



**Knaresborough
Renaissance Market Town
Initiative**

High Street Environmental
Improvement Study
Final Report

March 2005

Knarborough Renaissance Market Town Initiative

Knarborough High Street

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1. Introduction

- 1.1 Atkins has been commissioned to develop two draft conceptual designs for improving the quality and amenity of the public environment on High Street, Knaresborough. The study covers the High Street between its junctions with Gracious Street and Bond End.
- 1.2 The designs have been produced in order to inform the transport and access dimensions of Yorkshire Forward's Vision for the High Street.
- 1.3 The methodology adopted for this short and intensive study has focussed on the need to not only consult the relevant stakeholders, but also to pursue direct design input from them. It is hoped that through this process the schemes presented in this report are aligned with both the local transport and land use policy and with the aspirations of the Knaresborough community.
- 1.4 The report is structured so as to first describe the fact-finding and consultation exercises undertaken to inform the design process, then to discuss the principles and rationale underpinning the development of the two scheme options. The report closes with a summary of the main points of the study and some recommendations for future development of the scheme.

2. Consultation

2.1 The consultation and information gathering stage comprised the following elements:

- ◆ Review of Existing Material;
- ◆ Discussion with North Yorkshire County Council (NYCC);
- ◆ Meeting with Harrogate Borough Council (HBC);
- ◆ Site Visits;
- ◆ High Street Walkabout with Project Champions; and
- ◆ Town Team Meeting.

REVIEW OF EXISTING MATERIAL

- 2.2 The first exercise of the study was to review existing material relating to previous consultation work. The primary source of this information was Atkins' Knaresborough Renaissance Market Town Initiative Transport Issues Report.
- 2.3 The Transport Issues document provides an overview of existing transport problems and issues within the Knaresborough Renaissance Market Town (RMT) Initiative study area. It collates views and information from a variety of sources including the Knaresborough RMT Town Team, Transport Theme Group and Public Consultation, as well as the broader Harrogate and Knaresborough Integrated Transport Strategy.
- 2.4 In each case the need to improve conditions on High Street is seen as a pertinent problem by consultees.
- 2.5 The High Street was identified as the key location affected by traffic congestion and delay. This view is further supported by the perception that the focus of the High Street is solely for motor vehicles with little priority given to pedestrians and shoppers.

NYCC & HBC

- 2.6 Initial discussions with Graham Cressy (NYCC) and Elwyn Williams (NYCC) established that the County Council were keen to be kept informed with the progress of the study. It was also indicated that Chris McGonigle (HBC) would be well placed to contribute, as the Principal Engineer at the local highway authority.
- 2.7 It was stressed that any proposals should adhere to NYCC's transport hierarchy, prioritising the needs of pedestrians over cycles, public transport and then private vehicles.
- 2.8 For pedestrians it was suggested that consideration be given to pavement widening and increasing the number of crossing points, giving due consideration to existing desire lines.

- 2.9 Also, it was advised that providing alternative routes for cyclists might be preferable to attempting to accommodate a formal cycle lane within the tight confines of the High Street.
- 2.10 With regard to public transport, NYCC asked that means of improving connectivity between the bus and rail stations be investigated.
- 2.11 For general traffic, non-vertical traffic calming and the creation of new crossing facilities were seen as acceptable methods for reducing traffic speeds on High Street. On that basis, there is potential for the creation of a 20mph zone.
- 2.12 Also, there were no objections to proposals for reducing or relocating on-street parking on High Street, but it was stressed that careful consideration would have to be given to relocation of any loading areas.
- 2.13 NYCC/HBC's view on the one-way system proposal was that if it is to be progressed there are some serious technical obstacles that would have to be addressed. Furthermore, should the proposal make it through to implementation, it would be preferable to do so on an experimental basis.

SITE VISITS & HIGH STREET WALKABOUT

- 2.14 A total of three site visits were undertaken to view the operation of the High Street at different times of day and under varying traffic conditions. An inventory of photographs and site notes was created to inform the development of the base case drawings
- 2.15 Atkins staff met two of the Project Champions, Peter Guest and Andrew Willoughby on the High Street to discuss some of the detail issues. Also, prior to this site meeting, Peter, Andrew and June Cook supplied a number of e-mails describing their views on the High Street.
- 2.16 The problems, issues and considerations identified through these processes are listed below. It contains a number of issues that are beyond the remit of this focussed study, but which have been included because of their relevance to the environmental conditions on High Street.

Traffic volume

- Reduce capacity on High Street, prompting rerouting away from Knaresborough
- Reclassification of strategic roads
- One-Way system
- Sign HGVs to alternate routes

Lack of public space (for pedestrians in particular)

- Increase footway widths
- One-Way system

Speed/proximity of traffic

- Introduce 20mph zone
- Narrow carriageway, traffic calming

Connectivity between peripheral car parks and town centre

- York Place - improve crossing facilities at Gracious Street / York Place cross roads

On-Street Parking

- Remove High Street parking bays

Loading

- Move/provide extra loading areas
- Impose time restrictions on loading activities

Poor utilisation of peripheral long-stay car parks

- Alter maximum length of stay restrictions in Town Centre
- Extend Park & Ride system

Lack of crossing opportunities

- Narrow carriageway
- Provide additional crossing facilities
- Build-outs, speed tables

Location and design of bus station

- Relocate the bus station
- Redesign bus station for improved pedestrian safety and segregation

Crossing of adjoining roads

- Raised junction treatments
- Wider footways giving better visibility

Lack of signing (for car parks and pedestrians)

- Introduce parking signing for visitors on entry to Knaresborough
- Develop pedestrian signing regime for Town Centre

Poor maintenance

- General maintenance issues throughout High Street

TOWN TEAM MEETING

- 2.17 Atkins staff attended an evening meeting of the Town Team in Knaresborough, in order to present the initial findings of the above data gathering exercises and to get some feedback on the initial concepts being considered.
- 2.18 The feedback on the initial designs seemed quite positive. Generally, the presentation of a tangible scheme to replace the previously vague notional ideas with something more concrete was a successful exercise.
- 2.19 The Town Team seemed interested by the possibilities presented by the large amount of public space reclaimed from the highway. They were generally receptive to the proposals to change the atmosphere within the High Street to a pedestrian friendly one, at the expense of traffic.

