



TECHNICAL MEMORANDUM

Managing Keynsham's Future Growth

Task 1: K2B Haul Route/Relief Road, Feasibility Study

PREPARED FOR: Nick Simons
COPY TO: David Lear
PROJECT NUMBER: 674726.AI.08.01

This Document has been issued and amended as follows:

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0.0	05/08/16	DRAFT	Alison Foale	David Lear
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1.0 Introduction

The scope for this study was to investigate options for the provision of a temporary haul route/relief road to ease traffic on Park Road and the surrounding area in Keynsham.

The purpose of the haul route is principally to take construction traffic associated with The Meadows development (K2B) off Park Road. The Meadows is a 285 residential development currently under construction and due for completion in 12 to 18 months time.

The relief road serves a wider purpose to reduce the volume of traffic unnecessarily using the town centre or the Federated Estate, particularly accommodating journeys from the southern side of Keynsham out towards the A37, Bristol and the southwest. As the brief is to investigate options only at this stage modelling of the relief road and its potential to encourage traffic onto Park Road has not been undertaken.

2.0 Background

In the Bath and North East Somerset (B&NES) Core Strategy 2,150 new homes are to be built between 2011 and 2029 to support economic growth and Keynsham's growing population. This includes 500+ homes in south west Keynsham known as K2, see **Figure 2-1** Keynsham's Place Making Plan (PMP), which comprises of:

- K2A - Bilbie Green, 267 dwellings, under construction with a single direct access of Charlton Road; and
- K2B - The Meadows, 285 dwellings, under construction with sole access via Park Road.

