

**TRANSPORT & INFRASTRUCTURE PLANNING**

Arrowsmith Associates LLP

Review of Additional Site Allocations

Pannal and Burn Bridge, Harrogate, North Yorkshire

**Transport Assessment**

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### Draft Transport Assessment

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## 1. INTRODUCTION

### Appointment & Background

- 1.1 BWB Consulting Ltd (BWB) has been appointed by Arrowsmith Associates LLP (The 'Agent') on behalf of Pannal and Burn Bridge Parish Council (The 'Client') to prepare this Transport Assessment (TA) to review the traffic & transport implications of proposed allocation of three development sites in Pannal through in the Harrogate Borough Local Plan.
- 1.2 At the time of writing this report, public consultation on Harrogate Borough Council's (HBC) Local Plan Publication Draft 2018 is running from January to March 2018. Upon review of the 2018 January Local Plan publication draft chapter 10 Delivery and monitoring DM1 housing, villages and commitments and 2018 January Local Plan publication draft chapter 10 Delivery and monitoring policies DM2, DM3 and DM4, the following sites in Pannal have been put forward for allocation:

A. PN17: Land adjoining Spring Lane Farm, Pannal

- Proposed use: Housing
- Potential yield: 72 units

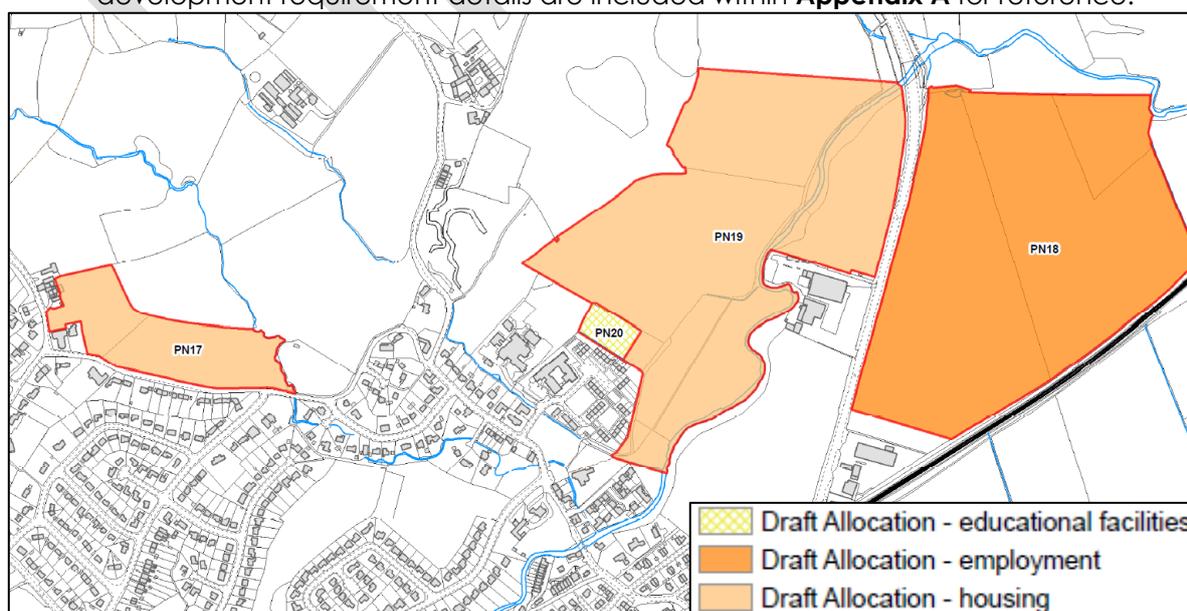
B. PN18: Employment site south of Almsford Bridge, Pannal

- Proposed use: Employment use classes B1 (offices/research/light industry), B2 (general industry) and/or B8 (storage and distribution)
- Potential yield: 93,000 sq.m.

C. PN19: Land to the west of Leeds Road,, Pannal

- Proposed use: Housing
- Potential yield: 277 units, plus land to deliver a park and stride facility and allotments

- 1.3 **Figure 1** below shows the draft allocations in Pannal. Each site's proposals and development requirement details are included within **Appendix A** for reference.



**Figure 1: Draft Allocation Sites - Pannal**

- 1.4 It should be highlighted that an outline planning application has been submitted to develop site PN17 for a total of 52 units (planning reference **17/05136/OUTMAJ**). However as the planning application is pending, the traffic impact associated with this site will be assessed at its suggested yield of 72 units to determine the operation of the highway network at the worst case scenario.
- 1.5 The draft allocation educational facilities site (PN20) proposals include expansion at Pannal Primary School. The expansion is related to sites PN17 and PN19 to accommodate the additional pupil demand. As such, site PN20 is not considered in this report in isolation to the other sites. Therefore, the traffic generation associated with site PN20 would be ancillary to sites PN18 and PN19.