- 2.20 However, there appeared to be some difficulty in visualising a High Street that has been given back to the pedestrian, where the road traffic is made to feel like the minority user.
- 2.21 Rather than generating feedback on the desirable and undesirable detail aspects of the design, the presentation prompted much discussion about the relative merits of the one and two way schemes.
- 2.22 Despite the Town Team recognising the extra amenity (on the High Street) presented by the one way option, it was clear that there are some deep misgivings surrounding such proposals. Amongst others, there were concerns regarding the operation of the junctions at both ends of High Street and the potential for shifting the problems on High Street to the surrounding residential areas.
- 2.23 The main outcome of the meeting was perhaps that the possibilities and opportunities for environmental improvement within the constraints of High Street were conveyed to the Town Team. An appreciation of these will allow the Town Team to continuously feed into the design process as the High Street improvement gets closer to reality.
- 2.24 Although Town Team members were invited to provide feedback on the designs in the week following the meeting, no comments were received. As such, only the reactions recorded at the meeting were fed into the remaining design work.

3. Option Development

- 3.1 As described previously, the brief requested that two schemes be considered, a one way and a two way option.
- 3.2 The overarching principles underpinning the majority of the design work were:
- ◆ Remediation of the specific issues identified through consultation and site work;
 - ◆ Prioritisation of pedestrians over vehicular traffic; and
 - ◆ Reclamation of highway for use as public space and footway.
- 3.3 At this stage of development, it has been decided that the current levels of provision for on-street parking and loading should be maintained. There is clearly great scope for altering the current facilities, but it is considered that there are several external factors that may dictate or affect the final design in this respect. As such, future assessment of the parking and loading needs on the High Street should be fed into the detailed design process.
- 3.4 Whilst some elements of the toolkit of measures developed for the High Street schemes are specific to the one or the two way scheme, there are a number of generic instruments which are equally applicable to either.

GENERIC

- 3.5 Features that are common to both schemes include:

Gateways

- 3.6 In order to highlight to traffic the transition from open highway to the pedestrian prioritised High Street zone, Gateways will be created at either end of the commercial frontage of the High Street.
- 3.7 These Gateways clearly define the point beyond which traffic will be expected to behave in a manner more considerate to pedestrians and cyclists. One is to be situated close to the Gracious Street / York Place junction, the other in the vicinity of Vicarage Lane.
- 3.8 The exact format of these Gateways is an issue for the Town Team to address, but the opportunity is often taken to create a 'feature', such as in Bury St. Edmunds, below:



Diagonal Crossing at Gracious Street / York Place Junction

- 3.9 There were concerns from the Project Champions that connectivity between the Town Centre and the York Place car park is impeded by the need to cross two arms of the junction, and hence wait for two separate signal stages.
- 3.10 It is proposed that a diagonal crossing be installed, facilitating crossing between all quadrants of the junction in one movement. This would be additional to, rather than instead of, the existing pedestrian crossing facilities.
- 3.11 Since the current pedestrian phase occurs during an all-red phase for traffic, additional delay to traffic would be limited to one or two seconds per cycle. The photograph below demonstrates how a diagonal crossing in Balham, London has improved the ease and safety of crossing on a six arm junction.



Junction Treatments

- 3.12 By changing the surfacing material, and possibly raising the surface of the carriageway to the kerb level, it is possible to highlight the additional hazards and obstacles associated with the adjoining of tributary roads.
- 3.13 The adjoining roads along the south side of High Street carry relatively high levels of pedestrian traffic from the Market Place to High Street. As such, desire lines across High Street are established at these locations that cannot be accommodated by formalised crossing facilities.
- 3.14 The junction treatments, with the help of the narrowed carriageway and build outs, will help provide informal crossing points for pedestrians, and also impose some traffic calming influence on traffic.



20mph Zone

- 3.15 The introduction of a 20mph speed limit has been shown in other towns to have a significant effect on vehicle speeds and pedestrian casualty rates. A Transport Research Laboratory study of two hundred and fifty 20mph zones in 1996 found that:
- ◆ Average speeds had fallen by nine mile per hour;
 - ◆ The annual total of accidents had fallen by 60%;
 - ◆ The number of accidents involving children had fallen by 67%; and
 - ◆ The number of accidents involving cyclists had fallen by 29%.
- 3.16 Clearly, these results can only be expected for a well executed scheme where the enforcement of the speed limit is backed up by other speed reduction methods, as would be the case for the High Street.

Road Narrowing

- 3.17 Reducing the available space for drivers has the effect of lowering the speed at which motorists feel safe to drive. This approach is key to the redesignation of High Street from a main road to a pedestrian focussed street, though sufficient road width has been maintained to allow two large vehicles to pass safely.
- 3.18 Road narrowing has the additional benefit of increasing the amount of public space available for footways and landscaping, presenting significant opportunities for improving the environmental conditions on High Street.