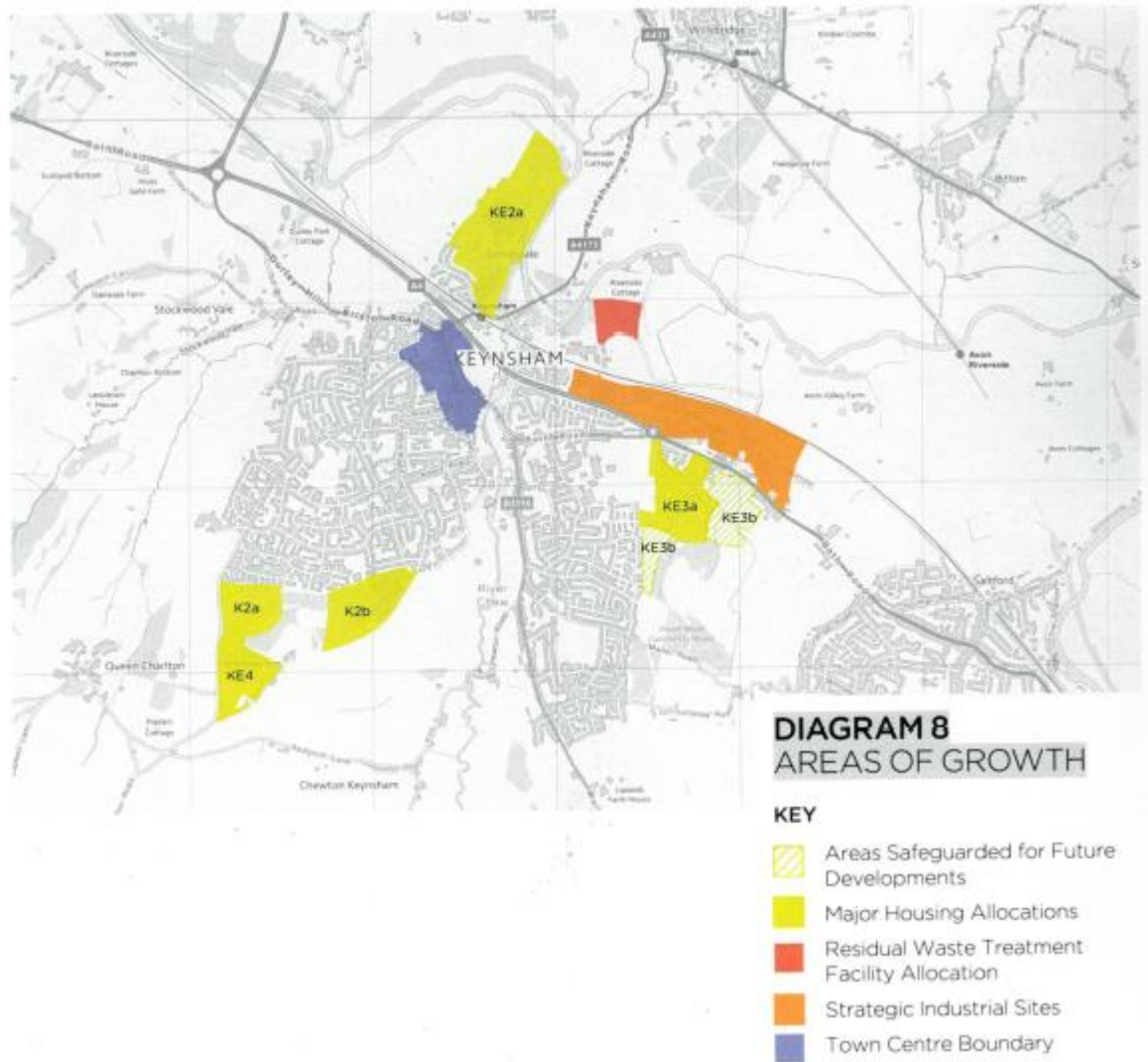


Figure 2-1 Keynsham Place Making Plan (PMP)

In order to meet the need for additional housing, further land is being released from the Green Belt to the south west of Keynsham to accommodate around 200 dwellings known as KE4. This is split into two parcels of land, north and south, both of which take direct access off Charlton Road via simple priority junctions. **Figure 1** in Appendix A illustrates these development areas and their access points off the existing highway network.

Given that the construction of The Meadows (K2B) is likely to be complete in 6 to 12 months there is limited benefit to be gained from the provision of a temporary haul route unless it is completed quickly and on an alignment that could be upgraded to full highway construction for use as a permanent relief road.

A planning application was submitted by the developers of K2B to use the surfaced section of Parkhouse Lane as a one way haul route out to Charlton Road. The application was withdrawn after objections by B&NES Highways Department due to the limited passing opportunities, the high risk of conflicts with vehicles accessing the small number of properties along it and the existing junction with Charlton Road.

The existing Construction Management Plan HGV route for K2B, see **Figure 2-2**, is a one way arrangement due to the existing weight restriction on St Ladoc Road southbound and also a desire to reduce the need for two-way HGV passage in Park Road. Vehicles coming from the A4 enter the site



from Park Road via Bath Road, Bath Hill and Temple Street. On exiting vehicles leave via Dunster Road, Lulworth Road, Coronation Road, Charlton Road, St Ladoc Road and then Bristol Road. In order to achieve entry/exit to a temporary haul road accessed via Charlton Road it would be necessary to agree an alternative entry route either through the town centre (Bath Hill, Temple Street, Rock Road, Ashton Way) or by temporarily removing the weight restriction on St Ladoc Road.