## Report Structure

- 1.6 This TA has been prepared to inform The Client team and HBC of the traffic and transport implications of allocating the above-mentioned sites, given the existing constraints on the surrounding highway network in terms of accessibility and capacity. The TA is therefore structured as follows:
- **Section 2: Transport Policy** - details the national and local transport policies, including the adopted and draft HBC core strategies;
  - **Section 3: Existing Conditions** - describes the existing condition of the surrounding highway network and an analysis of Personal Injury Collision data (road safety);
  - **Section 4: Sustainable Accessibility** - details the accessibility of the sites in terms of opportunities for sustainable travel; including walking, cycling and public transport;
  - **Section 5: Development Proposals** – identifies each site requirements in terms of access (based on potential yield), parking requirements and servicing.
  - **Section 6: Traffic Generation** - quantifies the traffic generation of each sites and the cumulative traffic impact on the surrounding highway network during the peak hours;
  - **Section 7: Highway Impact** - sets out the impact of allocating the additional sites in relation to the local transport policies, road safety, accessibility and highway capacity; and
  - **Section 8: Summary and Conclusions**

## 2. TRANSPORT POLICY

### National Transport Policies

#### National Planning Policy Framework (NPPF)

- 2.1 In March 2012, the Department for Communities and Local Government published the NPPF document which replaced Planning Policy Guidance notes and Planning Policy Statements, including the Planning Practice Guidance (PPG), relating to transport.
- 2.2 The NPPF constitutes guidance for local planning authorities and decision-makers both in drawing up plans and as a material consideration in determining applications.
- 2.3 Planning law requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise. The local plan process (of which this consultation forms part) is the development of a new development plan. It suggests that encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport.
- 2.4 In addition, paragraph 32 of the NPPF states that all developments that generate "significant" amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether;
- *"the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;*
  - *Safe and suitable access to the site can be achieved for all people; and*
  - *Improvements can be undertaken within the transport network that costs effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of the development are severe."*
- 2.5 Paragraph 35 of the NPPF states: "Plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people". Therefore, developments should be located and designed where practical to:
- *"Accommodate the efficient delivery of goods and supplies;*
  - *Give priority to pedestrian and cycle movement, and have access to high quality public transport facilities;*
  - *Create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones;*
  - *Incorporate facilities for charging plug-in and other ultra-low emission vehicles; and*
  - *Consider the needs of people with disabilities by all modes of transport.*

- 2.6 Furthermore, paragraph 36 of the NPPF recommends that a Travel Plan (TP) should be produced to facilitate the above requirements, especially where a proposed development is anticipated to generate pedestrian, cycling and public transport movements.

### Local Transport Policies

- 2.7 The draft allocations are set out in the publication draft of HBC's emerging local plan, which include policies on housing, climate change, heritage & place-making and natural environment. Chapter 6 details the draft policies to Transport and Infrastructure in the district. For the purpose of this report, the draft transport policies are reviewed to identify whether the proposed allocations in Pannal are contrary or in line to these policies. This is detailed further within **Section 7.0**.

#### January – March 2018 Local Plan Publication Draft

- 2.8 Chapter 6 of HBC's Local Plan publication draft details the draft Transport and Infrastructure policies. Relevant policies to the proposed allocations in Pannal include:

- **Draft Policy TI 1: Sustainable Transport** *"The council will work in partnership with other authorities, transport providers and local groups to promote a sustainable and improved transport system which is safe, reliable, and convenient and will:*
  - A. *Improve road and rail connections both within the district and to the wider area, in particular*
  - B. *the improvement of the Leeds-Harrogate-York railway;*
  - C. *Seek reductions in traffic congestion in Harrogate, Knaresborough and Ripon;*
  - D. *Promote improvements to public transport, including the provision of better parking at rail stations and park and ride facilities, the creation of walking and cycling routes, provision of electric vehicle charging points for both cars and bikes, the Harrogate car-share scheme and measures to reduce air pollution;*
  - E. *Ensure development proposals seek to minimise the need to travel and achieve more sustainable travel behaviour by requiring all developments which will generate significant amounts of traffic to be supported by a transport statement or transport assessment and a travel plan;*
  - F. *Locate, as far as possible, the majority of future development so that it is accessible to a station on the Leeds-Harrogate-York railway or within the key bus service corridor;*
  - G. *Improve accessibility in rural areas;*
  - H. *Undertake a Strategic Transport Priorities Study for the district in order to set out the council's priorities for sustainable transport.*
- **Draft Policy TI 2: Protection of Transport Sites and Routes** *"The council will work in partnership with other authorities, transport providers and local groups to promote*

a sustainable and improved transport system which is safe, reliable, and convenient and will:

- A. New sites and routes which have the potential to contribute towards the provision of a sustainable and improved transport system will be safeguarded where there is a reasonable prospect of them accommodating new transport infrastructure before 2035. This will apply when a scheme is:
  - B. Included within the investment strategies or plans produced by Highways England, as the strategic highway authority, North Yorkshire County Council, as the local highway authority, or by another body or organisation contributing towards the creation of a sustainable and improved transport system for the district, and for which there is an agreed preferred route or site;
  - C. Along the route of a former railway line; in particular the sections of the Harrogate-Ripon-Northallerton line and the Harrogate to Wetherby line that lie within the Harrogate district;
  - D. A cycle or pedestrian route identified by the local highway authority or the district council and included within an approved plan or strategy."
- **Draft Policy TI 3: Parking Provision** "When considering the provision of parking, proposals for development should recognise an overall need to reduce the use of private cars, and take suitable account of the following factors:
  - A. The need to provide safe, secure and convenient parking at appropriate levels, including parking or storage for cycles, motor cycles and, where relevant, coaches and lorries;
  - B. Parking standards for cars, cycles, motorised two wheel vehicles, disabled parking and operational servicing requirements as prepared by the local highway authority, North Yorkshire County Council;
  - C. Policies set out in the North Yorkshire County Council Parking Strategy (and successive strategies);
  - D. Where relevant, the location of the site within an area covered by an Area Travel Plan;
  - E. Where appropriate, the need to make provision for car club and car share parking spaces;
  - F. Means to encourage the use of low emission vehicles as part of the proposal, including the ability to provide electric vehicle charging points."
- **Draft Policy TI 4: Delivery of New Infrastructure** "In order to deliver sustainable development, the council will work with infrastructure and service providers and developers to deliver infrastructure and services to support existing and future development across the district. Depending on the nature and scale of development proposed, and subject to viability, developers will be expected to make reasonable on-site provision and/or off-site provision and/or contributions towards infrastructure and services in order to cater for the needs generated by development. Proposals involving the delivery of new or improved infrastructure or services, either on its own or in combination with other development, will be supported provided that:

- A. It can be demonstrated that they are necessary to support new development and/or to rectify existing evidenced deficiencies in infrastructure or service provision;
- B. Development is phased so as to cause minimal disruption to existing infrastructure and service provision for residents and businesses;
- C. Where new infrastructure is needed to support development, the infrastructure must be operational no later than the appropriate phase of development for which it is needed."

### 3. EXISTING CONDITIONS

#### Sites Location

- 3.1 The sites are located to the north of Pannal, which is a village situated approximately 4.10 km (2.55 miles) to the south of Harrogate town centre.
- 3.2 Sites PN18 and PN19 would be mainly accessed from the A61 Leeds Road, whereas site PN17 will be accessed from Spring Lane. **Figure 2** below show the sites location in relation to the highway network.