- 3.19 Furthermore, the reduced crossing distances and vehicle speeds provide a much safer environment for crossing High Street without using the formal crossing facilities.



Parking & Loading Arrangements

- 3.20 The reduced carriageway widths also provide the potential for reviewing the provision of loading and parking bays on High Street. Whilst the streetscape can be improved by total removal of such bays, there is a clear need to maintain service to the shops on High Street.
- 3.21 It might be possible to remove a number of the parking bays, or to impose alternative waiting restrictions on them. Similarly, if time restrictions were imposed on the deliveries to the shops it might be possible to avoid the substantial delays suffered by peak hour traffic during HGV manoeuvres.

SCHEME 1 - TWO WAY OPTION

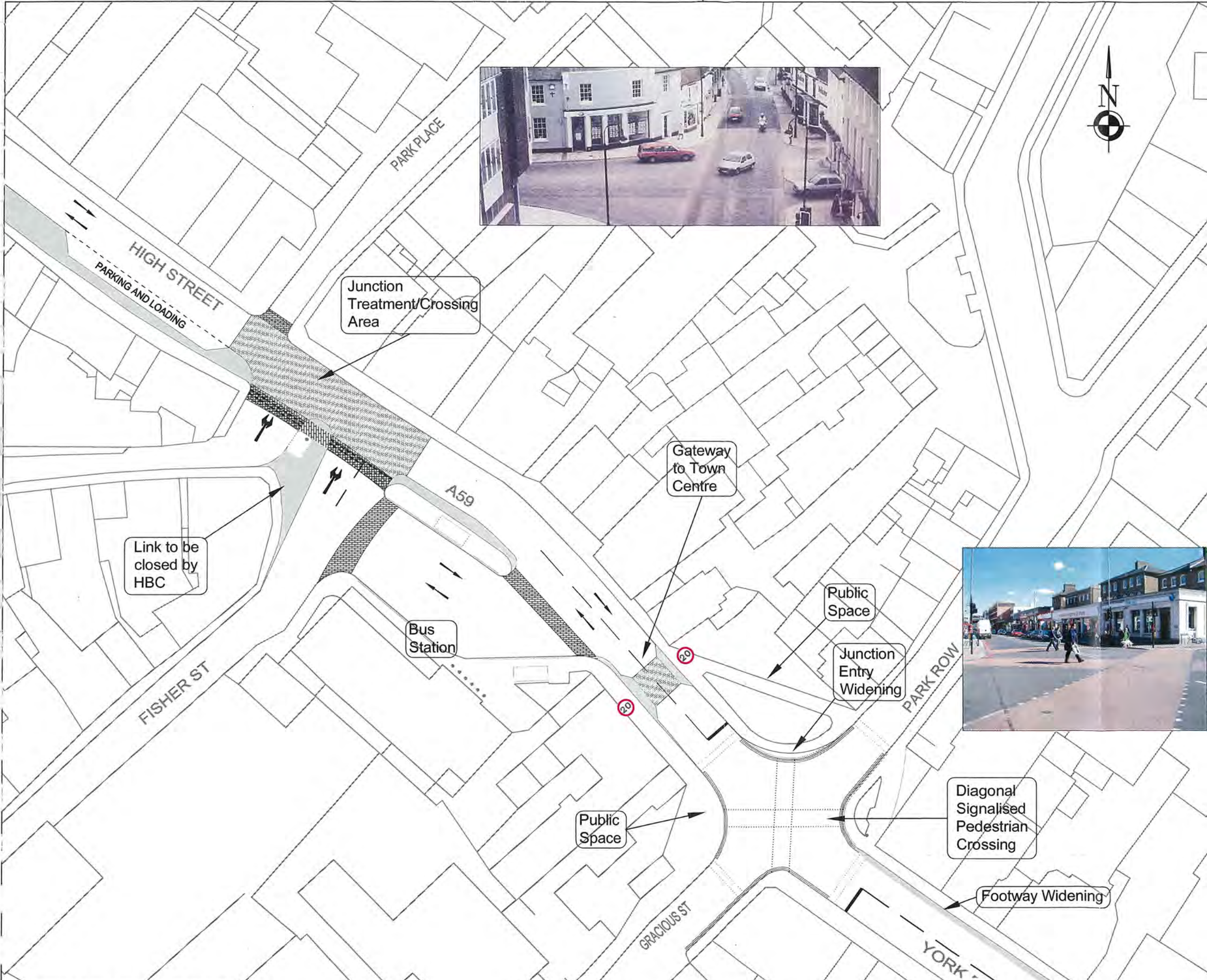
- 3.22 The basic principle behind this option is the creation of a 5.5m strip of carriageway along High Street, the minimum permissible under current design standards for safe and efficient traffic flow.
- 3.23 The 5.5m carriageway would also allow for safe passage of cycles, and the provision of kerbside loading and parking bays would provide sufficient space for dealing with emergency situations.
- 3.24 The 5.5m carriageway provides an additional 3m to 4m of footway width between Fisher Street and Finkle Street, on the wider parts of High Street.
- 3.25 The two pedestrian crossings on High Street will remain as part of Scheme 1. No additional formal facilities are required as informal crossing will be much safer with the reduced carriageway width and traffic speeds resulting from the scheme.
- 3.26 Figures 1a to 1d show the Scheme 1 proposals, 'a' being the south eastern end of High Street (Gracious Street junction) 'd' being the north western end (Bond End).

