

Scheme Name	Improve operation of High Street / Kings Road Junction Highways and Congestion	
Scheme Reference	01	
Problem References	CH1	High St/Kings Rd long delays in all directions
	CH7	Kingshill Way has been specified as a congestion hotspot
	CH9	Lower Kings Rd signals require new timings (intergreens are too long)
	CH13	Charles St is currently a rat-run
	CH15	Congestion on London Rd/Kings Rd junction
	B15	High Street traffic calmed but remains traffic dominated
Links to other schemes:	UTP	08, 05, 02, 16

Context



Figure 1 Location Plan

High Street/Kings Road signalised junction is located in the centre of Berkhamsted Town, connecting the main routes of A416 Kings Road/Kingshill Way to the south, A4251 High Street to the east and west, and Lower Kings Road to the north.

The traffic signals are currently MOVA operated, with fluctuating signal timings based on traffic conditions throughout the day. As the main junction in Berkhamsted, it accommodates a large amount of traffic in all directions, which in recent years has caused congestion on all arms of the junction during peak periods.

There is wide support for reducing congestion along Berkhamsted High Street, as it is perceived to be one of the main transport issues within the study area. However, the geometry and highway boundary at this location, and along the High Street, prevents any major infrastructure improvements. To improve the transport facilities at High Street/Kings Road signalised junction measures have been developed, as examined below, to fulfil the following overarching LTP Objectives:



- Improve transport opportunities for all and achieve behavioural change in mode choice
- Improve the safety and security of residents and other road users
- Reduce transport's contribution to greenhouse gas emissions and improve its resilience

Measures/Components			
Ref	Description	Assessment of Suitability	Cost
01.1	Update MOVA signal timings to reflect current traffic conditions	<p>As a result of restricted junction geometry and highway boundary, operational improvements are restricted to changes in signal timings.</p> <p>As a result, it is proposed to update the existing MOVA signal timings to reflect current traffic conditions. Less congestion would then occur at the junction, with priority given to higher demand. An initial interrogation of signal timings (see Figures 3 and 4) suggest that the inter-green times may be reduced initially to increase the capacity, but also increasing the cycle time should reduce the proportion of inter-green time.</p> <p>The measure would require a turning count at this junction to ascertain the current traffic levels at each approach. In addition, any changes to the signal times should take into account Scheme 02 (Improved Signage on A41), as approach traffic proportions may adjust from the High Street to Kings Road.</p> <p>Deliverability – less than 1 year SIMPLE</p>	£4,000 to £6,000

01.2	Provide Advanced Stop Lines (ASLs) on all four junction approaches	Investigate the feasibility of implementing 4.0m Advanced Stop Lines (ASLs) on all approaches at the High Street / Kings Road Junction to increase priority for cyclists at the junction and improve conspicuousness. Where possible, suitable feeder lanes should be provided, however width restraints mean it is likely ASLs would be gated. The impact on capacity at the junction would need to be assessed. Deliverability – less than 1 year SIMPLE	£4,000 to £6,000
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Supporting Evidence of Measures/Components

MOVA maintains the green whilst the flow is maintained at, or above, saturation flow rate as determined by the standard MOVA detector layout; once the end of saturation flow has been detected a delay optimisation process begins. If one or more lanes are oversaturated, MOVA uses a capacity-maximising algorithm instead of the delay-optimising process (*Source: DfT Traffic Advisory Leaflet 2/03*).

Preferred Option

The preferred option includes all proposed measures. The combination of measures will assist in the reduction of congestion along Berkhamsted High Street, but also enhance the priority of vulnerable road users within the town centre. Combined with the enhancement to traffic signs, cycle parking and monitoring of travel planning, congestion should significantly reduce on the High Street.

Contribution to Objectives / Indicators	UTP Objectives	<ul style="list-style-type: none"> Reduce congestion in key traffic hotspots throughout the study area
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Outline Cost Analysis of Preferred Option or Options

Design and Implementation	Indicative Cost	Notes
01.1	£4,000 to £6,000	
01.2	£4,000 to £6,000	
TOTAL COST FOR DELIVERY	£8,000 to £12,000	

Maintenance Liability	High Medium Low	<i>High Friction Surfacing proposed on westbound approach</i>
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Deliverability of Preferred Option	<p>Simple – ‘quick win’, could be delivered within 1 year</p> <p>Standard – could be delivered in 1 to 2 years, in line with IWP</p>
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	Complex — could not be delivered in 2 years, has some issues that require resolution before design
Delivery Issues	Junction modelling and associated traffic counts would be required to examine the impact of providing improved MOVA at this junction.

Other Information/Additional Notes:



TRAFFIC SIGNALS JUNCTION TIMING SHEET SHEET 1

Dated : 03.12.1998

SITE NO: JW2/006

TOWN: BERKHAMPSTEAD

ROAD NO/NAME: A4251 HIGH ST / KINGS RD

CONTROLLER TYPE: PLESSEY 200

	A	B	C	D	E	F	G	H	I	J	K	L
STAGES	1	1	2	3	4	4	4	4				
MAX A	30	30	15	15	8	8	8	8				
MAX B	40	40	16	16	8	8	8	8				
MAX C	60	60	12	12	8	8	8	8				
MAX D	20	20	10	10	8	8	8	8				
min greens	7	7	7	7	8	8	8	8				
extensions	3	3	1.6	1.6	-	-	-	-				
ped blackout					6	6	6	6				

Figure 3 Traffic Signals Timing Sheet



Mouchel TSC		TRAFFIC SIGNALS JUNCTION TIMING SHEET 2														
MAX TIMING SETS																
MAX SET		FROM				TO										
MAX SET A		07:30				09:30										
MAX SET B		09:30				16:30										
MAX SET C		16:30				18:30										
MAX SET D		18:30				24:00										
INTERGREEN TIMINGS.																
X	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A	X		6	5	5	10	8	10								
B		X	5	6	10	5	9	9								
C	7	5	X	6	10	9	10	6								
D	6	6	6	X	10	12	6	8								
E	12	12	12	12	X											
F	12	12	12	12		X										
G	9	9	9	9			X									
H	13	13	13	13				X								
I									X							
J										X						
K											X					
L												X				
M													X			
N														X		
O															X	
P																X

UTC I/F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CONTROL BITS	F1	F2	F3	F4												TO
REPLY BITS	G1	G2	G3	G4		WR E	WR F	WR G	WR H							CRB
DET ALLOCIN																

PLAN NO	FROM	TO

FORM SF-214 ISSUE 3 JAN 1998

Figure 4 Traffic Signals Intergreen Timing Sheet

Scheme Name	Improve Access and Egress Signage for A41 Bypass Highways and Congestion	
Scheme Reference	02	
Problem References	CH1	High St/Kings Rd long delays in all directions
	CH16	Through traffic not using the A41 bypass, causing congestion
	CH19	Incorrect access signs along A41
	E1	Too many HGVs in town, causing localised pollution
Links to other schemes:	UTP	01, 04, 16

Context



Figure 1 Location Plan

Opened in September 1993, the A41 Berkhamsted bypass was built to alleviate through traffic along Berkhamsted High Street without having a detrimental effect on the town's reputation as an historic market town with a bustling local economy.

