A35 Christchurch Route Management Study (A35 RMS) Summary.

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1.0 Introduction

1.1 The A35 in Christchurch is one of the busiest routes in Dorset and has a high number of collisions and casualties. It has been the subject of a number of previous studies including an overall assessment of the A35 from the Bournemouth boundary to the Hampshire border carried out by the Traffic Management Team, Dorset County Council (DCC).

1.2 The A35 Route Management Study (A35 RMS), commenced in 2008, was undertaken to address current issues on the A35 corridor and focussed on achieving results against casualty reduction targets and the Local Transport Plan objectives of relieving congestion and improving accessibility.

1.3 The aims of the study were to produce a programme of schemes that would reduce casualties, improve pedestrian and cycle access, reduce congestion and improve facilities for public transport.

1.4 This report provides a brief outline of the A35 RMS and its outcomes and identifies more recent projects that may have an impact on the route including planning applications, the emerging Christchurch and East Dorset Core Strategy and the 3 Towns Corridor Local Sustainable Transport Fund bid.

2.0 A35 RMS

2.1 A core group of County Council officers met on a regular basis to undertake the A35 RMS, monitor progress and commission any necessary analysis or design work. The short, medium and long term targets for the project were as follows;

Short term	Minor road safety improvements, cycleways and a new toucan crossing on A35.
Medium term	Route Management Study of Fountains Roundabout, Bargates, Bargates/Fairmile/Stour Rd junction. The focus would be to improve the junctions in a similar way to previous works at the Barrack Road/Stour Road crossroads.
Long term	Route Management study along the whole length of the A35 in Christchurch.

2.2 These targets were adjusted during the study. For example, the new toucan crossing of the A35 has not yet been delivered and has led to a wider reaching signalisation proposal for the Stony Lane roundabout.

2.3 A short term objective was an assessment of cycleways along the A35. A deficiency was identified between Bailie Bridge roundabout and Iford Bridge and a scheme was subsequently implemented to provide facilities along this route, including shared use cycle/footways and a toucan crossing of Sopers Lane.

2.4 The short term aim of providing a toucan crossing of the A35 on the western arm of the Stony Lane roundabout proved more difficult to implement. The speed of west bound traffic negotiating the roundabout was too great to enable the provision of a safe crossing. For this reason a more fundamental redesign of the Stony Lane roundabout, including partial signalisation, was developed in parallel with the other medium term projects within the RMS.

2.5 An accident analysis was undertaken for the whole corridor and the overall accident rate was found to be above the Dorset and National averages for 'A' class roads. Clusters of accidents on approaches to roundabouts along the route were identified. The analysis confirmed that the worst of these was the A35 westbound approach to Stony Lane roundabout with the eastbound approach also having a significant cluster.

2.6 The majority of accidents were found to be a result of human error with causes such as 'failing to look', 'failing to judge course or speed' and 'executing a poor manoeuvre' being typical examples. A SCRIM data plot of the route revealed that there were significant areas where the skid resistance was of concern with skidding recorded at 14% of KSI collisions and 7% of all collisions.

2.7 As part of initial master-planning work on the proposed Roeshot Hill residential site it has been proposed to lower the speed limits on Lyndhurst Road to 40mph and on the A35 dual carriageway section between Somerford Roundabout and Stony Lane Roundabout to 50mph, supported by average speed cameras. This reduction in speed would aid the reduction in both the number and severity of accidents.

Traffic modelling

2.8 A micro-simulation model of the main Christchurch road network was produced to inform the RMS and to test any junction and network improvements that might be proposed. The extent of this model can be seen in appendix A. This modelling work was undertaken in 2009 and the model was extended in 2010/11 to include Somerford Roundabout in the east to enable the impact of proposals at the proposed Roeshot Hill development to be tested.

