14.0 Sensitivity and Scenario Analysis

14.1.1 In order to gauge how robust the economic case really is a number of sensitivity tests have been considered.

14.1.2 The SATURN / TUBA assessment has assumed that there is ever increasing demand for travel up to 2026 at which time the traffic matrices are capped. For the purposes of the economic assessment however, the years after 2026 were assumed to be identical to 2026 i.e. with the same benefits in the Do Something throughout the years to 2070. In view of the uncertainties about predictions extending that far into the future, it has been decided to show what level of economic benefit would be generated by the scheme if only the benefits up to and including the 15th year after opening were included.

14.1.3 This sensitivity test has been considered since it could be argued that the Do Minimum situation will get progressively worse with time when compared to the Do Something and a future year Do Minimum improvement could be warranted, otherwise the benefits of the with scheme scenario are artificially high. The Present Value of Benefits accruing over the first 15 years after the scheme has opened to traffic totals £17,254,000. The respective Net Present Value would be £10,331,000 and give a Benefit Cost Ratio of 2.5. This sensitivity test therefore demonstrates that the benefits accruing up until 2026, the Design Year, would in themselves provide sufficient return on investment to justify this scheme as a 'High value for money scheme 'as stipulated by Government guidance.

14.1.4 A similar sensitivity test has been undertaken only this time limiting the expected economic benefits to a 30 year assessment period i.e. half the existing timeframe over which the Department requires the cost benefit analysis to be undertaken. Under this scenario the PVB totals £39,214,000 with a corresponding NPV of £32,291,000 and a BCR of 5.7. It can be seen therefore that the expected return on investment will be considerable even if the benefits accruing to years far into the future are ignored.

14.1.5 A scenario has been considered which gives a monetary value to the quality benefits brought about by the improvement scheme. The preferred scheme will offer a dramatically improved shopping and pedestrian environment, and improved bus interchange facilities. Clearly the quality improvements will also encourage higher numbers of shoppers and bus passengers into Hucknall town centre.

14.1.6 A number of stated preference surveys (e.g. TRL 593 report) seek to identify people's willingness to pay for various improvements. TRL 593 indicates that for a typical package of bus interchange improvements passengers would in theory be prepared to pay up to a maximum of 10% of the bus fare. A value could equally be applied to pedestrian benefits arising from the pedestrianisation. The car park charges in Hucknall are £1.00 per day. It would not be unreasonable to allot a daily 'quality benefit' of 10 pence per pedestrian based on 10% of the daily parking cost. Based on the observed 10,090 pedestrians per weekday on High Street this generates a quality benefit of £1,009 per day or nearly £308,000 per annum (assuming 305 working weekdays and Saturdays per year). Converting this to 2002 prices and discounting the benefits over the 60 year appraisal period gives a total present value of quality benefits of £5,104,000.

14.1.7 If this level of quality benefit were added to the PVB of the preferred scheme then the total PVB would be £83,058,000 with a corresponding NPV of £76,135,000 and the BCR would climb to 12.0. In this scenario the benefits accruing to pedestrians in terms of both journey time savings and quality benefits would total £ 11,833,000 and would exceed the PVC (£6,923,000) in their own right i.e. without the decongestion benefits to traffic. This would equate to a BCR of 1.7 for the pedestrian benefits in isolation.