Since its construction, traffic levels have continued to increase on the A41 bypass and Berkhamsted High Street. A number of factors have contributed towards this growth, including a rising population, higher levels of car ownership, and increased commuter trips into London. However, consultation responses have indicated that the location of signage into Berkhamsted from the A41 is perceived to be problematic, resulting in unnecessary congestion through the town centre. The current signage directs southbound traffic onto the

A4251 north of Berkhamsted, through Cow Roast and Northchurch. Northbound traffic is directed onto A416 Kingshill Way.

The following scheme has been proposed to reduce town centre congestion, but also improve access from the A41 to Berkhamsted Town Centre. The scheme has been developed to fulfil the following overarching LTP Objectives:

- Support economic development and planned dwelling growth
- Enhance quality of life, health and the natural, built and historic environment for all residents
- Reduce transport's contribution to greenhouse gas emissions and improve its resilience



Measures/Components			
Ref	Description	Assessment of Suitability	Cost
02.1	Change current A41 egress signage to Berkhamsted, from A4251 to A416	<p>Due to the current location of access signs from the A41 to Berkhamsted, there is a large amount of traffic travelling through Northchurch and west Berkhamsted to access Berkhamsted Town Centre. Combined with inaccurate parking signage within the town centre, unnecessary congestion occurs along Berkhamsted High Street.</p> <p>As a result, there is a perception that transferring access signage to A416 instead of A4251 would reduce town centre congestion, but also improve air quality through Northchurch and west Berkhamsted. The proposal would also reduce the amount of HGVs travelling through Northchurch and west Berkhamsted.</p> <p>To deliver the proposed measure, two traffic signs would need to be replaced along the A41. In addition, changes to the signal timings at High Street/Kings Road would need to consider increased traffic along Kingshill Way.</p> <p>Deliverability – 1 to 2 years STANDARD</p>	£15,000 to £20,000

02.2	Provide sign to Berkhamsted at A41/A4251 junction	The sign to Northchurch and Berkhamsted at the A41/A4251 junction roundabout is currently missing. See Figure 2 , below. This relates to issues with routing and way finding in the local area. However, it is a maintenance issue, and should therefore be replaced within the highway maintenance budget. Deliverability – Less than 1 year SIMPLE	£2,000 to £4,000
02.3	Replace broken sign to Berkhamsted on A41 junction (southbound off-slip)	The sign to Berkhamsted at the A41/A4251 junction off-slip is currently broken. This relates to issues with routing and way finding in the local area. However, it is a maintenance issue, and should therefore be placed within the highway maintenance budget. Deliverability – Less than 1 year SIMPLE	£2,000 to £4,000

Supporting Evidence of Measures/Components



Figure 2 Measure 02.2

Preferred Option

The preferred option includes measures 02.1, 02.2 and 02.3, thus reducing congestion along Berkhamsted High Street, and providing a more direct access route from the A41 to Berkhamsted Town Centre. It is recommended that the measures are implemented following those proposed in Scheme 4 (Improvements at Shootersway / Kingshill Way Junction), as directing further traffic along Kings Road would exacerbate the existing traffic conditions at this junction. As a result, the MOVA operated signals at Shootersway / Kings Road could be adjusted to reflect the change in traffic conditions.

It should also be noted that the preferred option does not involve signage changes at the Bourne End A41 junction.

Contribution to Objectives	UTP	<ul style="list-style-type: none"> • Reduce congestion in key traffic
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/ Indicators	Objectives	hotspots throughout the study area
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Outline Cost Analysis of Preferred Option or Options		
Design and Implementation	Indicative Cost	Notes
02.1	£15,000 to £20,000	
02.2	£2,000 to £4,000	
02.3	£2,000 to £4,000	
TOTAL COST FOR DELIVERY	£19,000 to £28,000	

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
	Complex – could not be delivered in 2 years, has some issues that require resolution before design
Delivery Issues	

Other Information/Additional Notes:

Scheme Name	Improvements along New Road corridor Northchurch (between High Street and South Bank Road) Highways and Congestion	
Scheme Reference	03	
Problem References	CH2	High St/New Rd congestion
	CH10	Too many HGVs on B4506 New Road
	CH11	New Road too narrow for HGVs and passing points
	B10	No dedicated cycle routes in Berkhamsted
	B14	Lack of wayfinding for pedestrians and cyclists in Berkhamsted
	B35	The potential to provide a link between New Road and Spring Field Road needs to be explored as connectivity for cyclists on the north side of the High St is poor
	E1	Too many HGVs in the town, causing localised pollution
Links to other schemes:	UTP	09, 23, 02, 26, 29

Context



Location Plan

New Road is a B-class distributor road located in Northchurch (see **Figure 8**), and it is one of the main routes between Leighton Buzzard and Dunstable in the north, and Berkhamsted in the south, due to its classification, and lack of alternative local routing. As a result, a large number of HGVs use this route, generating issues relating to Air Quality, noise and safety in the local area. The New Road/High Street area has recently been recognised as an Air



Figure 1 High Street/New Road junction (AQMA)



Figure 2 Narrow Canal Bridge on New Road

Quality Management Area (AQMA)¹ due to its high levels of Nitrogen Dioxide (NO₂). See results in 'Supporting Evidence' and **Figure 9**.

St Mary's First School is located adjacent to New Road, between Northchurch High Street and the Grand Union Canal. Subject to changes in local education to a two-tiered system, the school will be increasing in size in 2014 (from 150 pupils to 210 pupils), as its maximum age increases from 9 to 11 years². This increase in school based trips will add to local congestion, with a need to further enhance local walking and cycling infrastructure, along with encouraging use of transport modes other than the private car.

In addition to the above issues, the New Road corridor includes access to the canal towpath via a ramp and steps on its northern side. It is currently perceived that due to towpath condition and poor accessibility, people are reluctant to use the towpath to access local destinations as a viable alternative to the private car or the High Street route.

Other areas which have caused concern for stakeholders include a narrow bridge over the canal and the New Road / High Street junction. The narrow bridge, combined with local access to the canal towpath and St Mary's School, does not provide an ideal route for HGV through trips. In addition, congestion occurs at the High Street junction, with queuing along New Road, and poor visibility on exit onto the High Street.

A number of transport improvement options have therefore been developed for the New Road corridor between Northchurch High Street and South Bank Road. It is envisaged that a combination of options will be proposed to deliver a scheme that will enhance local transport, and work towards a local transport system that will provide a variety of travel options for the local population.