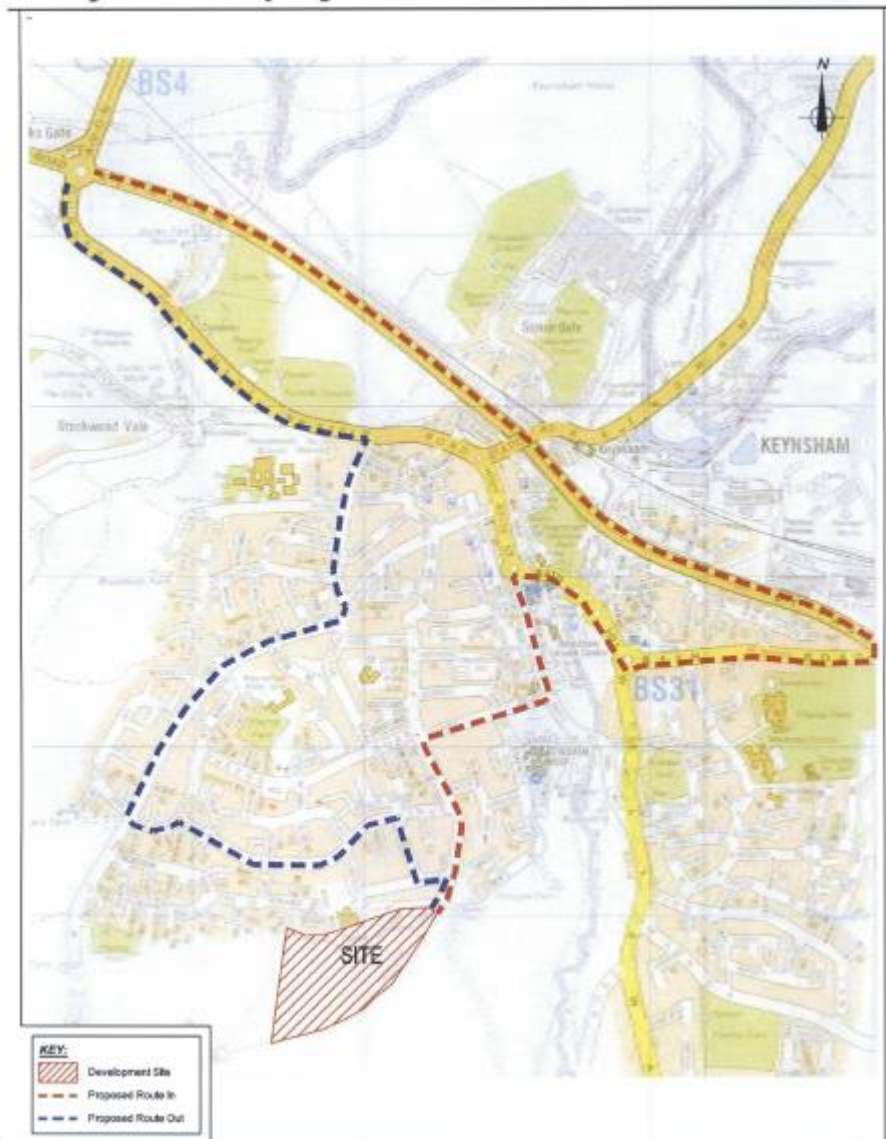


Figure 2-2 Construction Management Plan (CMP)

It is also worth noting that during the planning stages of K2A and K2B the principal of a road link between the two sites through Abbots Wood was considered, however at the time the wood was owned by The Woodland Trust who resisted the proposal. Bath and North East Somerset have now purchased Abbots Wood although the principal of a vehicular link between K2A and K2B which didn't cut through the centre of this important green space cannot be achieved given the advanced stage that both these developments are at in terms of construction and their agreed internal layouts.

3.0 Constraints

The purpose of the haul route/relief road is to relieve Park Road and surrounding roads of construction traffic in the short to medium term and in the longer term to remove traffic from unnecessarily travelling through the town centre. The route would link between Park Road and



TASK 1: K2B HAUL ROUTE/RELIEF ROAD, FEASIBILITY STUDY

Charlton Road following a similar alignment to Parkhouse Lane, an ancient greenway that forms the boundary with the green belt to the south of Keynsham, see **Figure 2** in Appendix A.

On the basis that a temporary haul route needs to be on an alignment which can be upgraded to full two way carriageway construction for use as a relief road, a number of existing constraints have been identified, these include: Parkhouse Lane, K2B The Meadows development; Charlton Road/Parkhouse Lane junction; and the KE4 development. **Figure 2** in Appendix A indicates these constraints.

Parkhouse Lane

Parkhouse Lane forms the southern boundary between the developable areas K2B and KE4 and green belt. It is a sunken ancient greenway bounded on both sides by hedgerows, **Photo 1**. An ecological assessment of Parkhouse Lane as part of the Hedgerow Regulations identified sections of the hedgerow as being 'important' and of ecological significance and therefore unsuitable for use as a link road. Additional vehicular access to the route has been resisted.

On the south side of Parkhouse Lane at its eastern end there are allotments, accessed off Park Road. The potential for an off line corridor to the south of Parkhouse Lane would require access through the allotments.

Access to Parkhouse Lane at its eastern end is via steps from The Mead, the main access road into The Meadows. The route is heavily overgrown (*photo 1*) and falls away from The Meadows development resulting in a significant level difference (*photo 2*). This unmade path extends for approximately 600m along the boundary of the K2B development.