Figure 2: Sites Location Plan

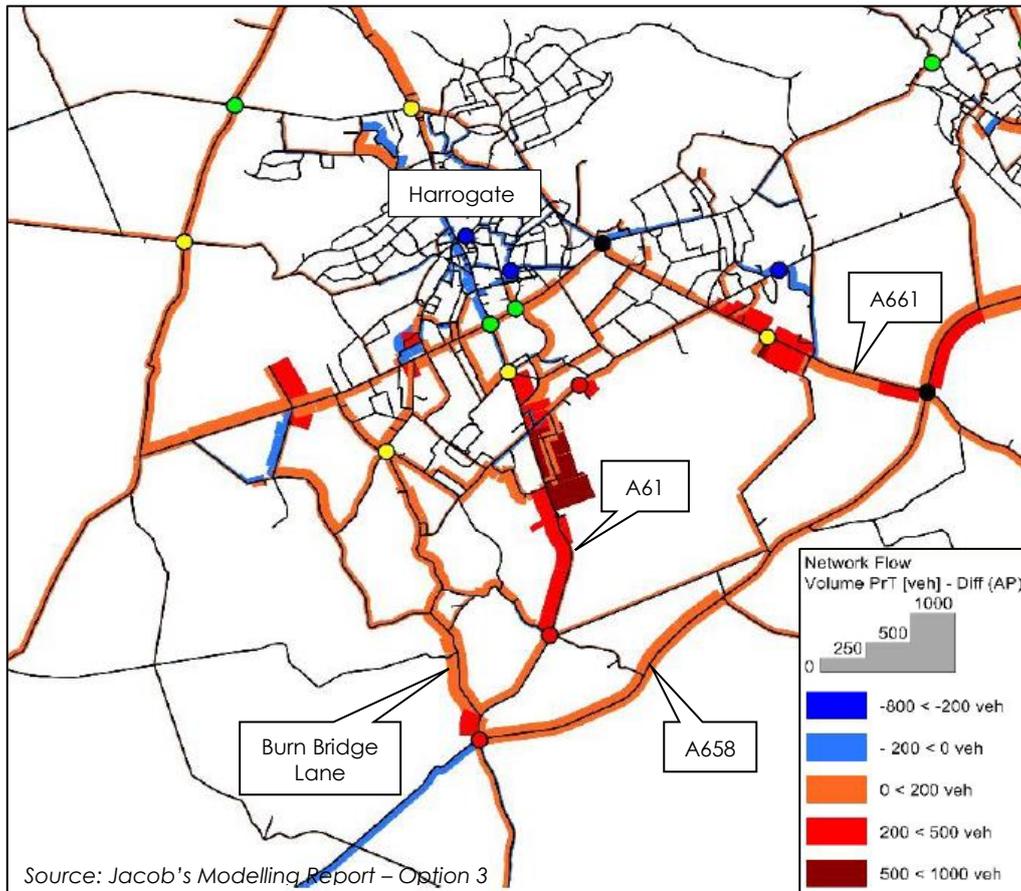
#### Surrounding Highway Network

- 3.3 The A61 is a strategic route, running between Leeds at M621 Junctions 4 & 5 and the A1(M) at Junction 50, northeast of Ripon. It also extends to Thirsk, before joining the A19 near South Kilvington.
- 3.4 The A61 frontage to Pannal and Burn Bridge connects to the A658 Harrogate Road at a major roundabout to the south of Pannal. It also connects to Follifoot Road / Pannal Bank at a staggered signalised junction and Hookstone Road / Leadhall Lane junction to the north, which is a signalised crossroad junction.

- 3.5 It is subject to 60 mph speed limit between the A61 / A658 roundabout and some 300m east of A61 / Burn Bridge Lane junction, where it reduces to 40 mph. The speed limit increases again to 50 mph from north of Harrogate Mercedes-Benz dealership, before reducing further to 30 mph at the A61 / Fulwith Gate junction, towards Harrogate town.
- 3.6 The A658 is also a strategic route to the south of Pannal. It runs between Bradford city centre at the A650 Shipley Airedale Road interchange, before linking to the A1(M) at Junction 47 via the A59.
- 3.7 Burn Bridge Lane is a single carriageway running to the west of Pannal, between the A61 and the B6162 Otley Road. It is subject to 60 mph speed limit, before reducing to 30 mph near Burn Bridge Lane / Brackenthwaite Lane junction, towards Burn Bridge village.
- 3.8 It should be highlighted that the Burn Bridge Lane section between the A61 and Brackenthwaite Lane, is currently closed for carriageway repairs and drainage improvement works. The closure is envisaged to last for 3 months between 8<sup>th</sup> January and 26<sup>th</sup> March 2018.