2.9 The original A35 PARAMICS forecasting report concluded that while the 2016 model was fit for purpose to test future scenarios, the 2026 version was not. The 2026 forecast year model experienced large queues and delays caused by the congested and over capacity

network brought about by the additional forecast growth in traffic. This was especially noticeable in the PM period. For this reason indicative improvements were made at key points on the modelled network to enable the testing of future scenarios, including the emerging housing proposals at Roeshot Hill. These changes included;

Stony Lane roundabout - Changing lane discipline on the Stony Lane (north) approach and partially signalising the roundabout on the A35 East and West arms and the Stony Lane north arm.

Fountains roundabout – Following several iterations this junction was modified to provide extra lanes on the circulating carriageway. Sopers Lane was changed to 'entry only' and the bus gate was removed. Signals were also added to the Barrack Road entry.

Minor changes were also made to the Barrack Road/Stour Road signals, the Stour Road Tuckton roundabout and the Sainsbury's roundabout.

2.10 It should be made clear that these changes were only intended to be indicative and were made to get the model to work at key points on the network in order that future scenarios could be tested. Actual improvements would be different as those used in the model were not fully assessed for all modes, were not safety audited and not least because developments such as Roeshot Hill were not taken into account within this stage of modelling.

2.11 The above improvements provided a model that was considered fit for purpose to and ready to be used when testing of future scenarios in 2016 and 2026.

2.12 Following completion of the base model, including the above changes for the 2026 future year, a test of the Roeshot Hill proposals emerging through the Core Strategy was undertaken in summer 2011. At the time of testing these proposals were for 932 houses to be accessed from three locations including an all movements, signalised, junction at Staple Cross and two new signalised junctions on the A35, Roeshot Hill. This test also included a proposed signalisation scheme at the Stour Road/Bargates/Fairmile junction.

2.13 The general results were that the AM peak hour model, including the 2026 amendments outlined above, performed relatively well with the additional development related traffic. In the PM, development related traffic placed much of the model over capacity with significant congestion at times. It was concluded that the A35 corridor from Stony Lane Roundabout through to Bailey Drive will need further investigation and modification, in addition/instead of those amendments made to the 2026 model outlined above to improve traffic throughput. Key 'hot spots' in this scenario were the A35 westbound approach to Stony Lane roundabout, Fountains roundabout and the Barrack Road/Stour

Road signals. DCC is content that a reasonable package of mitigation measures, to overcome the issues identified in the pm period, can be achieved.

Junction proposals

2.14 A partial signalisation scheme was developed for Stony Lane Roundabout out of a desire to provide a toucan crossing of the A35 on the western arm of the roundabout and to improve traffic capacity. The provision of a crossing would provide part of a pedestrian/cycle link between Burton to the north and Christchurch town centre to the south.

2.15 To provide safe conditions for the operation of the crossing it was necessary to introduce additional signals on the roundabout without impacting on the capacity of the junction as a whole. Following several iterations of the scheme, the northern Stony Lane arm, A35 east arm and A35 west arm were signalised. Pedestrian crossing facilities were included in the signalisation of the Stony Lane north arm and A35 west arm. This scheme has been estimated to cost just over £2 million.

2.16 Section 3.0 below outlines a recent planning application on Stony Lane that has led to a scheme with greater capacity benefit at this junction, although this has not yet been tested with the Roeshot Hill traffic.

2.17 In addition to the Stony Lane roundabout, medium term projects included junction improvements at Fountains Roundabout. This junction experiences significant peak hour congestion and is perceived as a barrier to pedestrians and cyclists. Buses also have to pass through this junction and would benefit from improved reliability.

2.18 The outline scheme for Fountains Roundabout includes alterations to the signalised gyratory layout and introducing one-way traffic flow on the northern end of Sopers Lane. The estimated cost for this scheme is c. £2 million.

2.19 In addition to these improvements a proposal has been assessed to provide signals at the entrance to the Waitrose car park at the eastern end of the gyratory. The PARAMICS model showed that this would have negligible impact on the operation of the junction and ducting was laid in the road during recent resurfacing works to enable the provision of these signals.

2.20 A preliminary design has also been produced for signalisation of the Stour Road/Bargates/Fairmile junction. The implementation of this scheme has been tied in with the LSTF bid discussed below.