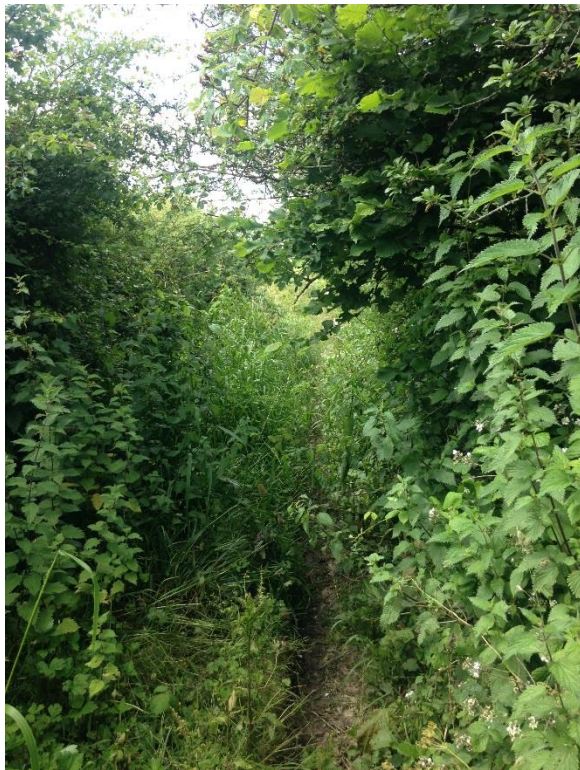


Photo 1: View west along Parkhouse Lane



Photo 2: Level difference between Parkhouse Lane and The Meadows

A 200m section of Parkhouse Lane has been resurfaced from the south western corner of The Meadows westwards, creating a 4.25m wide road which just enables two cars to pass each other. This has been provided to create an emergency access into the development from Charlton Road.



The metalled surface continues to the junction with Charlton Road and also provides access to a number of existing properties on the north side of Parkhouse Lane.

In summary a significant length of Parkhouse Lane is unmade path which improves in condition to the west of K2B, widening to a 4.25m wide metalled road. Further widening of the already metalled section of the corridor would be necessary and a new section of metalled road would be required where a path currently exists to accommodate a two way relief road, impacting on an ecologically significant hedgerow, encroaching into green belt and requiring improvement to its junction with Charlton Road.

K2B 'The Meadows' - Internal highway layout

'The Meadows' development is accessed from the southern end of Park Road, leading directly into The Mead, a 5.5m wide carriageway. The internal road layout of 'The Meadows' has been designed to constrain vehicle speeds using the principles of Manual for Streets, including a tortuous horizontal alignment, buildouts and 4.8m road widths, not suitable as a through route.

An emergency access has been provided from the southwest corner of the site linking into Parkhouse Lane via a 3.7m wide shared footway/cycleway. On completion of the development properties will immediately front onto this footway/cycleway, although vehicular access will be restricted by the provision of bollards at either end. The potential to use this corridor as a two way vehicular link from Parkhouse Lane will involve widening which will not be feasible due to housing frontages and the width of adjoining roads that have not been designed as through routes.

Two other 'gaps' in the development have been identified as potential routes to connect onto Parkhouse Lane, although one has a Local Area Playground on it and the other a large surface water outfall running along its length. However, both are located closer to Park Road, so the length of the internal route through 'The Meadows' used as a necessary part of the relief route would be reduced.

Charlton Road/Parkhouse Lane junction

A temporary haul route/relief road corridor will need to connect into Charlton Road either at, or in the vicinity of, the existing Parkhouse junction, which is a simple priority T junction on the outside of a tight left hand bend. Charlton Road is subject to the national speed limit at this location and there is no footway provision. Visibility from Parkhouse Lane is restricted along Charlton Road to approximately 90m in both directions due to the carriageway alignment and vegetation/hedgerow (*photo 3*). An increase in traffic using this junction will require improvements to visibility from Parkhouse Lane, potentially upgrading the junction to include a ghost right turn lane or a roundabout and revision of the speed limit. This could involve extending the existing 30mph limit from the south side of the Bilbie Green roundabout to incorporate this new access.



Photo 3: View south west along Charlton Road from Parkhouse Lane

No personal injury collisions have been recorded at the junction during the period 01/03/2011 to 29/02/2016 but one loss of control on the southbound approach was recorded in 2011 during the hours of darkness. An increase in turning movements at this junction is likely to increase the risk of collisions, particularly if sufficient visibility to and from Parkhouse Lane cannot be achieved.

KE4

The KE4 development fronts on to Charlton Road and is bounded by Parkhouse Lane to the south and K2A to the north. Planning permission has been granted for 200 units split into two parcels of land, both of which are accessed directly off Charlton Road from priority junctions designed for cul-de-sac layouts. Ransom strips exist between the developments and Parkhouse Lane making a vehicular connection through the sites onto Parkhouse Lane difficult.

Green belt/land ownership

The land to the south of Parkhouse Lane is greenbelt and is owned by a third party and therefore it is out of the control of B&NES.

4.0 Potential Routes

Three options for a potential haul route/relief road have been identified as illustrated in **Figure 3** in Appendix A. Essentially an off line route in a new corridor to the south of Parkhouse Lane, a route which maximises the use of existing/proposed infrastructure and a route which combines elements of the two.

Route A - follows an off line route, parallel and south of Parkhouse Lane passing through the allotments from Park Road and joining Charlton Road at or near the Parkhouse Lane junction.