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

- Improve transport opportunities for all and achieve behavioural change in mode choice;

¹ <http://www.dacorum.gov.uk/pdf/SPAE%20-%2011-12-06%20-%20Designation%20of%20Air%20Quality%20Management%20Areas.pdf>

² From Hertfordshire County Councils Cabinet Meeting – Future School Organisation in Berkhamsted (July 2012)

<ul style="list-style-type: none"> Enhance quality of life, health and the natural, built and historic environment for all residents Reduce transport's contribution to greenhouse gas emissions and improve its resilience 			
Measures/Components			
Ref	Description	Assessment of Suitability	Cost
03.1	Introduction and enforcement of HGV weight limit from High Street/New Road junction to South Bank Road	<p>Implement and enforce a Weight Restriction Order under the Road Traffic Regulation Act 1984 along New Road and provide weight restriction signs at entrances to New Road. Weight Restriction Orders are implemented in order to:</p> <ul style="list-style-type: none"> Reduce danger for pedestrians and other road users; Preserve the character, amenity and environment of an area; Reduce and manage congestion on roads. <p>The sign in Figure 3 is used "when goods vehicles are prohibited for environmental reasons (e.g. when roads are narrow and unsuitable for large vehicles), or to protect residents from the nuisance caused by lorries in residential streets. The sign is not used for structural limits, such as those to protect weak bridges".³ This fits directly with the issues currently experienced on New Road. It is therefore envisaged that the measure would reduce danger near to St Mary's School, assist in the reduction of NO₂ levels in the local area, and reduce congestion at High Street / New Road junction.</p> <p>The sign demonstrated in Figure 4 would also be required on the reverse of the sign in Figure 3, to demonstrate the termination of the weight restriction.</p>	£30,000 to £35,000



Figure 3 Weight Restriction



Figure 4 Termination Sign

³ Traffic Signs Manual – Chapter 3 (2008) DfT



		<p>The two signs would be required on both sides of the carriageway at the junction with High Street, and at the junction with Toms Hill Road.</p> <p>As a result of the weight restriction, initial rerouting signs would be required, along with agreement with Sat-Nav providers in order to redirect HGVs to other routes. See Figure 6 for routes.</p> <p>Deliverability – 1 to 2 years STANDARD</p>	
03.2	Adjust vehicle priority at High Street/New Road junction to include Give Way on High Street (Southbound)	<p>There are currently a large amount of trips travelling to/from Berkhamsted via New Road. In addition, with the potential change in access signage along A41, fewer vehicles will access Berkhamsted through Northchurch. As a result, it is proposed to change the priority at the junction to allow greater movement between High Street (south) and New Road.</p> <p>However, following analysis of the proposal and assessment of current issues, the potential issues related with this measure would outweigh the benefits. Firstly, (following a review of TD42/95: Geometric Design of Major/Minor Priority Junctions⁴) it was found that visibility from the High Street north approach would be less than required for a minor arm due to the location of adjacent buildings, but also for right turners from New Road. In addition, the proposal would increase pollution levels within Northchurch as a result of increased congestion along High Street, but also encourage high speeds adjacent to St Marys' First School.</p> <p>NOT DELIVERABLE</p>	

⁴ <http://www.dft.gov.uk/ha/standards/dmrb/vol6/section2/td4295.pdf>

03.3	<p>Improve Cycling and Walking Link to canal towpath (including wayfinding and access)</p>	<p>Access to the towpath from New Road is currently achieved by crossing from the eastern footway onto a sloped access to the towpath. There is no dropped kerb for pedestrians to complete this movement, with no provision of a dropped kerb at this location. However, no tactile paving is proposed as it cannot be provided on the western kerbline due to access requirements to the canal.</p> <p>Provide a directional sign on existing street furniture to enable cyclists to access the towpath from New Road. A viable east to west alternative route to the High Street using the towpath, connecting Tring and Berkhamsted and allowing access to Northchurch, is proposed. The Chilterns Cycleway extends along this section, connecting into a wider cycle network.</p> <p>This measure will complement schemes proposed to improve the towpath through the town centre (refer to Proforma 9). Condition and accessibility improvements will allow the towpath to become a viable and attractive alternative to the High Street for trips through the town centre.</p> <p>Deliverability – 1 to 2 years STANDARD</p>	<p>£2,000 to £4,000</p>
03.4	<p>Provide Cycle Link between Spring Field Road and New Road</p>	<p>Poor connectivity for cyclists and pedestrians between Spring Field Road and New Road was highlighted as an issue during stakeholder consultation.</p> <p>A feasibility study was undertaken in 2010 on behalf of HCC to identify whether a new access road could be provided to link Spring Field Road and New Road. The study noted issues surrounding visibility and level differences at the site (see Figure 5). Further issues regarding land ownership and the presence of a wildlife site at Tunnel Fields were also identified.</p> <p>An evaluation of the new link road concluded it was unfeasible as it did not offer value for money, would result in rat running and would exacerbate existing issues at the New Road /</p>	<p>£100,000 to £150,000</p>



		<p>High Street Junction. Connectivity could however be improved for non motorised users through the provision of a cycle link.</p> <p>The provision of a cycle link would encounter similar issues regarding land acquisition, connection with New Road and level differences. Figure 5 shows a significant difference in elevation with a drop of 2m from Tunnel Fields to New Road.</p> <p>A facility could be provided that includes a ramp to combat the elevation issue, however, there would be a number of design issues to address during feasibility design (see Figure 7). A ramp would need to be provided with a preferred gradient of 5%, resulting in a 40m ramp to counter the 2m elevation from Tunnel Fields to New Road. The existing trees would require removal to provide sufficient width for a shared use ramp, which may be to the detriment of the housing due to their use as screening from the road.</p> <p>This would greatly improve permeability between New Road and Spring Field Road, allowing a Bikeability Level 1 route to be provided (Figure 10).</p> <p>Deliverability – Over 2 years COMPLEX</p>	
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Supporting Evidence of Measures/Components

Location	Annual mean NO ₂ concentrations (µg/m ³)		
	2008	2009	2010
High Street, Northchurch	42	42	45
New Road, Northchurch	38	42	42

Table 1 – AQMA Evidence, from 2011 Air Quality Progress Report
For Dacorum Borough Council, June 2011