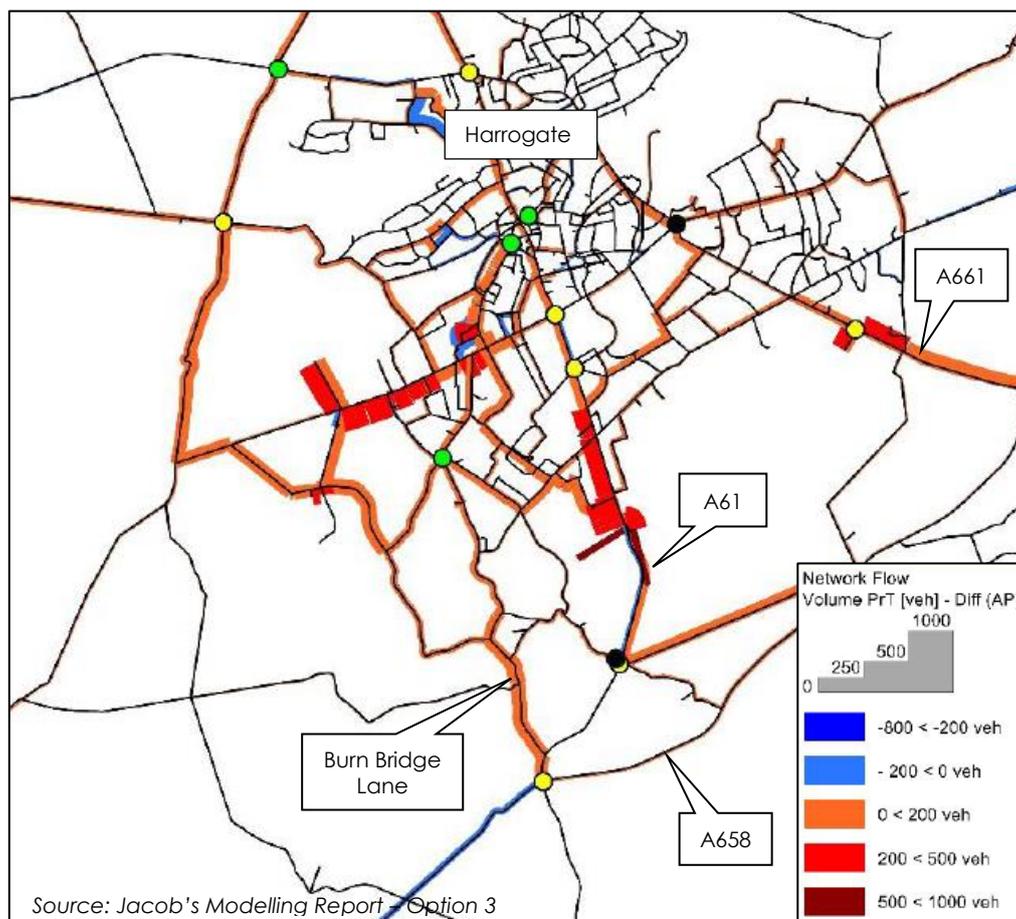
### **Future Traffic Situation**

- 3.9 To understand the existing traffic situation on the link roads around Pannal, the relevant traffic modelling profiles have been extracted from Jacob's January 2018 Modelling report. A 'VISUM' model update has been undertaken for Harrogate and Knaresborough, and the surrounding settlements. VISUM is a leading traffic analysis software that models a transport network, travel demand and expected traffic flows in a single model.
- 3.10 **Figures 3 and 4** have been extracted from the VISUM model profile of '2035 Do Minimum' scenario. Each figure represents how the local highway network would operate by 2035 during the morning and evening peak hours respectively. The 2035 Do Minimum scenario is made of background traffic growth and committed developments on a district level.



**Figure 3: Traffic Profile - Morning Peak Hour**

- 3.11 As shown, the highway network will operate at a critical level by 2035 and this excludes the impact of sites PN17, PN18 and PN19, which if allocated and developed would generate additional traffic and cause a further worsening of impact on the surrounding highway network.
- 3.12 The A61 northbound and towards Harrogate shows a predicted network flow of between 200 and 500 vehicles in only one hour. The network is deteriorated further at the A61 / Hookstone Road / Leadhall Lane junction, with a predicted network flow of between 500 and 1000 vehicles.
- 3.13 For a narrow/rural carriageway; Burn Bridge Lane is anticipated to carry a significant number of trips running between the A61 and the B6162 Otley Road to the north. This would further impact the operation of the internal highway network at Burn Bridge village.



**Figure 4: Traffic Profile - Evening Peak Hour**

3.14 The impact during the evening peak hour is more visible on the A61 southbound, towards Pannal. The A61 / Follifoot Road / Pannal Bank signalised junction would also fail to operate (shown as a black dot), which would subsequently impact the link operation of Station Road and Follifoot Road.

### Review of Traffic Data

3.15 To determine the operation of specific study area junctions, traffic surveys are usually undertaken during the morning and evening peak hours. However as Burn Bridge Lane is currently closed and traffic is diverted, it would be inaccurate to undertake traffic surveys at this stage. Therefore historic traffic data has been obtained from recently committed developments TAs in the area for the following study area junctions:

- A61 / A658 roundabout
- A61 / Burn Bridge Lane junction
- A61 / Follifoot Road / Pannal Bank signalised staggered crossroad junction
- Station Road signalised railway bridge
- A61 / Hookstone Road / Leadhall Lane signalised crossroads junction

3.16 Traffic surveys were undertaken in 2013 as part of the TA prepared by Optima for the former Dunlopillo Site development off the A61 (planning reference **13/02358/OUTMAJ**). The TA provided traffic flow diagrams of 2018 AM and PM peak base (growthed from 2013 base), which were subsequently extracted to model the above study area junctions at 2018 base scenario.