Route B - runs parallel and south of Parkhouse Lane from its junction with Park Road through the allotments re-joining Parkhouse Lane at the emergency access into K2B, breaching the ancient hedgerow. From the emergency access the metalled section of Parkhouse Lane will be widened to its junction with Charlton Road. This will require the removal of the hedgerow to accommodate the two way road and encroach into the green belt.

Route C - uses The Meadows internal road layout from Park Road linking into Parkhouse Lane potentially via the emergency access. The route then utilises a widened section of Parkhouse Lane



up to the boundary of KE4 where it links through this development to Charlton Road using the internal layout of KE4.

Table 1 summarises the main issues of each route.

Route	Issues
A Off line	<p>The start of the route will impact on the existing allotments off Park Road and a suitable junction will have to be formed with The Mead.</p> <p>The route will be constructed in green belt. The costs associated with the purchase of the land and construction of the route could be prohibitive, unlikely to be quick and the environmental impacts likely to be high.</p> <p>Improvements will be necessary at the Charlton Road/Parkhouse Lane junction to improve visibility/safety. Depending on the volume of traffic using the junction this could involve upgrading the layout to a ghost right turn junction or a roundabout. The current Parkhouse Lane junction will have to be stopped up and access to Parkhouse Lane provided from the off line route.</p> <p>The 30mph speed limit will need to be extended south of the Parkhouse Lane junction.</p> <p>The route and its alignment may encourage traffic movements onto Park Road and into the town centre and modelling of this would be necessary.</p> <p>The timescale for implementing this option is unlikely to enable this route to be used as a temporary haul route but, if it is, the weight restriction on St Ladoc Road (southbound) may have to be temporarily revoked. Park Road will be relieved of construction traffic to the detriment of St Ladoc Road.</p>
B Off line and use of Parkhouse Lane	<p>The start of the route will impact on the existing allotments off Park Road and a suitable junction will have to be formed with The Mead</p> <p>Part of the route will be constructed in green belt. The costs associated with the purchase of the land and construction of the route could be prohibitive, unlikely to be quick and environmental impacts would be high.</p> <p>Parkhouse Lane will need to be widened between the emergency access into The Meadows and Charlton Road, impacting on the 'important' hedgerow and green belt. The acceptability of this option as a temporary haul route or relief road is unlikely given refusal of a previous application for this purpose, the general resistance to increased vehicular use of Parkhouse Lane and its unsuitability.</p> <p>Improvements will be required at the Charlton Road/Parkhouse Lane junction to improve visibility/safety. Depending on the volume of traffic using the junction this could involve upgrading the layout to a ghost right turn junction or a roundabout which could require third party land.</p> <p>The 30mph speed limit will need to be extended to south of the Parkhouse Lane junction.</p> <p>The route may encourage traffic movements onto Park Road and into the town centre and modelling of this would be necessary.</p> <p>The weight restriction on St Ladoc Road (southbound) may have to be temporarily revoked if the route is used as a haul route as there is a 7.5 tonne weight restriction. Park Road will be relieved of construction traffic to the detriment of St Ladoc Road.</p>
C	<p>The alignment and width of the main road through The Meadows is unsuitable as a relief road or haul route and there are no suitable links from The Meadows onto Parkhouse Lane although three potential corridors were considered:</p>



TASK 1: K2B HAUL ROUTE/RELIEF ROAD, FEASIBILITY STUDY

<p>Use of existing infrastructure</p>	<ul style="list-style-type: none"> the 3.7m wide emergency route on the west side of the development. The potential to widen this route to an appropriate width is restricted by housing frontages and the connecting road which is 4.8m wide. a pedestrian link midway through the site between The Mead and Parkhouse Lane . A surface water outfall and channel is located within this corridor and will restrict the available corridor width. Once connected into Parkhouse Lane the route must either use the green belt or substantially upgrade Parkhouse Lane, reducing any benefits from utilising existing road infrastructure in The Meadows and impacting on the ancient greenway. open space at the eastern edge of the site opposite the allotments. This corridor is restricted by a play area and is at the eastern end of the site where there is a significant level difference between The Meadows and Parkhouse Lane. Once connected into Parkhouse Lane the route would have to pass through the allotments and into green belt negating any benefits from using the existing road infrastructure in The Meadows. <p>Parkhouse Lane will need to be widened between the emergency access into The Meadows and the boundary of KE4, impacting on the ancient greenway and green belt.</p> <p>The two accesses off Charlton Road into KE4 are not suitable for use as a relief road or haul route. There is a ransom strip between KE4 and Parkhouse Lane making it difficult for a route through the development to be established and likely to have safety implications.</p>
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Table 1: Route Options

Routes A and B both rely on access from Park Road, through the allotments and a full or partial off line corridor through green belt, both of which have significant cost and environmental implications in terms of land acquisition and carriageway construction.

