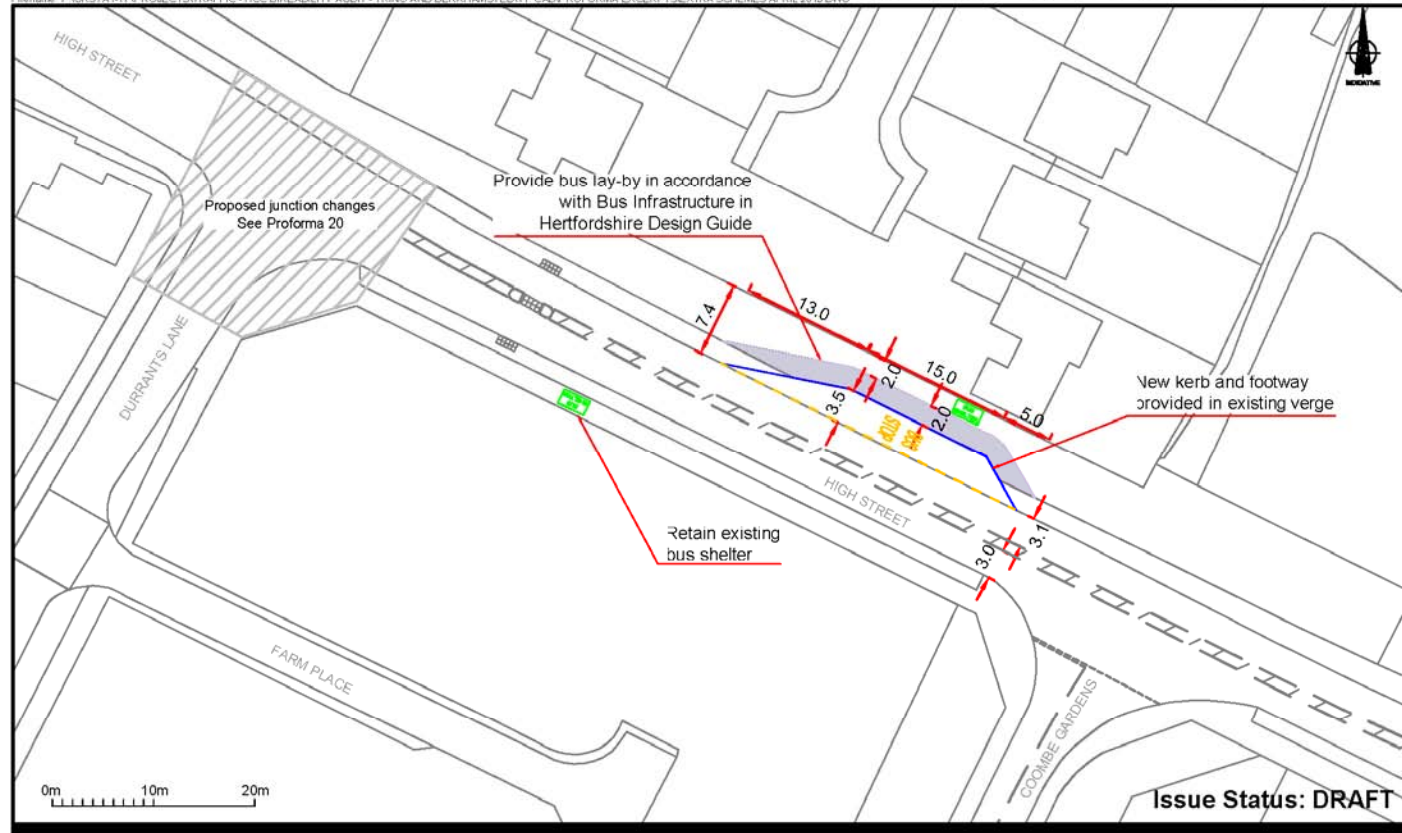
Figure 2 - Durrants Lane / High Street amendments

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Figure 3 - Bus stop on High Street near Durrants Lane