

THE CITY OF BRADFORD METROPOLITAN DISTRICT COUNCIL (A650 HARD INGS  
ROAD IMPROVEMENT, KEIGHLEY) COMPULSORY PURCHASE ORDER 2017

THE CITY OF BRADFORD METROPOLITAN DISTRICT COUNCIL (A650 HARD INGS  
ROAD IMPROVEMENT, KEIGHLEY) (SIDE ROADS) ORDER 2017

THE HIGHWAYS ACT 1980

-and-

THE ACQUISITION OF LAND ACT 1981

THE HIGHWAYS (INQUIRIES PROCEDURE) RULES 1994  
COMPULSORY PURCHASE (INQUIRIES PROCEDURE) RULES 2007

National Transport Casework Team (REFERENCE: NATTRAN/YH/LAO/130)

In the matter of

a highway improvement scheme involving highway alterations to facilitate and widen  
the A650 Hard Ings Road, Keighley, from its junction with the A629 Beechcliffe  
Roundabout, generally eastwards to a point 75 metres west of its junction with  
Bradford Road, Roundabout, Bradford in the  
County of West Yorkshire

Supplemental Rebuttal Proof of Evidence

of

**Andrew John Bradshaw**

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MSci (Hons), MSc, MCIHT

by way of rebuttal to further representations and objection  
by Mr Tariq Ghafoor

to be presented as evidence on behalf of  
The City of Bradford Metropolitan District Council

to

Local Public Inquiry - 30<sup>th</sup> January 2018

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## Appendices

Appendix A: Objection from Mr Tariq Ghafoor dated 1st December 2017

## 1 Personal Details

- 1.1 My name is Andrew John Bradshaw and I hold the position of Director of Fore Consulting Limited (Fore), which is a consultancy specialising in transport planning. I have a First Class Master in Science (MSci) in Physics from the University of Nottingham. I also have a Master of Science (MSc) in Transport Planning Practice from the Institute of Transport Studies at the University of Leeds, for which I was awarded a Distinction. I am a member of the Chartered Institution of Highways and Transportation (CIHT).
- 1.2 I have over 15 years' experience in transport planning and modelling with a specialism in traffic microsimulation modelling, particularly using Aimsun software, which has been used by the Council in their modelling work in relation to the A650 Hard Ings Road Improvement Scheme (referred to hereon as "the scheme").
- 1.3 For the purposes of this inquiry, I confirm that I am familiar with the site and surrounding highway network.

## 2 Scope of Evidence

- 2.1 This Rebuttal Proof of Evidence has been prepared in response to the objection submitted by Mr Tariq Ghafoor dated 1<sup>st</sup> December 2017. A copy of the objection is presented in Appendix A. This Rebuttal covers the transport planning and transport modelling aspects of the objection.



### 3 Objection 3 - Increasing the Capacity of Hard Ings Road

- 3.1 In paragraph 3.3.5, Mr Ghafoor disagrees with the Council that the A650 Hard Ings Road is an Urban All Purpose (UAP) 3 road type and states that the existing road is a 7.3m wide UAP2 road type, but does not state why he considers this to be the case.
- 3.2 With reference to Table 1 of TA79/99 (Core Document 4), Table 1 (below) highlights the differences between UAP2 and UAP3 road types (note that all other features are the same between the two road types). This shows that Hard Ings Road generally has more UAP3 features than UAP2. I therefore agree with the Council’s assessment that the road is currently a UAP3 road type. The road also measures approximately 9.0m wide and not 7.3m, as suggested by Mr Ghafoor.

**Table 1: TA79/99 Road Type Comparison**

Feature	UAP2	UAP3	Assessment
Speed Limit	Generally 40 mph	30 mph to 40 mph	Hard Ings Road is subject to a 30mph speed limit.
Access to roadside development	Access to residential properties	Frontage access	Frontage access to several businesses including Land and Buildings known as Hard Ings Motor Company.
Parking and loading	Restricted	Unrestricted	Waiting is restricted during the daytime but there are no loading restrictions.