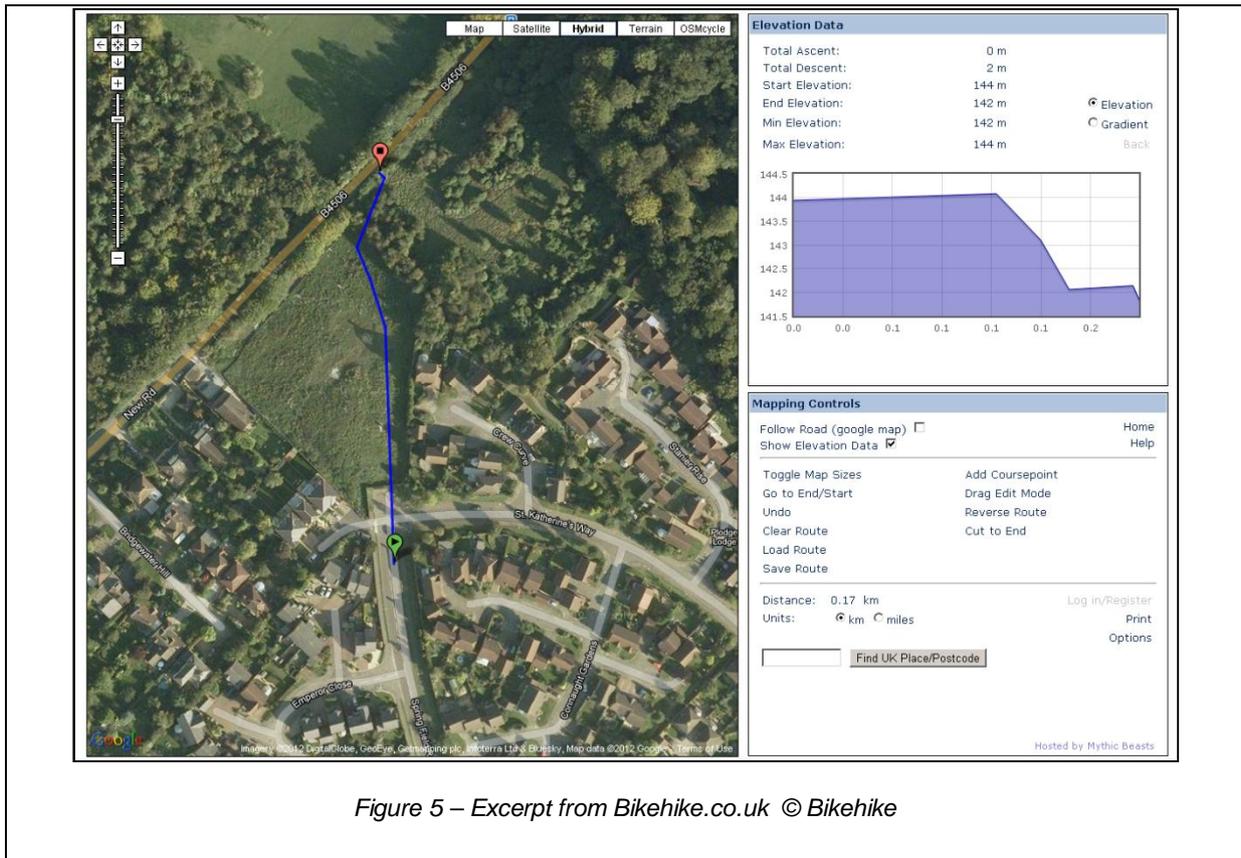


Figure 5 – Excerpt from Bikehike.co.uk © Bikehike

Tring, Northchurch and Berkhamsted UTP
Scheme Proforma 03



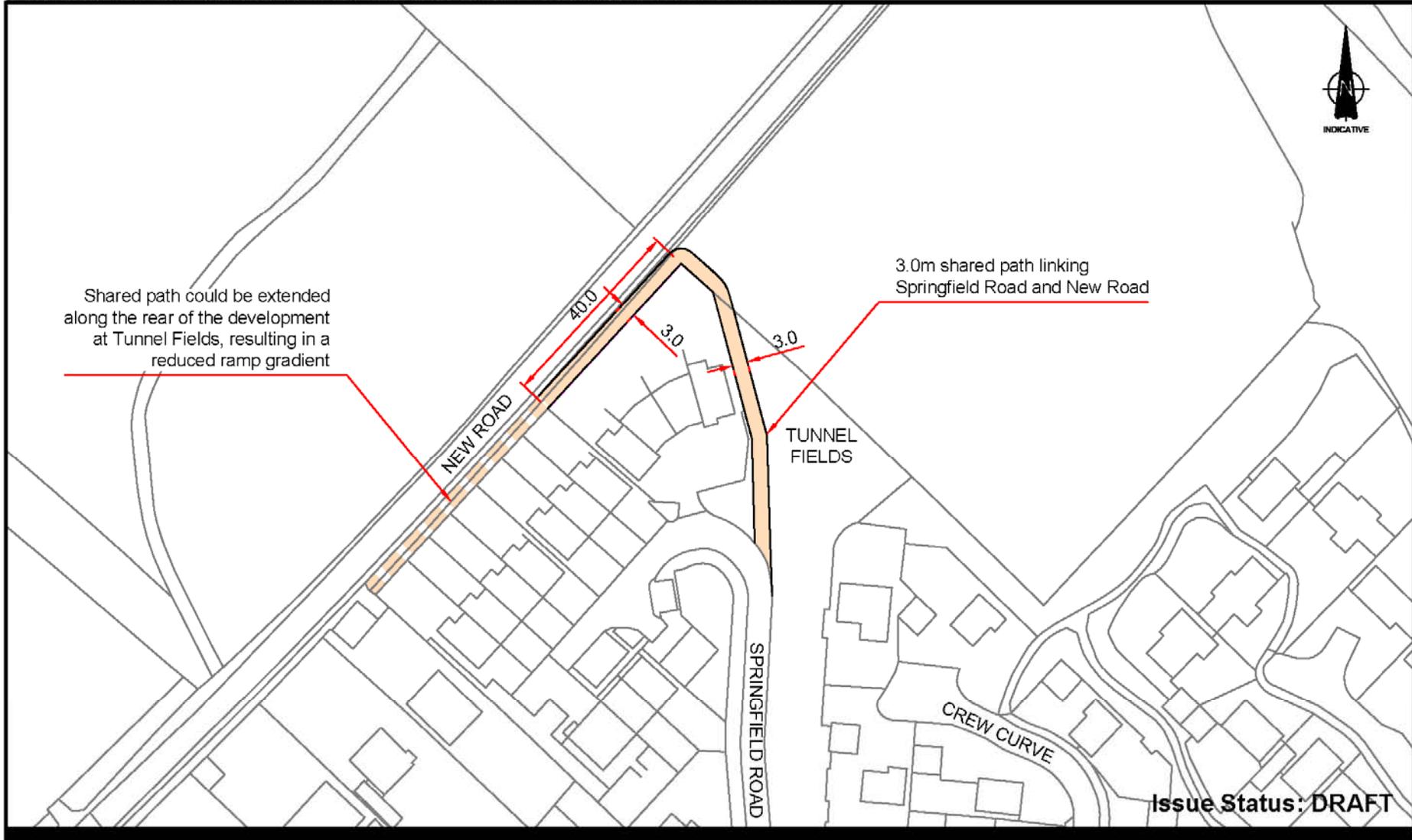
Figure 6 – Proposed Location of HGV Restriction and Associated Routes

Tring, Northchurch and Berkhamsted UTP Scheme Proforma 03



Last saved by: ARTISM1 (2012-09-25) Last Plotted: 2012-11-14
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Project Management Initials: Designer: MJA Checked: HCG Approved: ADR ISO A4 210mm x 297mm



Tring and Berkhamsted
Urban Transport Plan
Hertfordshire County Council
Project No.: 60267074 Date: September 2012