Notes:

1. Scale 1:500

Key:

-  Reclaimed Pathway
-  Junction Treatment



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Client
 Yorkshire Forward

Project
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 Knaresborough

Title
 Scheme 1
 Two-Way Enhancement Option
 Figure 1A



| Original Scale | Drawn | Checked | Authorised |
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Junction Treatment/Crossing Area

Junction Treatment/Crossing Area

Junction Treatment/Crossing Area

Pelican Crossing



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Title
 Scheme 1
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 Figure 1B

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 Knaresborough

Title: Scheme 1
 Two-Way Enhancement Option
 Figure 1C



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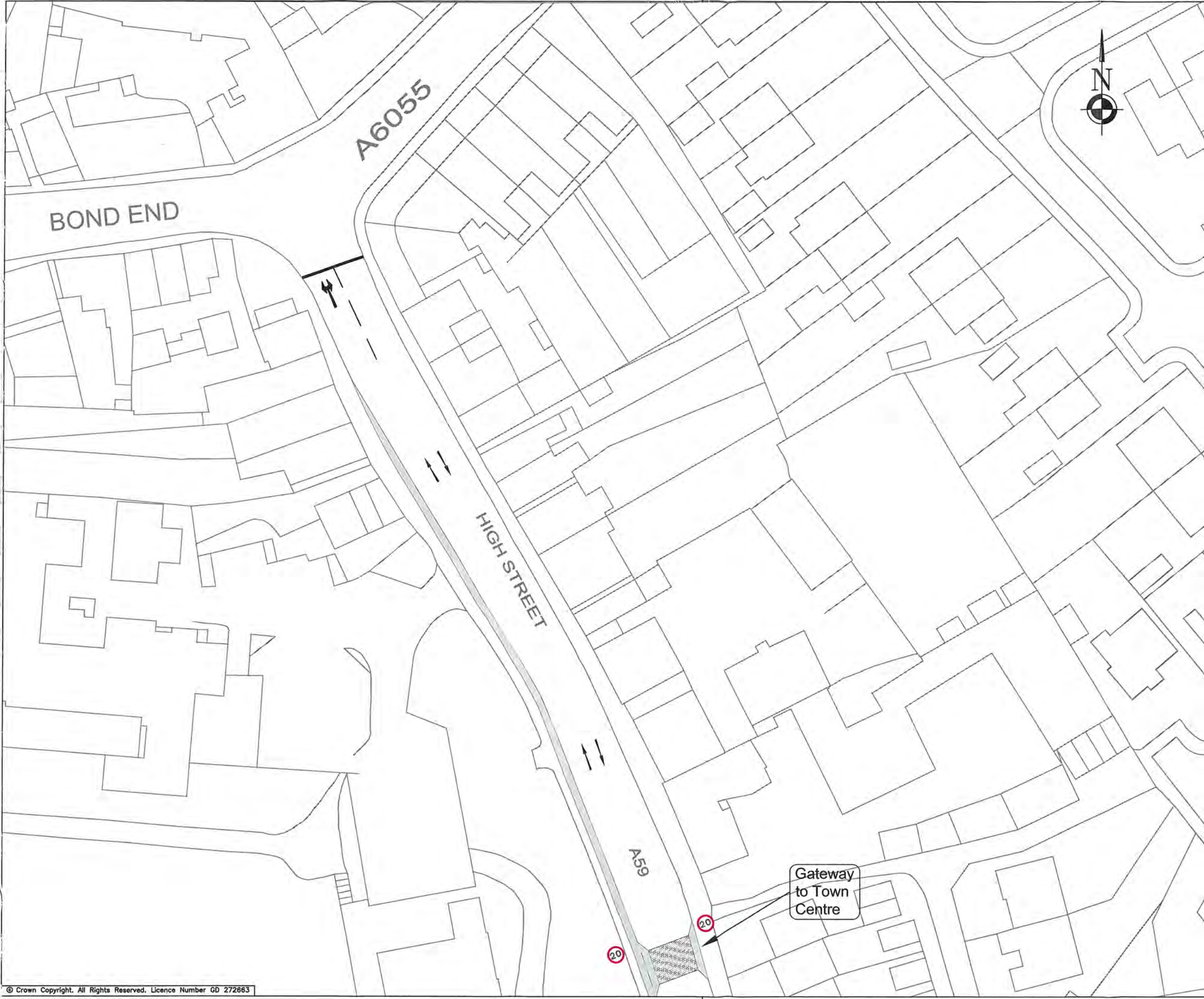
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Title
 Scheme 1
 Two-Way Enhancement Option
 Figure 1D