- 3.3 A 7.3m wide UAP2 road has a capacity of 1,470 vehicles per hour in the busiest flow direction assuming a 60/40 directional split whereas a 9.0m wide UAP3 road has an equivalent capacity of 1,530 vehicles per hour. Even if a 9.0m wide UAP2 road were considered, this would have a capacity of 1,550, just 20 vehicles more than a UAP3 road.
- 3.4 In paragraph 3.3.6, Mr Ghafoor states that he is *“advised that 1,539 vehicles per hour one-way does not equate to a capacity of 550 vehicles per hour two way, as stated in the CBMDC reply.”* This was a typographical error in the Council’s response. The correct value is a two-way capacity of 2,550 vehicles, as set out in paragraph 4.3 of my main Proof of Evidence. This error was corrected in correspondence from the Council to Mr Ghafoor dated 6<sup>th</sup> December 2017.
- 3.5 Notwithstanding the above, Mr Ghafoor, in his paragraph 3.3.4, takes the average PM Peak Hour two-way flow on Hard Ings Road of 2,829 vehicles per hour and applies a **50/50 directional split** to give 1,415 vehicles per hour. He then compares this to the 1,470 vehicles per hour capacity of a 7.3m wide UAP2 road to conclude that the road has sufficient capacity. However, the capacity figure quoted assumes a **60/40 directional split**. If a 50/50 split is applied to the TA79/99 capacity (consistent with that applied to the traffic flows), then this gives a one-way capacity of 1,225, implying that the road is currently significantly overcapacity.
- 3.6 In paragraph 3.3.8, Mr Ghafoor concludes that *“the existing link road between the Bradford Road Roundabout and the Beechcliffe Roundabout has adequate capacity”*. However, as demonstrated above, this conclusion has been drawn from a flawed assessment.

- 3.7 Mr Ghafoor goes on to state, in his paragraph 3.3.11, that the *“main congestion is at the approaches to the Bradford Road Roundabout and also the Beechcliffe Roundabout”*. I demonstrate through the TRANSYT assessments in section 6 of my main Proof of Evidence that the existing roundabouts do currently exceed practical capacity. However, I also demonstrate how it is the two-to-one lane merges on the exits to the A650 Hard Ings Road that cause this congestion either through uneven lane usage (paragraph 6.10 of my main Proof of Evidence) or queues blocking back through the junction from the merge (paragraph 6.11 of my main Proof of Evidence).
- 3.8 I therefore disagree with Mr Ghafoor’s statement in his paragraph 3.3.13 that *“the scheme has not been properly thought through and is not addressing the actual congestion problem areas, Bradford Road and Beechcliffe Roundabout”*. The congestion at these locations is caused directly by the Hard Ings Road bottleneck and the scheme is designed to directly address the cause of the congestion.
- 3.9 Later in his paragraph 3.3.13, Mr Ghafoor holds *“CBMDC to strict proof to the congestion areas and the proposed scheme will solve this congestion and not create further congestion”*. This is proven through the transport modelling presented in sections 5 and 6 of my main Proof of Evidence, which demonstrate significant scheme benefits.

## 4 Objection 4 – Traffic Growth Forecasts

- 4.1 Mr Ghafoor’s objection in relation to the traffic growth forecasts is summarised in his paragraph 3.4.1 where he states that these “*are derived from rates that are not based on historic data*” and later in his paragraph 3.4.5 where he states that “*in the absence of data supporting the growth rates used by CBMDC, I am not convinced that the traffic modelling of this proposal provides a true representation of the performance of this scheme in the design year*”.
- 4.2 I deal with these points extensively in my main Proof of Evidence. In paragraphs 4.11 to 4.13, I explain how traffic volumes have not increased significantly on Hard Ings Road because no more traffic can pass through A650 Hard Ings Road due the capacity bottleneck. I also demonstrate how there has been growth on the approaches to Hard Ings Road, demonstrating general traffic growth in the area. In paragraphs 5.12 to 5.18, I explain how the Council’s approach to future traffic growth therefore represents a realistic middle ground between the historic trend of broadly static growth and the national growth forecasts.

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## 5 Objection 6 - Toucan Crossing and Objection 7 - Traffic Signal Controlled Junction with Lawkholme Lane

5.1 Mr Bruce deals with the traffic engineering related objections in his Rebuttal Proof of Evidence. However, in terms of transport planning, Mr Ghafoor argues that both the proposed toucan crossing and traffic signal controlled junction with Lawkholme Lane will create additional congestion. The Aimsun modelling that was undertaken by the Council to assess the effects of the scheme includes both the proposed toucan crossing and the traffic signal controlled junction. The modelling shows that the scheme will provide significant benefits and there is therefore no evidence that these elements of the scheme will result in any increases in congestion.