- 3.17 However the A61 / Hookstone Road / Leadhall Lane junction did not form part of the study area junctions for the Dunlopillo site development and hence was not surveyed at the time.
- 3.18 Nonetheless another planning application has been approved at the former BT Training Centre development, off St Georges Walk in Harrogate (planning reference **15/05478/OUTMAJ**). The TA that was prepared by WSP in support of the planning application, provided traffic survey data, and the signalised junction was assessed in 2015. Therefore BWB used relevant growth factors to assess the operation of the junction at AM and PM peak 2018 base (from 2015 base).
- 3.19 The extracted traffic survey data are included in **Appendix B** for reference. The modelling results of the study area junctions and assessment scenarios are detailed further within **Section 7.0** in this TA.

### Road Safety

- 3.20 Personal Injury Collision (PIC) records for the local highway network in the vicinity of the Sites has been reviewed using the Crashmap database. PICs that took place in the latest five-year period (2013-2017) has been reviewed. **Figure 5** below shows the PIC plot.



**Figure 5: PIC Plot - A61**

- 3.21 As shown, a total of 20 PICs occurred in proximity of the three sites, 12 were of slight severity and eight were of serious severity. Out of the total serious PICs, seven occurred along the A61 and one on Yew Tree Lane to the west of site PN17.
- 3.22 The number of PICs taking place along the A61 suggests that there is an existing road safety concern. The inconsistent changes to the speed limit along the A61, limited forward visibility on the A61 bend to the north and growing traffic are likely to have contributed to the existing road safety situation. As sites PN18 and PN19 are likely to be accessed from the A61, significant mitigation measures would be required to improve the existing road safety situation.

- 3.23 Therefore any potential access from the A61 to serve either sites PN18 and PN19 is likely to further increase road PICs with added traffic, delays and queuing. Moreover, as both sites are located within walking distance to Pannal train station and Pannal Primary School, additional pedestrian and cyclist trips will be generated, which in turn increases the likelihood of serious and fatal PICs in the future.
- 3.24 Off-site junction were also reviewed using the Crashmap database. This include A61 / A658 roundabout, A61 / Burn Bridge Lane junction and A61 / Hookstone Road / Leadhall Lane junction. **Figures 6, 7 and 8** show the PIC plot for the respective junctions.