3.0 Planning applications

3.1 More recently there has been a significant planning application for a large foodstore on Stony Lane, Christchurch (ref: 8/11/0535). As part of the assessment of this application, a signalisation scheme was worked up for Stony Lane roundabout which mitigated the traffic impact of the store in terms of junction capacity and safety. The proposal was produced in consultation with DCC and was tested on the A35 PARAMICS model outlined earlier in this report.

3.2 The foodstore scheme was modified to include an additional toucan crossing and signals on the A35 west arm of the roundabout. This scenario was found to have significant capacity benefit while providing a mechanism to deliver the A35 crossing that was originally planned for delivery early in the A35 RMS period.

3.3 The foodstore application was refused planning permission by Christchurch Borough Council at committee on 14 June 2012. The scheme design for the roundabout may however still be developed in preference to DCC's own scheme developed through the A35 RMS.

3.4 Any future planning application for development in association with the Roeshot Hill site will be expected to deliver sustainable transport improvements including the following;

- shared use footway / cycleways both sides of Lyndhurst Road
- improved links to Hinton Admiral train station
- pedestrian / cycle crossing points at the development access junctions
- enhancements to local bus services

3.5 There are likely to be future planning applications along the A35 route, including for the planned residential development at Roeshot Hill. While DCC has worked up some schemes on this route, it is open to suggestions from developers and their transport advisors as to different solutions that may be applied at any of the problem locations identified. Working collaboratively in this way will optimise the design of schemes submitted in association with planning applications.

4.0 Three Towns Corridor LSTF bid.

4.1 A bid to central government has recently been successful, securing £12 million towards a package of schemes through the Local Sustainable Transport Fund (LSTF). Some of these proposed schemes, scheduled for construction between 2013 and 2015, would have an impact on the A35 in Christchurch including;

- Stour Road/Bargates Junction signalisation

- Stour Road proposed bus lane
- Somerford Road footway/cycleway
- Stony Lane/Purewell junction improvements
- Barrack Road footway/cycleway
- Stony Lane railway bridge shuttle working.

5.0 Conclusions

5.1 The A35 RMS was undertaken to look at issues of safety, accessibility and capacity along the A35 in Christchurch. Since it commenced in 2008 some infrastructure improvements such as the cycle way along Barrack Road and Sopers Lane toucan crossing have been constructed.

5.2 The RMS identified that there was a higher than average accident rate on the A35 when compared with roads of a similar type across the country.

5.3 Key junctions, including Stony Lane roundabout and Fountains roundabout, were examined by the A35 RMS. Outline design proposals were produced for these two junctions aiming to increase capacity and provide improved accessibility. A revised proposal for Stony Lane roundabout has been provided as part of a recent planning application at Stony Lane. While these outline designs exist, they were not fully worked up and were not examined with the traffic expected from the proposed residential development at Roeshot Hill. It is not therefore expected that final designs for these junctions will reflect the outline designs so far generated by the County Council or the recent planning application at Stony Lane.

5.4 Traffic modelling, within the PARAMICS micro-simulation system, identified that key junctions along the A35 including Stony Lane roundabout and Fountains roundabout will struggle to accommodate traffic from the proposed Roeshot Hill development in their current form, especially in the PM peak hour.

5.5 DCC will work with developers and their agents to develop schemes which mitigate the impact of their developments. These schemes will not necessarily reflect the outline proposals developed by DCC and alternative solutions, which mitigate the impact from development and meet with objectives to improve accessibility and safety, will be welcomed. In the case of the Roeshot Hill residential development, DCC are content that there is a package of measures, including significant junction improvements and sustainable transport improvements, which would be acceptable by way of mitigation against the expected impact.

5.6 Improvements, such as the package of LSTF schemes, continue to be provided on this corridor and may impact upon the network, the impact of proposed development upon it and on the package of mitigation measures that a development will need to provide.