## 6 Objection 8 – Beechcliffe Roundabout

- 6.1 In his paragraph 3.8.2, Mr Ghafoor states that the output data from the modelling of this junction has not been provided. I can confirm that the TRANSYT output files were subsequently provided in full on 19 December 2017.
- 6.2 Mr Ghafoor states in his paragraph 3.8.2 that *"the existing roundabout performs satisfactorily, even in the peak periods"*. However, as set out in paragraph 6.8 of my main Proof of Evidence, the TRANSYT modelling demonstrates that the roundabout currently operates in excess of practical capacity in the AM peak hour and significantly over capacity in the PM peak hour. Conditions at the roundabout are set to deteriorate further by 2026, with the highest DoS increasing to 125% and with a considerable level of delay. This is further evidence by considering the traffic speeds on the approach to the roundabout (paragraph 4.14 and Table 6 of my main Proof of Evidence), which shows average speeds significantly below the speed limit.
- 6.3 Later in his paragraph 3.8.2, Mr Ghafoor notes that the *"proposed signal control will inevitably result in delays during the red phases of the traffic signals at all times of day and these delays will be more significant during peak periods"* and that he is *"sceptical of any benefits resulting from these proposed works and remain[s] of the view that the existing layout should be retained"*.
- 6.4 However, both Aimsun and TRANSYT modelling (sections 5 and 6 of my main Proof of Evidence, respectively) demonstrates that the proposed scheme would result in the roundabout operating well within practical capacity with significant benefits in terms of reduced delay.

## 7 Summary and Conclusions

### Summary

7.1 This Rebuttal Proof of Evidence has been prepared to address the transport planning and transport modelling aspects of an objection submitted by Mr Tariq Ghafoor dated 1<sup>st</sup> December 2017. I have explained how the issues raised by Mr Ghafoor have been addressed, in particular:

- The A650 Hard Ings Road currently operates over capacity and that congestion will worsen in the future without the scheme.
- The removal of the Hard Ings Road bottleneck by providing two lanes in each direction will address existing issues at the Beechcliffe and Bradford Road roundabouts.
- No growth has been observed on the A650 Hard Ings Road itself as no more traffic can pass through A650 Hard Ings Road due the capacity bottleneck. However, there has been growth on the approaches to Hard Ings Road, demonstrating historic growth in the area. The Council's approach to future traffic growth represents a realistic middle ground between the historic trend of broadly static growth and the national growth forecasts.
- The proposed toucan crossing and signalisation of the Lawkholme Lane junction will not cause additional congestion; the scheme will actually reduce congestion and will provide significant journey time benefits.
- Modelling of the Beechcliffe roundabout shows that the proposed scheme will address existing queuing and delay at this location.

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## Conclusion

7.2 In summary, I am of the view that I have advanced a compelling case to justify the Orders being confirmed in the public interest to ensure that the Council, acting on its behalf, will be able to use compulsory purchase powers, should the use of such powers be required as a last resort, to acquire for the purposes of the Orders, all the land and rights needed to promote, deliver and facilitate the proper construction to improve and widen the A560 Hard Ings Road, Keighley in the County of West Yorkshire, from its junction with the A629 Beechcliffe Roundabout, generally eastwards to a point 75 metres west of its junction with Bradford Road Roundabout.

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## 8 Expert Declaration

- 8.1 I confirm that my duty to the Inquiry as an expert witness overrides any duty to those instructing or paying me, that I have understood this duty and complied with it in giving my evidence impartially and objectively and that I will continue to comply with that duty.
- 8.2 I confirm that my expert evidence includes all facts which I regard as being relevant to the opinions I have expressed and that attention has been drawn to any matter that would affect the validity of those opinions.
- 8.3 I am not instructed under any conditional fee arrangement and have no conflict of interest.
- 8.4 I confirm that I have made clear which facts and matters referred to in this proof of evidence are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

## Appendix A

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Objection from Mr Tariq Ghafoor dated 1<sup>st</sup> December 2017

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