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SCHEME 2 – ONE WAY OPTION

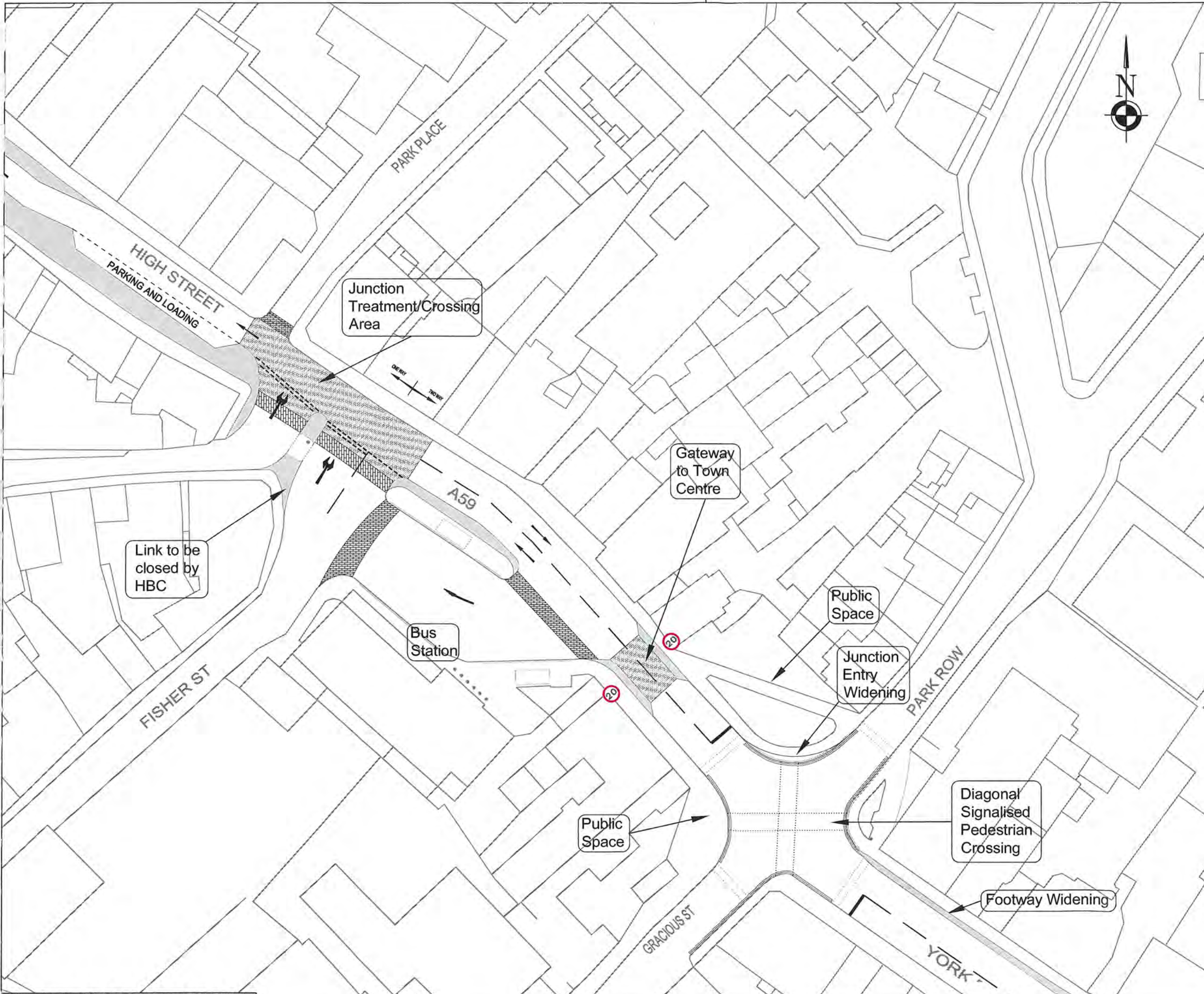
- 3.27 The one way option retains two way operation between the York Place / Gracious Street junction and Silver Street, to accommodate the existing operation of Fisher Street and the bus station.
- 3.28 Instead of a two way, 5.5m carriageway, the one way option creates a 4m wide strip on High Street, providing an additional 1.5m of footway over and above the 3m to 4m that would be reclaimed in the two way scheme.
- 3.29 This very narrow carriageway allows for the existing formal crossing facilities to be removed altogether, tidying up the street scene. With a 4m crossing distance and low traffic speeds, crossing at any location would be safe and easy.
- 3.30 Figures 2a to 2d show the Scheme 2 proposals.

Notes:

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Key:

-  Reclaimed Pathway
-  Junction Treatment



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Title: Scheme 2
One-Way Enhancement Option
Figure 2A