Route B widens the surfaced section of Parkhouse Lane which could potentially address previous concerns over limited passing opportunities and the junction with Charlton Road. However the loss of the hedgerow and trees flanking the south side of the lane are likely to be objected to.

Route C utilises existing infrastructure in The Meadows and KE4 which will be very difficult to achieve given the fundamental differences in design criteria used for the internal layout of these residential developments and what effectively will be a two way local distributor road or relief road.

During the planning stages of K2A and K2B the principal of a road link between the two sites through Abbots Wood was considered. However, at the time it was owned by The Woodland Trust who resisted the proposal. Bath and North East Somerset have now purchased the woods however the internal layouts of K2A and K2B make this concept unfeasible.

5.0 Conclusions

It is considered that the only viable opportunity to develop a temporary haul route serving the K2B site is restricted to Option A, an off-line option through green belt land to the south of Parkhouse Lane. In terms of timescale the use of the K2B emergency access and a shortened section of temporary carriageway through green belt has the greatest prospect of being implemented while construction traffic is still accessing K2B. This could be used to service a storage compound/delivery area in the south-west corner of the site. A temporary connection point into the K2B land further east would impact on the allotments, creating further issues in seeking to get a haul route in place quickly. Connection of the haul route into Charlton Road will require improvements to the existing Parkhouse Lane/Charlton Road junction, or the construction of a new temporary junction.



With respect to a permanent relief road, Option A, a full off-line route south of Parkhouse Lane is again the most viable option. It is suggested the permanent junction arrangement with Charlton Road may best be a small roundabout, so serving to reduce approach speeds on Charlton Road. This would also allow the 30mph limit zone to be extended to the south. The new junction configuration is likely to require closure of Parkhouse Lane at its western end, with vehicular access to the lane maintained via an access onto the new relief road.

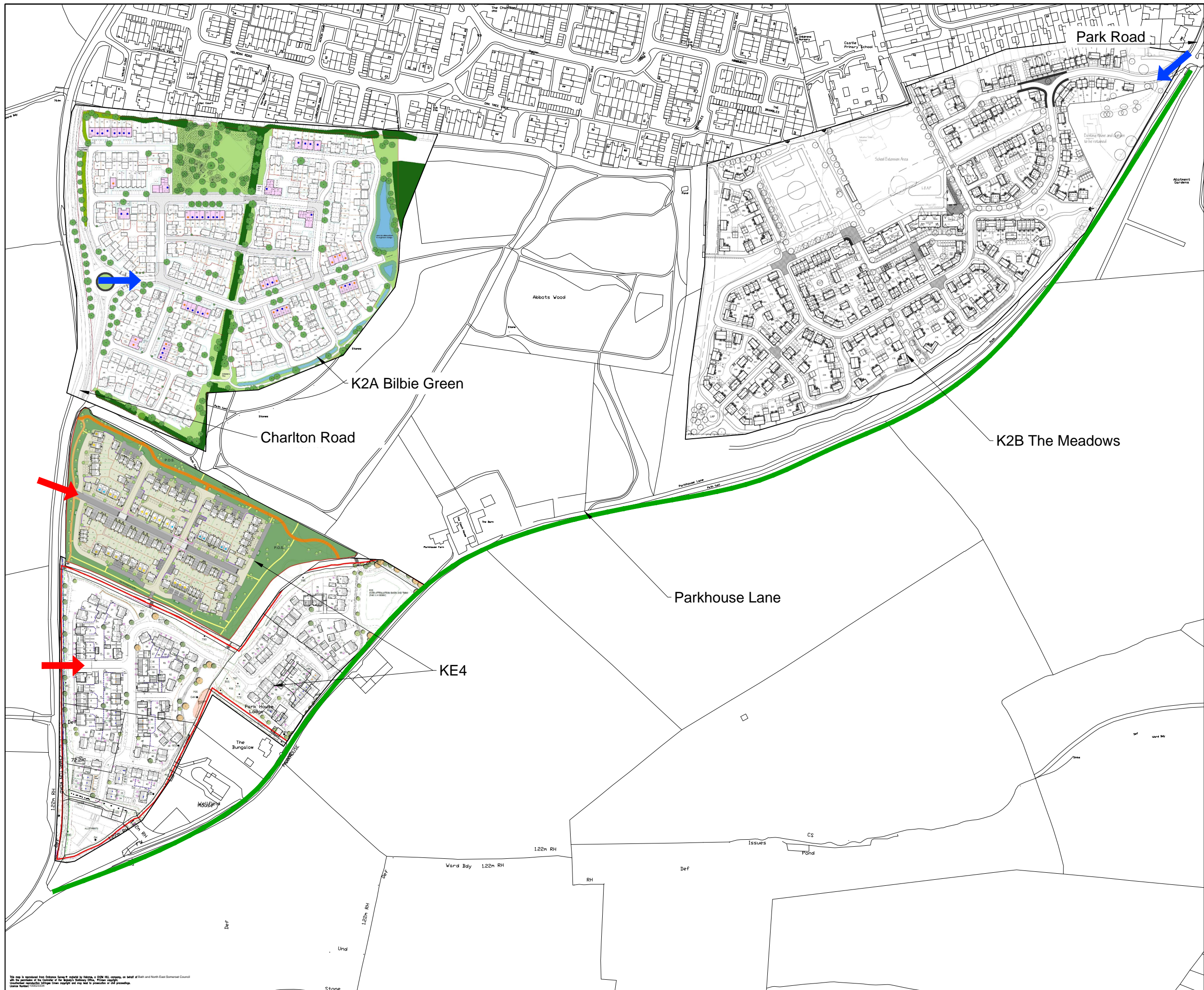
Whilst the study concludes that Option A is the most viable option there is currently no planning requirement or obligation for the developer of K2A, K2B or KE4 to provide a haul or link road. In addition, Bath and North East Somerset Council currently has no budget identified for such a scheme and as such there is currently no proposal to take this forward.