Appendix A
Extent of Christchurch PARAMICS model

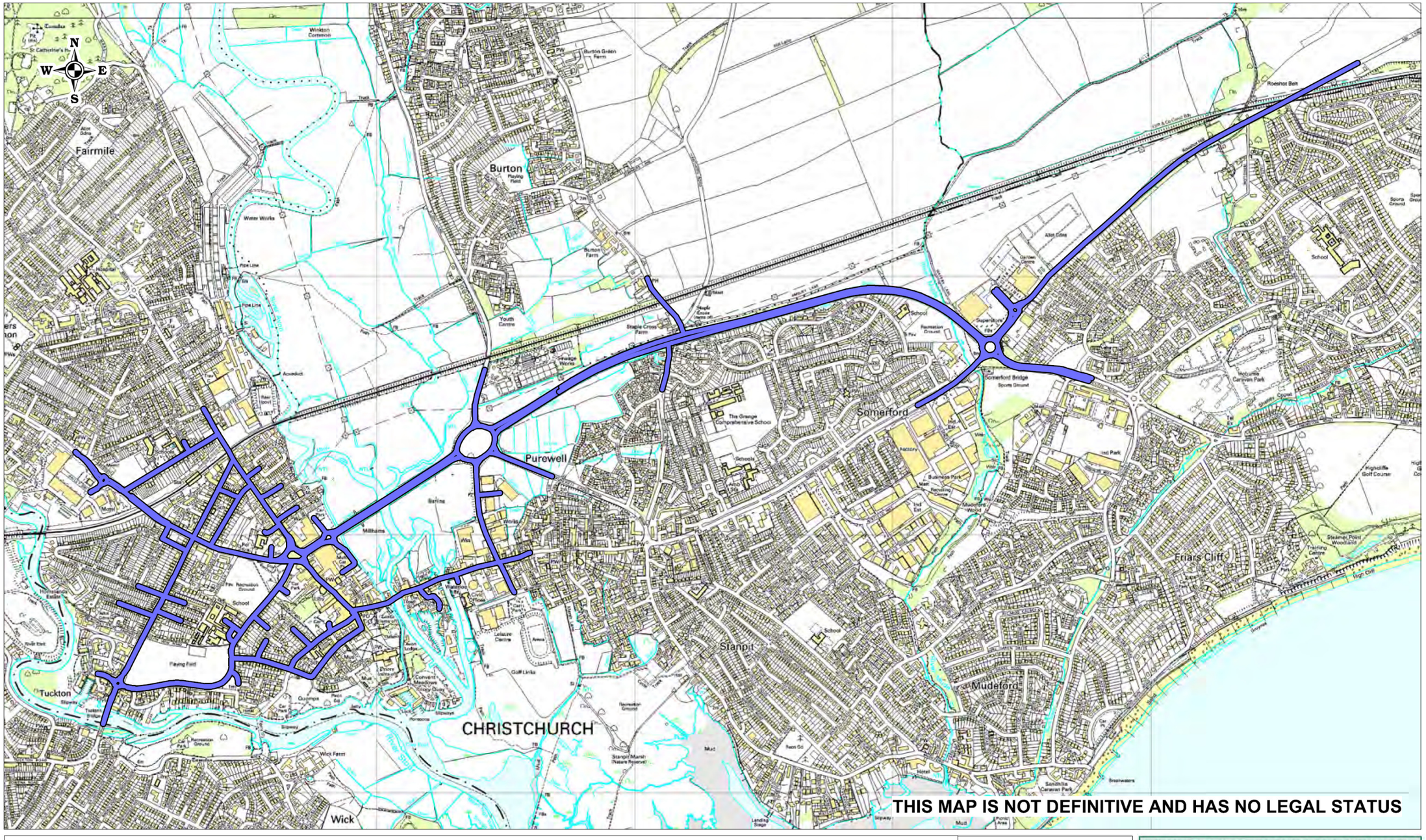

Figure 1 : Christchurch Paramics Network

Ref:
Date: 16/12/2010
Scale 1:19092
Drawn By: MGM
Cent X: 417171
Cent Y: 93522

GEOGRAPHICAL INFORMATION SYSTEMS
DORSET County Council