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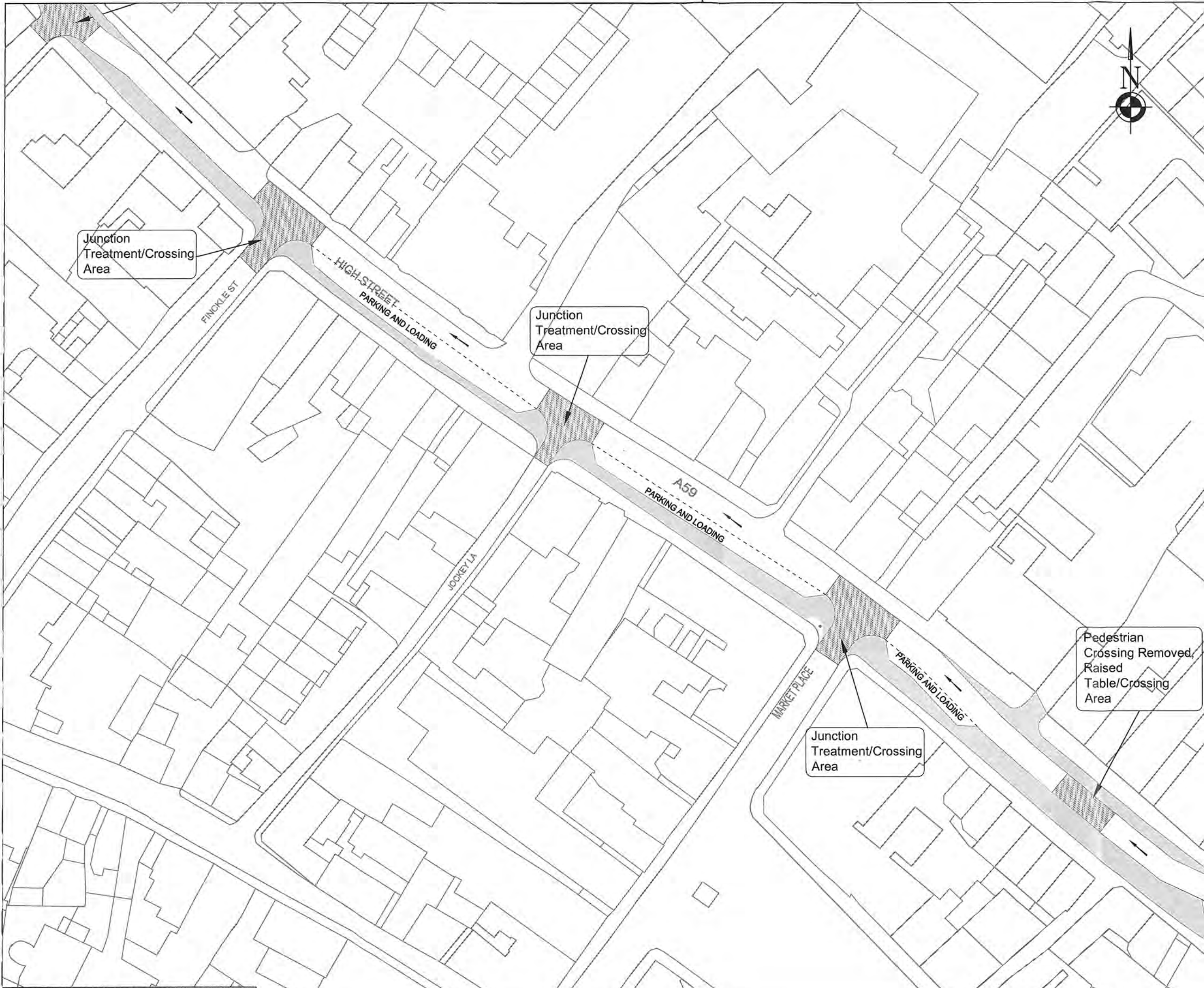
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Title
Scheme 2
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Figure 2B



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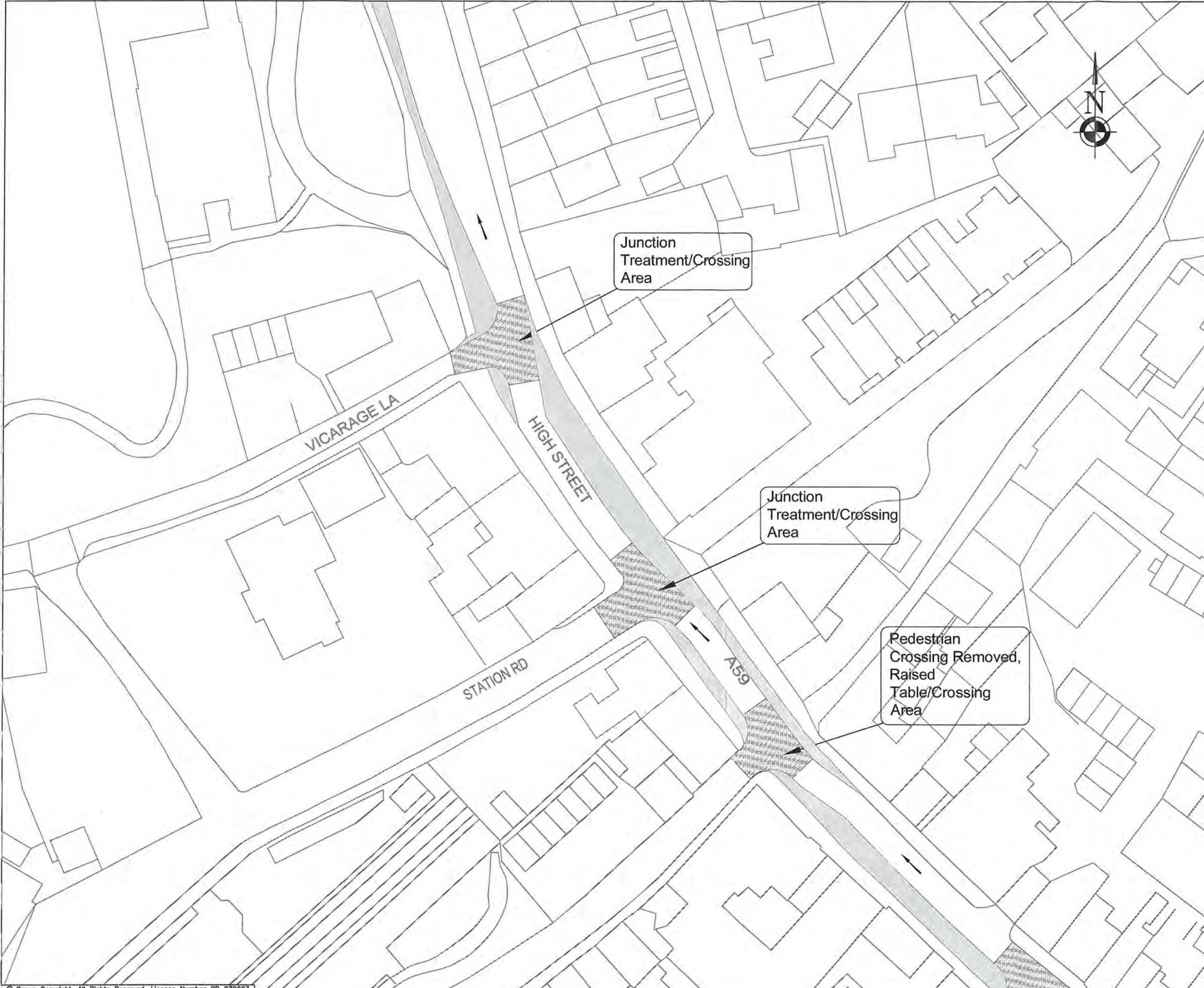
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Title: Scheme 2
 One-Way Enhancement Option
 Figure 2C