Figure 7 New Road / Springfield Road feasibility option



Figure 8 – Location Plan



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Regulatory Services

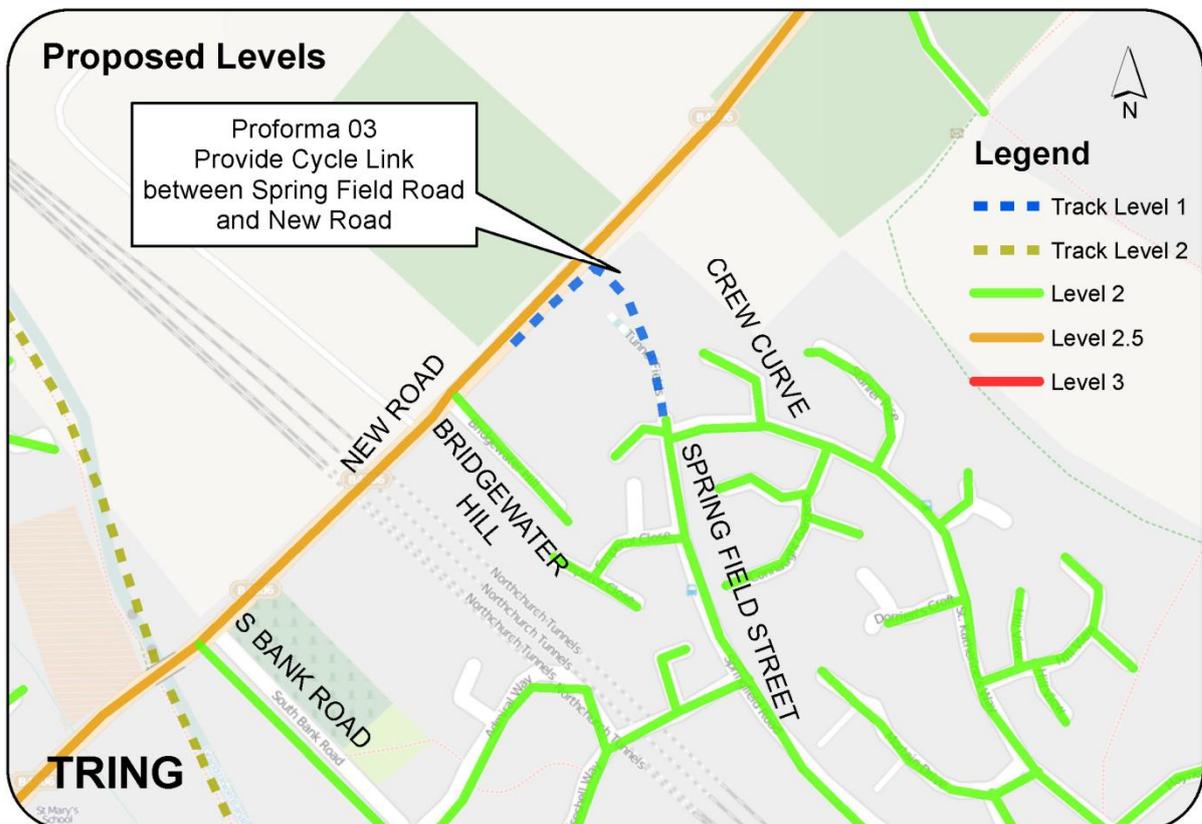
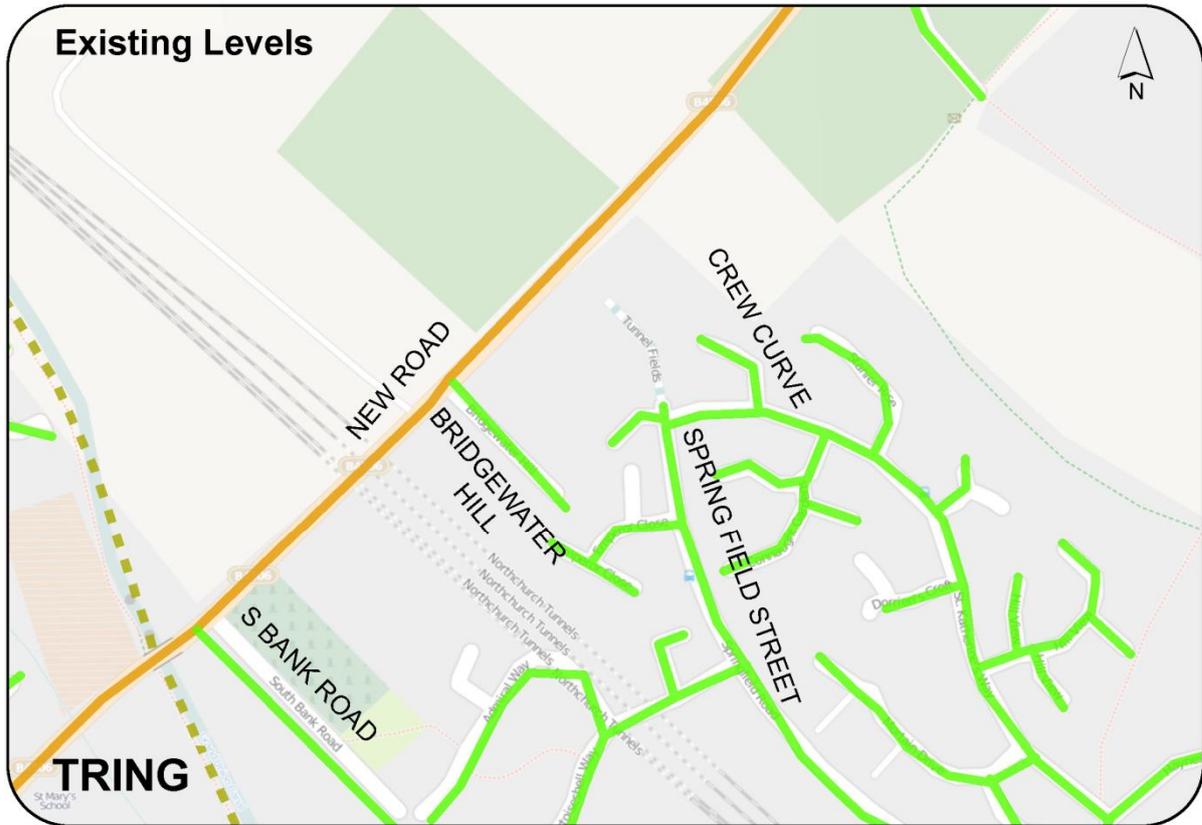
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Scale:1:1250
Tile Ref:
SP9708NW



Figure 9 – Air Quality Management Area Map

(c) OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA)



Preferred Option

The preferred option includes measures 03.1, 03.3 and 03.4. The combination of these measures will provide a safer corridor for vulnerable road users, but also encourage cycling and walking to St Marys' School whilst reducing congestion on the local highway network. In addition, the reduction in congestion and HGVs on New Road will improve air quality within Northchurch, and therefore reduce NO₂ concentrations. Measure 03.4 has a number of issues which would need to be resolved regarding highway boundary, environmental impact and adverse gradients. However, the option should be pursued as the facility could improve permeability for pedestrians and cyclists in this area.

Measure 03.2 is not included within the preferred option because costs are high, questions are raised regarding the safety of vulnerable road users along New Road and congestion on Northchurch High Street is likely to increase as a result of the repositioning of the minor arm.

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 Address signage issues within the towns to enable effective and efficient navigation of the town Reduce congestion in key traffic hotspots throughout the study area
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Outline Cost Analysis of Preferred Option or Options

Design and Implementation	Indicative Cost*	Notes
03.1	£30,000 to £35,000	
03.3	£2,000 to £4,000	
03.4	£100,000 to £150,000	
TOTAL COST FOR DELIVERY	£132,000 to £189,000	

*Costs provided by HCC

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	Replacement routes for HGVs would be required following the implementation of the weight limit on New Road.

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.