The use of existing infrastructure in K2B and KE4 to service any part of a permanent relief route is severely restricted by the internal layout of these developments and, in the case of KE4, by the simple major-minor 'priority' junction form of the agreed accesses onto Charlton Road. These agreed accesses have been designed to serve the traffic accessing these sites only and not additional traffic that would use them as a result of a permanent relief road. There is also no requirement on the developer to improve this now they have permission for a basic T junction.

By moving K2B construction traffic access/egress to Charlton Road, HGVs are likely to need to use St Ladoc Road in both directions to get from/to the A4 via the A4175 Bristol Road. This would require the temporary suspension of the 7.5T weight restriction southbound on St Ladoc Road. In the absence of this the current access route via the B3116 Bath Road/Bath Hill/Temple Street would have to be altered to direct HGV's along Ashton Way to get to Charlton Road. This is not ideal as the left turn from Ashton Way to Charlton Road is too tight and may result in HGVs mounting the kerb in order to get round, whilst the section of Charlton Road between this junction and the St Ladoc Road junction has restricted width and narrow footways and is the subject of safety concerns. It is noted that current construction access to Bilbie Green (K2A) would have similar routing constraints from the A4, so it is suggested that the current Construction Management Plan (CMP) for K2B would need to be amended to reflect the same provisions agreed for K2A.



Appendix A: Figures



- Legend
- Proposed Vehicular Access
 - Vehicular Access

Rev	By	Chkd	Appnd	Date	Description
Client					
Bath & North East Somerset Council					
CH2M Burderop Park Swindon Wiltshire SN4 0GD Tel +44 (0)1793 812479 Fax +44 (0)1793 812089 www.CH2M.com					
Project					
Keynsham - Relief Road					
Drawing					
Figure 1 Committed Development					
Drawn by: SM Date: 08/07/2016					
Checked by: AF Date: 14/07/2016					
Approved by: AF Date: 14/07/2016					
Drawing No.					
674726.AI.08.01-RR-Fig1					
Revision					
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Drawing Scale: NTS					

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Drawing file path & name
X-reference file path
User and Plot Data



Legend



Ancient Greenway

Green belt

Rev	By	Chkd	Apprvd	Date	Description
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Client