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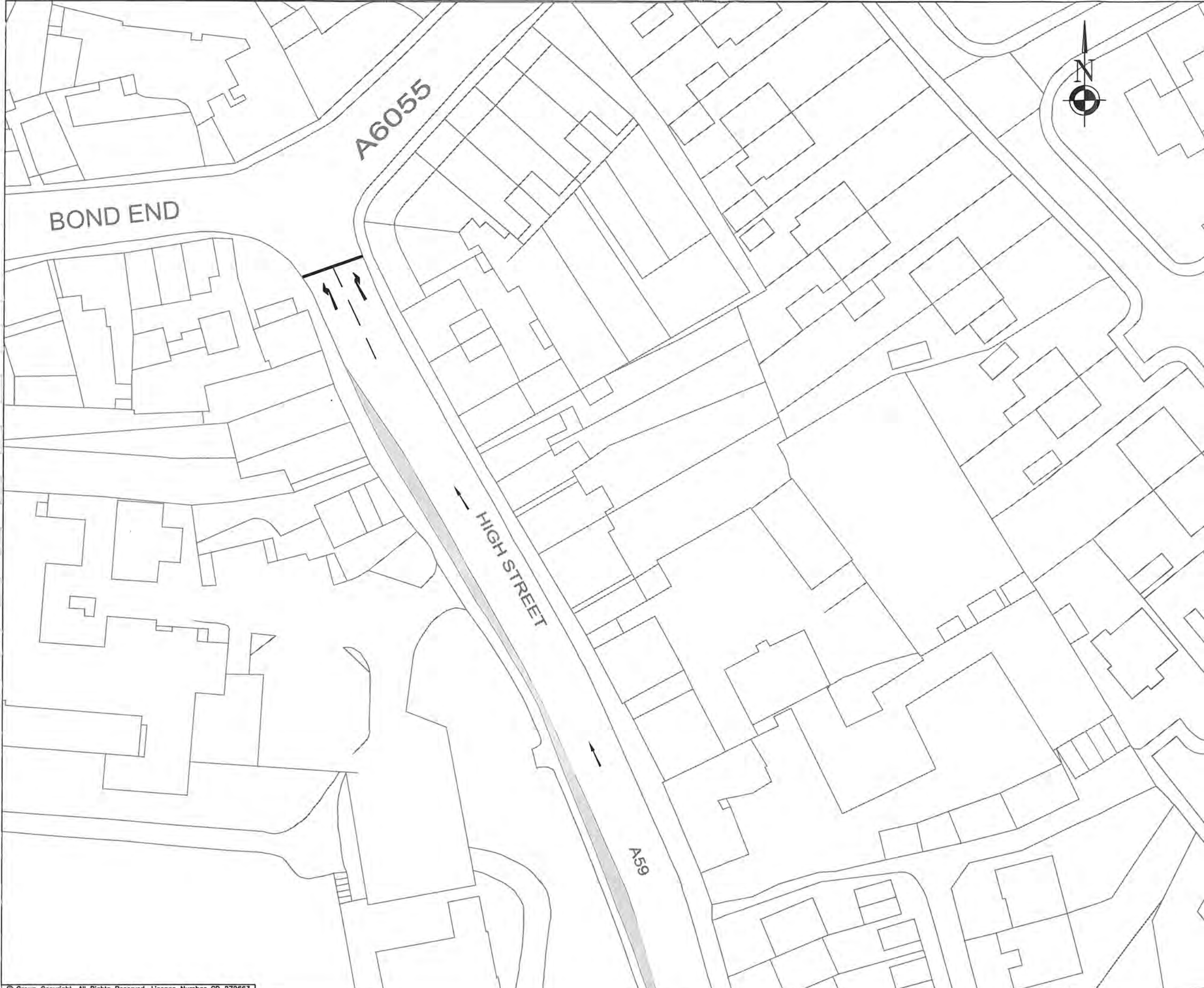
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Title
Scheme 2
One-Way Enhancement Option
Figure 2D