Scheme Name	Improvements at Shootersway / Kingshill Way Junction Congestion and Highways	
Scheme Reference	04	
Problem References	CH7	Kingshill Way has been specified as a congestion hotspot
	CH14	Congestion on A416/Shootersway Junction
	B29	Cycle bypass at Shootersway / Kingshill Way is never used, the alignment is poor and it creates a maintenance issue as debris collects in the cut through
	S6	Inappropriate speed on Kings Road
Links to other schemes:	UTP	02

Context



Figure 1 Location Plan

The Shootersway / Kingshill Way Junction is located approximately 1.2km south of Berkhamsted High Street, via the A416 Kings Road. Two arms of the priority junction form part of the primary route from the A41 bypass into central Berkhamsted, with the third (Shootersway) providing access to local destinations.

The junction accommodates a high volume of traffic, including transit HGV traffic and local private trips, as one of three gateways into Berkhamsted Town Centre.

Due to the geometry and visibility at the junction, the primary flow along the A416 prevents egress from Shootersway during peak periods. In addition, recent surveys suggest that

vehicles frequently travel above the speed limit along A416, creating an unsafe atmosphere for cyclists and pedestrians, but also for vehicles attempting to access Kings Road from Shootersway. A variety of measures have therefore been developed to tackle the current transport issues at this junction, taking into account the function of the A416 as the main route into and out of Berkhamsted Town Centre, along with potential impacts on local routes. It is vital that the A416 remains a key route through Berkhamsted, as there is support to remove 'rat-running' from more local routes, but also to sustain and enhance the towns' reputation as a vibrant market town and visitor location.



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

- Support economic development and planned dwelling growth
- 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
04.1	Replace priority junction with an off-set mini roundabout to remove congestion along Shootersway and speeding along Kings Road	 <p>A number of issues have been identified at Shootersway/Kings Road junction and its adjacent roads (primarily based on speeding and congestion). To relieve congestion, but also to reduce speeds through the junction, a mini-</p>	

		<p>roundabout is proposed.</p> <p>Due to the location of the highway boundary (see Figure 2), there is scope for either a roundabout (see Figure 3) or mini-roundabout (see Figure 4) as a replacement to the current priority junction.</p> <p>A brief feasibility sketch was produced for both proposals, based on DfT Guidance Notes TD 54/07 and TD 16/07. The sketches suggest that the geometric features are feasible for both proposals, with further analysis required in terms of visibility and detailed junction modelling and design. However, a decision on the preferred approach would require recent traffic counts at the junction in order to ascertain the required level of infrastructure (see Table 6/1 within Guidance Note TD 54/07). In addition, the measure would require new signage and pedestrian crossing points.</p> <p>It is also anticipated that traffic along the A416 will increase in the future. By implementing the measure, greater priority will be placed on Shootersway traffic, and speeds will be reduced.</p> <p>NOT DELIVERABLE</p>	
04.2	<p>Change priorities at junction to relieve congestion on Shootersway whilst reducing average speeds on Kings Road</p>	<p>In order to provide sufficient evidence for the implementation of a priority junction, traffic counts will need to be completed at the existing junction.</p> <p>The focus of the measure is to relieve congestion along Shootersway. However, the proposal will also reduce speeds along Kings Road, which is currently an issue. The proposal (provided as a sketch in Figure 5) changes the minor arm to Kings Road from Shootersway, providing the major route from Kingshill Way to Shootersway.</p> <p>The diagram suggests that the geometry of the junction does not provide sufficient visibility for traffic approaching the junction from Kings Road. Also, without sufficient traffic data, it is difficult to ascertain the potential congestion along Kings Road and Kingshill Way as a result. Therefore, it is proposed that detailed junction modelling is completed once current traffic conditions are identified through turning counts.</p> <p>NOT DELIVERABLE</p>	

<p>04.3</p>	<p>Remove cycle bypass from junction</p>	 <p>The existing cycle bypass between Kingshill Way and Shootersway is poorly aligned and not attractive to cyclists. Its lack of utilisation means that debris collects in it, creating a maintenance issue. It is therefore recommended to be removed.</p> <p>Deliverability – 1 to 2 years STANDARD</p>	<p>£10,000 to £15,000</p>
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04.4	Replace priority junction with signalised junction with pedestrian phase	<p>A signalised junction would allow the provision of a controlled pedestrian crossing, whilst managing congestion levels along Shootersway. In addition, the signal timings can be adjusted to manage congestion using MOVA operated signals.</p> <p>Compared to other options (e.g. roundabout), visibility would not be an issue, with appropriate priority given to vulnerable road users. See Figure 6 for details.¹</p> <p>In conjunction with the proposal, signage would be required on approach to encourage road users to travel along Kings Road to access Berkhamsted Town Centre. There is a perceived issue that Shootersway has become a rat-run due to the congestion along Berkhamsted High Street. Appropriate signage would assist in the reduction of vehicles using Shootersway as a through route.</p> <p>Deliverability – Over 2 years COMPLEX</p>	£350,000 to £400,000
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Supporting Evidence of Measures/Components

Preferred Option

The preferred option includes measures 04.3 and 04.4. The implementation of a Traffic Signal Junction would be desirable, as this involves less delivery issues than a roundabout. In addition, greater priority is given to vulnerable road users and improved connectivity through the junction.

The removal of the cycle bypass should be implemented, as the route is currently unsafe for cyclists due to its alignment. Implementation of 04.4 would include the removal of the cycle bypass, therefore no associated costs are included. It is however suggested that the cycle bypass is removed as part of ongoing maintenance as a 'quick win', prior to the implementation of any major junction reconfiguration.

Contribution to Objectives / Indicators	UTP Objectives	<ul style="list-style-type: none"> • Support economic growth and local housing development through the delivery of transport improvements • Reduce congestion in key traffic hotspots throughout the study area
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¹ As detailed within the Stage 1 Feasibility Report for Kingshill Way/Kings Road/Shootersway junction (Feb 2010)

Outline Cost Analysis of Preferred Option or Options		
Design and Implementation	Indicative Cost	Notes
04.3	£10,000 to £15,000	This cost would be included within the costs for measure 04.4.
04.4	£350,000 to £400,000	
TOTAL COST FOR DELIVERY	£350,000 to £400,000	

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
	Complex – could not be delivered in 2 years, has some issues that require resolution before design
Delivery Issues	A number of issues have been identified regarding the delivery of this scheme. Firstly, a Road Safety Audit (Stages 1 and 2) would be required for the Traffic Signal Junction, in addition to a street lighting audit. As detailed within the Stage 1 Feasibility Report, the Traffic Signal Junction would also require budget for diversion works, a temporary TRO would be required to shut the road during construction, and a site investigation regarding the existing bank on the east side of Kings Road.