**Bath & North East
Somerset Council**

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Project

Keynsham - Relief Road

Draw

Figure 2
Constraints

Drawn by: SM Date: 08/07/2016

Checked by : AF Date : 14/07/2016

Approved by : AF Date : 14/07/2016

Drawing No.	Revision
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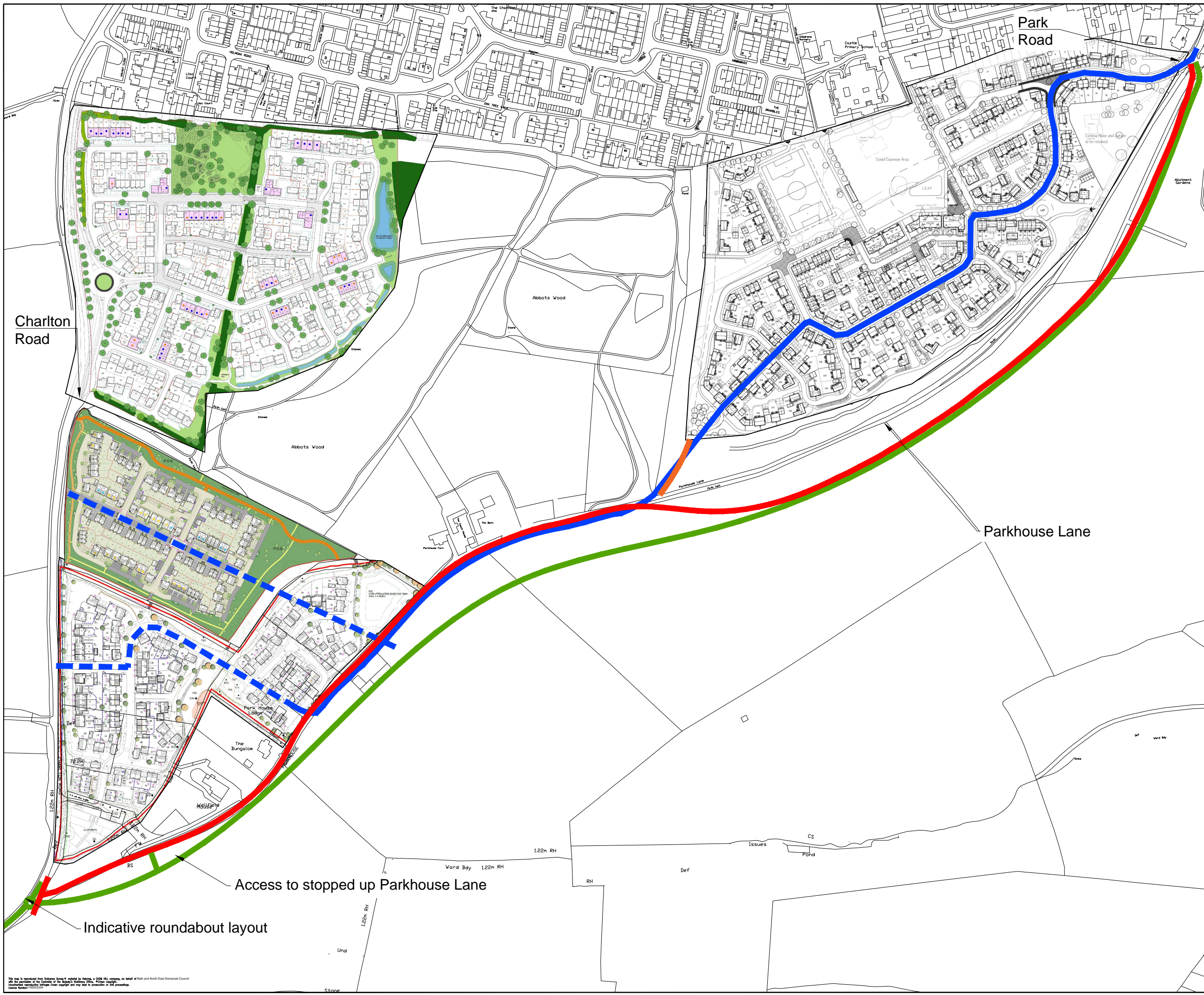
674726 AL 08 01 RD Fig 2 --

674726.AI.08.01-RR-FlgZ --

Drawing Scale: NTC

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Drawing file path & name :	
Xreference file path :	



- Notes
- 1. Route A joins Charlton Road at its western end with a new junction, which is indicatively shown on this drawing as a roundabout.
 - 2. Route B joins Charlton Road at the existing junction with Parkhouse Lane.
 - 3. Routes A and B join Park Road at a simple priority junction, which is indicatively shown on this drawing.

Legend

- Route A
- Route B
- Route C
- Route C Variant

Rev	By	Chkd	Appvd	Date	Description
Client					
CH2M Burderop Park Swindon Wiltshire SN4 0GD Tel +44 (0)1793 812479 Fax +44 (0)1793 812089 www.CH2M.com					
Project					
Keynsham - Relief Road					
Drawing					
Figure 3 Route Options					
Drawn by: SM Date: 08/07/2016					
Checked by: AF Date: 14/07/2016					
Approved by: AF Date: 14/07/2016					
Drawing No.					Revision
674726.AI.08.01-RR-Fig3					--
Drawing Scale: NTS					

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