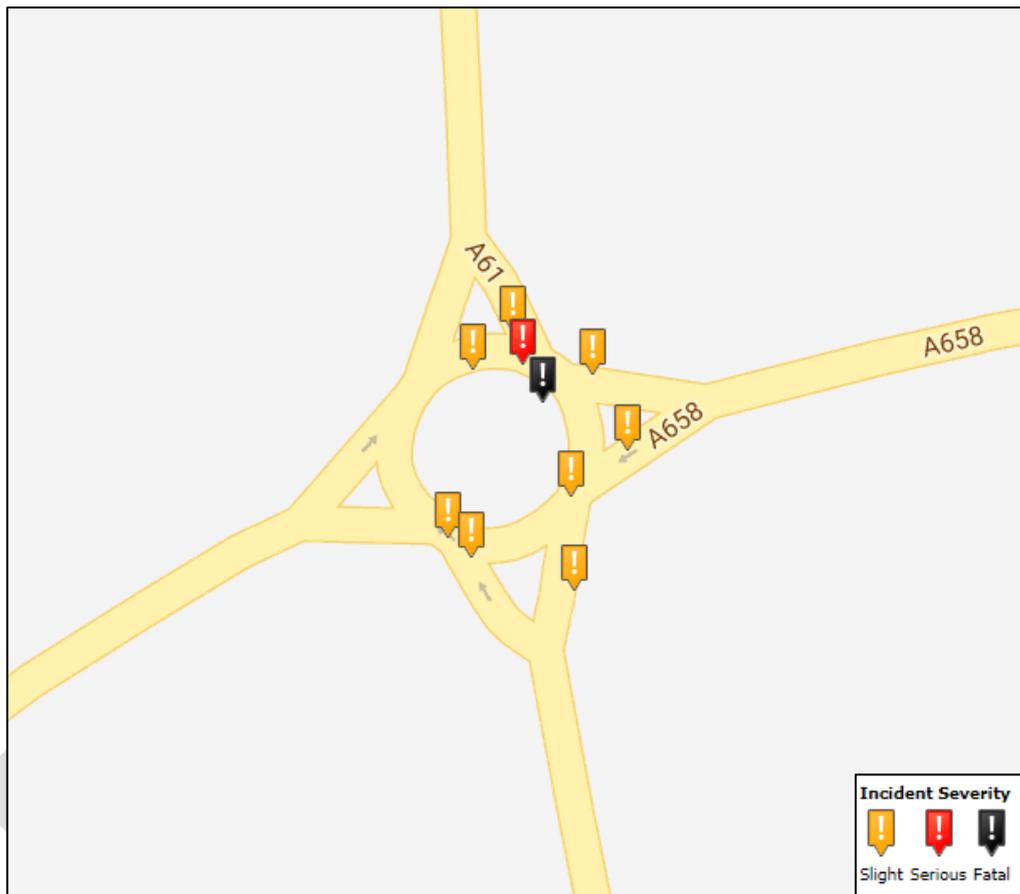


Figure 6: PIC Plot - A61/A658 Roundabout

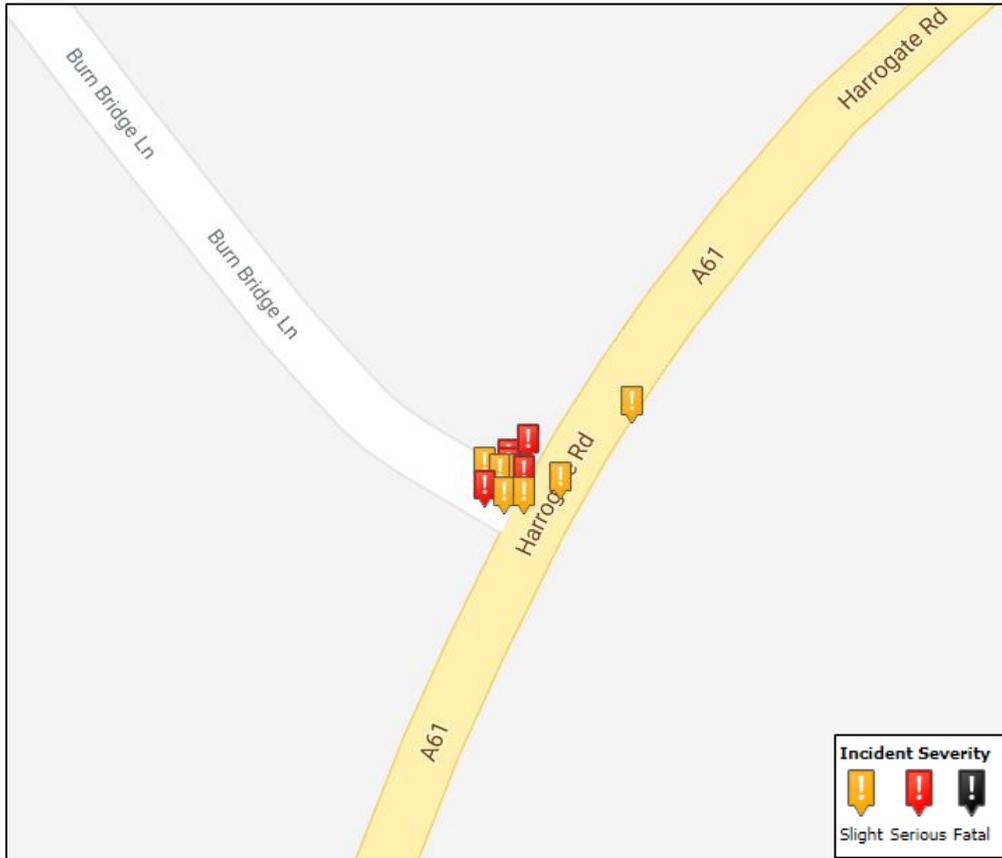


Figure 7: PIC Plot - A61 / Burn Bridge Lane Junction

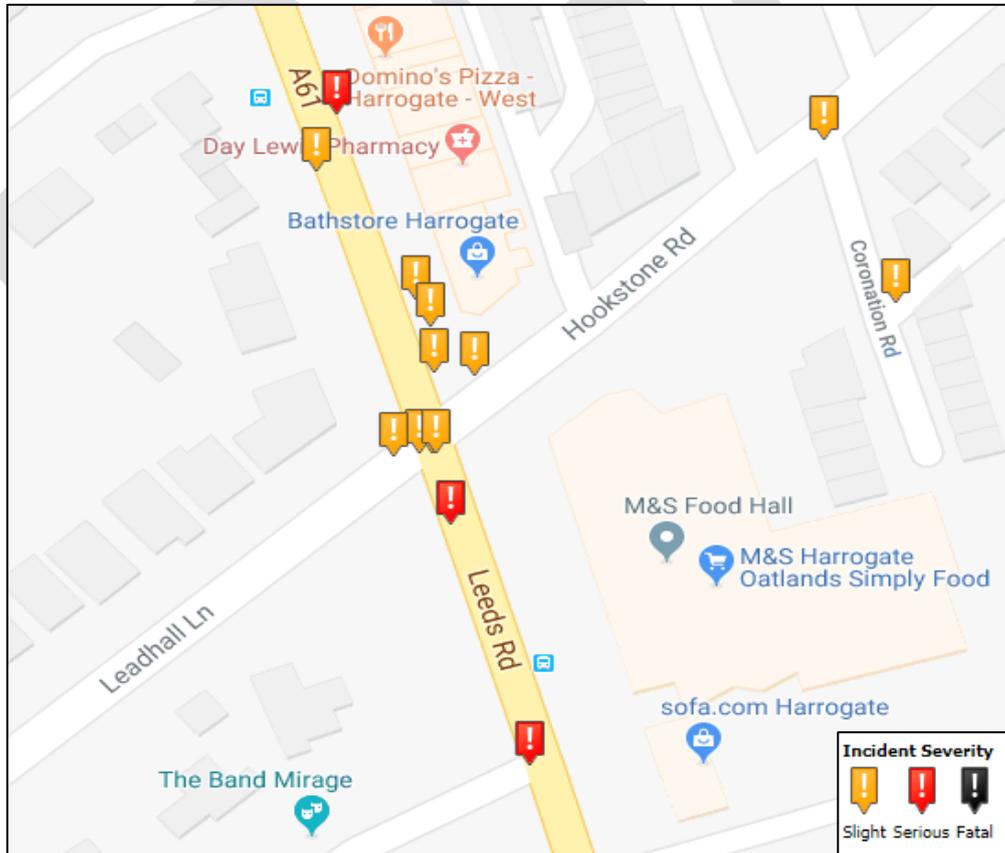


Figure 8: Figure 7: PIC Plot - A61 / Hookstone Road / Leadhall Lane Junction

- 3.25 As shown, the A61 / A658 roundabout witnessed a total of 10 PICs in the last five years (2013-2017), one of which was serious PIC and one fatal PIC. Again, this is considered a significant road safety concern and the situation would deteriorate further with the allocation and development of the three sites.
- 3.26 A cluster of PICs also occurred on the A61 / Burn Bridge Lane junction, with a total of 12 PICs, five of which were serious. There is an engineering factor likely to be contributing to the road safety issue on this junction, which is the exit visibility envelope. Design Manual for Roads and Bridges (DMRB) require the visibility splays, where the speed limit of the road is 60 mph, to be 215m on either sides of the junction, from a 2.4m set-back.
- 3.27 This cannot be achieved to the nearside of the A61 carriageway, as only 160m is available to the north and 170m to the south, based on generic Google Maps review. The forward visibility for right turners onto Burn Bridge Lane is further restricted at around 130m available, from the minimum requirement of 215m. This is largely contributed by the heavy vegetation opposite the junction and the bend of the A61 at this section.
- 3.28 A Desktop review suggests that signalised junctions are safer than normal crossroad junctions, as traffic approaching any arm would be slowing for the traffic signals and the provision for pedestrian crossing as a separate stage allows for safe pedestrian/cyclist crossing.
- 3.29 However this is not the case for the A61 / Hookstone Road / Leadhall Lane junction, where a total of 11 PICs occurred between 2013 and 2017, three of the PICs were of serious severity. The main factor likely to be contributing to this cluster is heavy traffic movement on the ahead directions along the A61. Traffic queuing on either approaches of the A61 is likely to be obstructing the visibility and movement of traffic turning left/right from the approaches of the minor arms, such as Firs Road, Leadhall Lane and Hookstone Road.
- 3.30 Again, the allocation and development of the three sites in Pannal would significantly impact the safety and operation of the A61 / Hookstone Road / Leadhall Lane junction, as it is considered a main route to Harrogate. In addition, identifying a scheme to mitigate the impact on this junction would be difficult to implement, due to the surrounding built-up nature of the area and third party constraints.