Other Information/Additional Notes:

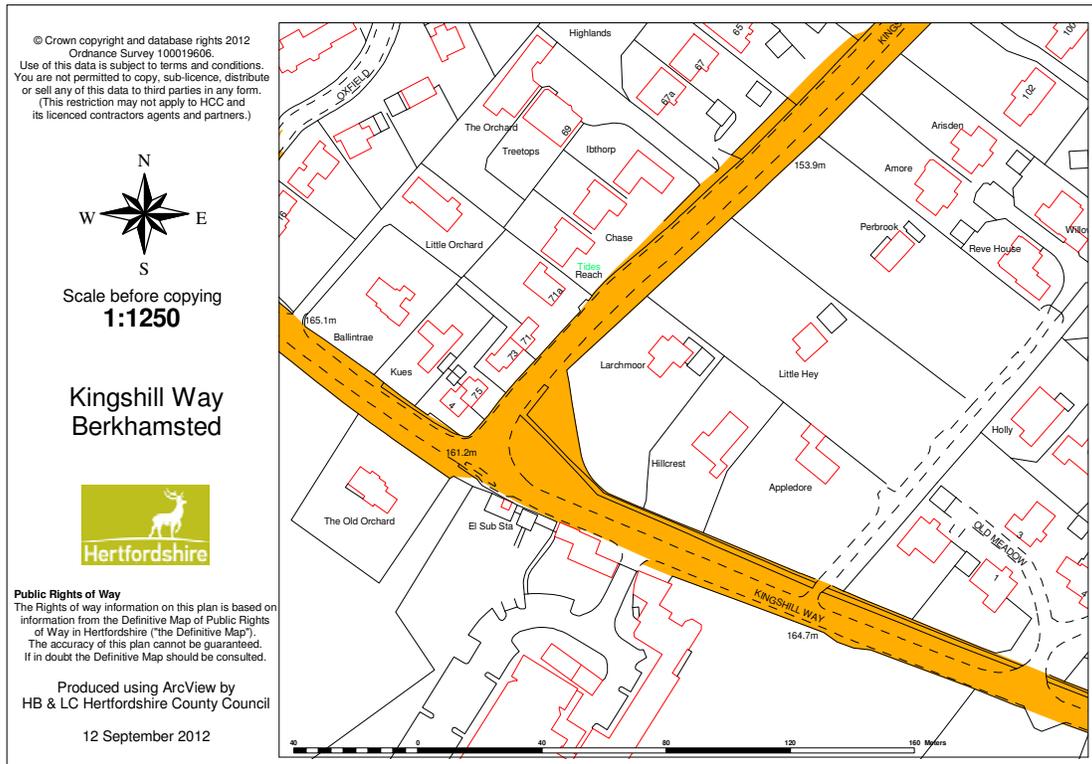


Figure 2 Existing highway boundary

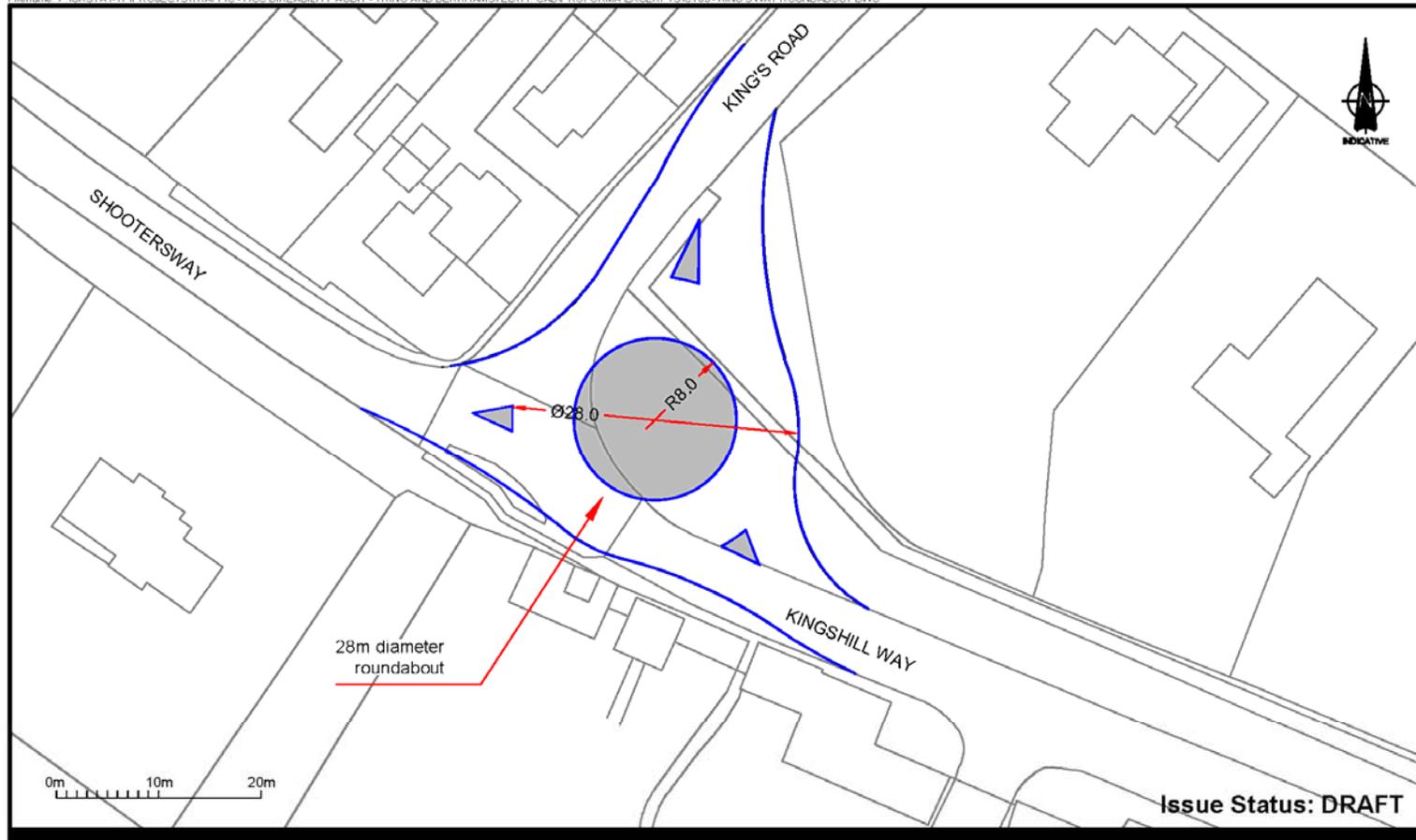
Existing highway dimensions are based on OS mapping provided by HCC and / or site measurements. It is recommended further survey work is carried out to provide a full assessment of available widths during feasibility design.