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4. Option Appraisal

- 4.1 The aim of this chapter is to provide an assessment of the relative merits of the two proposed schemes.
- 4.2 Clearly, the two schemes are closely related in concept, but vary significantly in terms of the opportunities they present for environmental improvement and the technicalities of their relative construction.
- 4.3 The table below summarises the assessment of the two schemes against a number of key performance criteria:

| | Scheme 1 Two Way | Scheme 2 One Way |
|-------------------------|---|-----------------------------|
| Pedestrians | Moderate Beneficial | Moderate / Large Beneficial |
| | Both schemes improve conditions for pedestrians in terms of safety, quality of environment and proximity to traffic. Scheme 2 presents a slightly larger improvement due to the increased footway widths and reduced crossing widths. | |
| Cycles | Moderate Beneficial | Neutral / Slight Adverse |
| | Scheme 1 improves the situation for cyclists by clearing up the streetscape and improving visibility from adjoining roads. Scheme 2, whilst providing a substantially improved cycling environment on High Street, would impose distance/time penalties on cyclists when travelling along the opposite section of the gyratory system.. | |
| Public Transport | Neutral | Moderate Adverse |
| | The operation of Public Transport will remain unaffected by Scheme 1, but the one way scheme imposes additional mileage and time penalties onto the bus services by routing them away from High Street, and also makes them U-turn at the bus station. | |
| Safety | Moderate Beneficial | Moderate beneficial |
| | Pedestrian and cycle casualties can be expected to be reduced with the implementation of either scheme. | |
| Severance | Moderate Beneficial | Moderate beneficial |
| | Both schemes would be anticipated to improve connectivity between the Town Centre and the north side of High Street. | |
| Noise/Fumes | Slight Beneficial | Moderate Beneficial |
| | Whilst both schemes would reduce the impact of noise and fumes on pedestrians (by distancing traffic from the carriageway) the one way operation of High Street would effectively halve the volume of traffic creating noise and fumes. | |
| Streetscape | Moderate Beneficial | Large Beneficial |
| | Scheme 2 presents more space for landscaping, public art etc, though both options would improve considerably on the current situation. | |
| Traffic Impact | Neutral / Slight Adverse | Moderate / Large Adverse |
| | Scheme 1 has been designed so that current capacity of High Street is maintained at current levels. As such, there would be no impact on traffic, other than a minute increase in journey times associated with the lowered speeds. Scheme 2 could be expected to have significant impacts on the operation of the highway network. | |
| Cost | £500,000 - £1,000,000 | |
| | Cost is similar for both schemes, and depends on materials selected, statutory undertakings and extent of street furniture / landscaping – see following text. | |

Table 4.1 – Scheme Assessment Summary Table

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- 4.4 Below is listed the inclusions and exclusions from the cost estimates presented in Table 4.1. Included in the estimate are:
- ◆ Full surface reconstruction;
 - ◆ 9 individual junction treatments;
 - ◆ Signalised junction remodelling;
 - ◆ Signing and lining;
 - ◆ Traffic management;
 - ◆ £200k for Statutory Undertakings; and
 - ◆ 15% Contingency.
- 4.5 Not included in the scheme cost estimates are:
- ◆ Street lighting;
 - ◆ Street furniture and landscaping;
 - ◆ Preliminary studies / surveys; and
 - ◆ Design consultant's/architects fees.
- 4.6 The surface reconstruction is the single most expensive aspect of the construction and its cost will vary widely depending on the standard of materials adopted. The broad range provided for the scheme cost estimate is designed to take consideration of this fact, with the centre point of the range representing an average standard surface.

5. Summary & Recommendations

- 5.1 This report has demonstrated that there is significant scope for improving the quality and amenity of the High Street for local people.
- 5.2 The consultation exercises have helped to identify the potential impediments to the scheme, and also to identify what the people of Knaresborough would hope to get out of such a scheme.
- 5.3 The presentation of the draft proposals to the Town Team went a long way to helping them visualise what is achievable. The incorporation of these schemes into a wider Urban Design framework for the High Street would demonstrate the full potential for environmental enhancement of this area..
- 5.4 One of the main points to arise from the consultation was that any scheme needs to be 'right' for Knaresborough, that the improvements are undertaken with due consideration of the strong local character.
- 5.5 Overall, the one way option has the potential to provide a more pleasant environment on High Street than the two way scheme, with more public space, better crossing opportunities and less traffic.
- 5.6 However, the construction of the one way option is more complex than the two way, and there are a number of major technical and political obstacles to clear before implementation could be considered.
- 5.7 The remit of this study has been to focus on what is achievable on the High Street, but it has been difficult to consider those impacts in isolation. In order to make an informed decision about the feasibility of the one way system it will be necessary to establish the full range extent of the effects of restricting traffic flow on High Street to one direction. Only by establishing the disadvantages of the one way system can a balanced view of the substantial opportunities presented by Scheme 2 be attained.
- 5.8 It is therefore recommended that some consideration is given to the technical and political obstacles associated with the one way system, including:
- ◆ Operation of the junctions within Knaresborough;
 - ◆ Impacts of additional traffic on the residential area surrounding the opposite side of the gyratory system; and
 - ◆ Impacts for public transport, in particular bus routing and access to the train station.
- 5.9 Also, as the proposed schemes approach detail design stage it will be necessary to firmly establish some of the more flexible proposals included in the designs.
- 5.10 For instance, it will be necessary to investigate (through consultation with local shop keepers) the exact requirements of vehicle loading movements and the possibility of restricting delivery times. Also, some decisions will have to be made regarding the continued provision (or otherwise) of on-street parking spaces, and restructuring of the waiting restrictions.

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- 5.11 This study has identified a number of measures that would be equally beneficial to the operation of the existing High Street as to the two scheme proposals described in this report. As such, while they may not contribute significantly to the overall environmental conditions, it may be possible that implementation of some of these measures could result in some 'quick wins'.
- ◆ Diagonal pedestrian crossing at the Gracious Street junction;
 - ◆ Footway widening on York Place and High Street adjacent the bus station;
 - ◆ Side road entry treatments;
 - ◆ 20mph zone (provided it could be proven to be enforceable).
- 5.12 Such measures could be implemented in advance of the main scheme proposals, without complicating the construction works.