Tring, Northchurch and Berkhamsted UTP Scheme Proforma 04



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Urban Transport Plan
Hertfordshire County Council
Project No.: 60267074 Date: September 2012



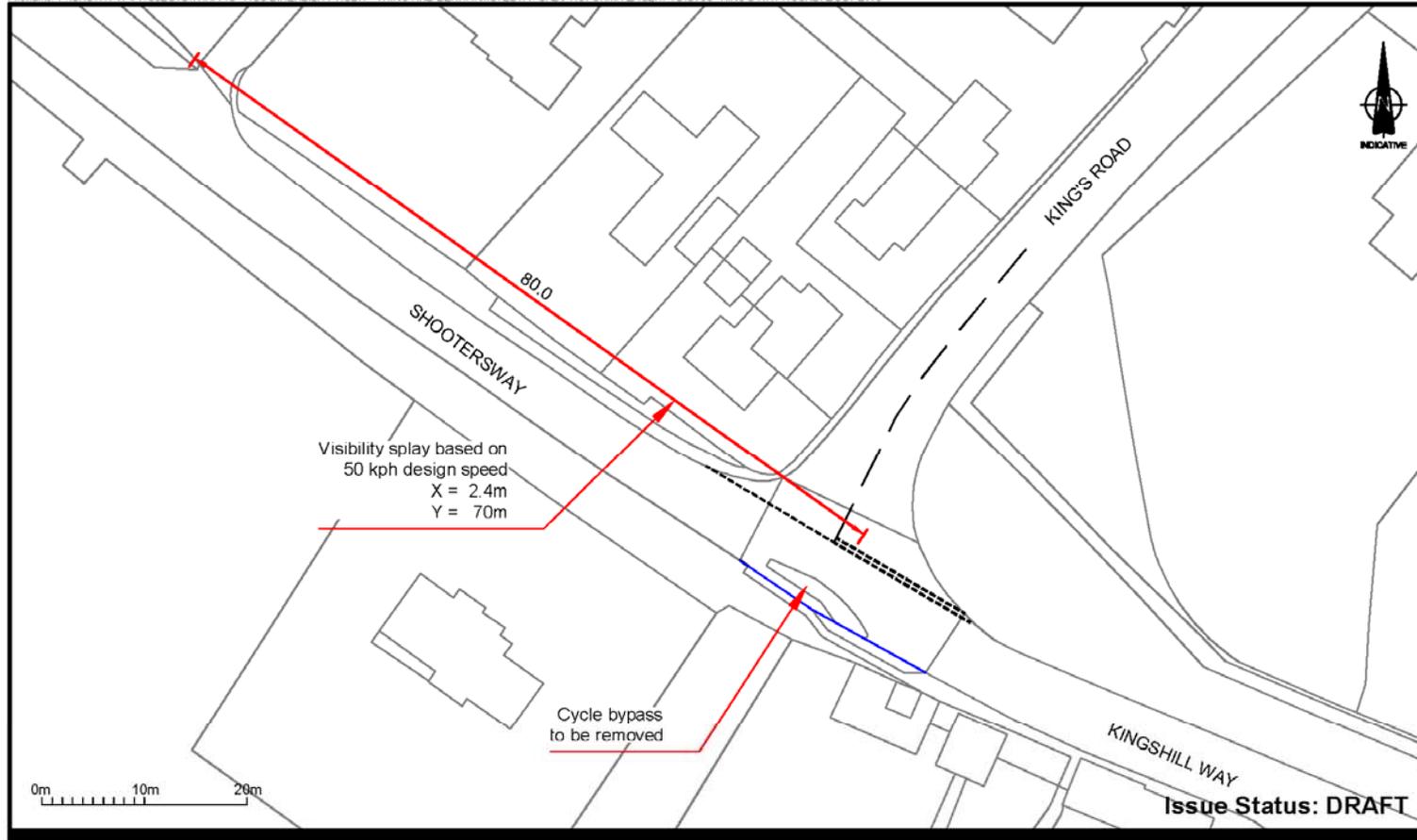
Figure 3

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Figure 5

Tring, Northchurch and Berkhamsted UTP
Scheme Proforma 04



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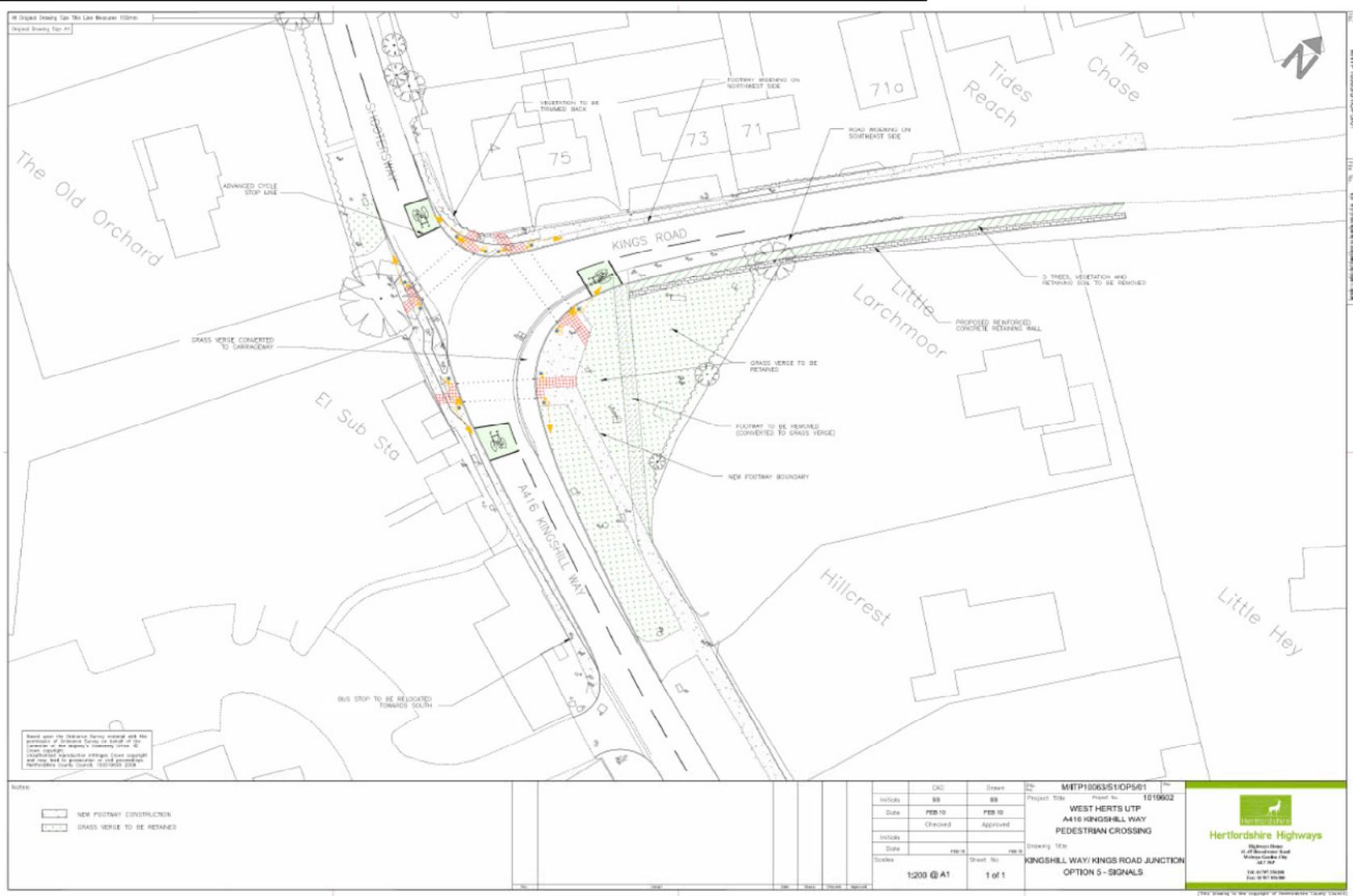


Figure 6 Traffic Signal Junction (extract from 'Stage 1 Feasibility Report – West Hertfordshire Transport Plan')