CAPITA SYMONDS

Lancaster and Morecambe College

OBJECTION BY LANCASTER AND MORECAMBE COLLEGE

Heysham to M6 Link

Highways Proof of Evidence by Ken Leighton BSc (Hons), CEng FICE, FIHT

Document Reference – LMC/KWL/1

June 2007

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Capita Symonds Limited
7 Swift Court
Scott Drive
Moss Lane
Altrincham
Cheshire
WA15 8AB

Tel: 0161 925 5900
Fax: 0161 928 0559

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1 EXPERIENCE AND QUALIFICATIONS

1.1 My name is Ken Leighton. I am an Associate Director with Capita Symonds. I have a BSc (Hons) degree in Civil Engineering from the University of Leeds. I am a Chartered Engineer, a Fellow of the Institution of Civil Engineers and a Fellow of the Institution of Highways and Transportation.

1.2 For over 30 years of my career I have worked on the design and construction of highways including trunk roads and motorways, both in the UK and overseas.

1.3 I am appearing at this Public Inquiry to give evidence on the transport and highway aspects of the scheme on behalf of the Lancaster and Morecambe College.

1.4 I have visited the site and surrounding area for the purposes of this inquiry.

2 SCOPE AND CONTENT OF EVIDENCE

2.1 My evidence considers the transport and highways implications of the road proposal in the locality of Lancaster and Morecambe College. I have not carried out a full critique of the County Council's Scheme but only looked at its localised effects.

3 OBJECTIONS

3.1 Localised College Impacts

3.1.1 Car Parking

3.1.1.1 The impact of the proposed scheme on the car parking provision at the College has been discussed in the proof of evidence of Mr. Tim Jones.

3.1.2 Construction Impacts

3.1.2.1 The Council has not presented any specific information regarding the proposed method, associated traffic management and timing of the construction either in general or with respect to the section of the road adjacent to the College, and therefore it is difficult to appraise the specific construction impacts in detail. However in the following paragraphs I identify some of the impacts which the College will suffer.

3.1.3 Mud and Dust

3.1.3.1 Dust is a common source of disturbance during construction and the control of dust is difficult. The proof of Mr David Leversedge deals with the impacts of the dust disturbance that will be created during construction.

3.1.3.2 Construction work frequently causes mud, concrete and debris to be tracked onto the highway and mud on roads is one of the main environmental nuisance problems arising from construction sites. The mud would pose a danger of slippage to pedestrians and cyclists or skidding to road vehicles.

3.1.3.3 I anticipate that the contract for the construction of the proposed road would include for requirements to minimise the spread of mud from the works. Whilst this is the correct approach, it is inevitable that policing this requirement cannot be undertaken all of the time and there are examples occurring regularly on projects where mud has been carried on to the public highway thereby creating a safety risk.

3.1.3.4 Mud may be drawn onto the following roads in the vicinity of the College:

i) A589 Morecambe Road.

ii) A683.

3.1.3.5 Mud drawn onto the highway and onwards into the College site, on either vehicles or footwear, will be present at the time when students and parents are making the decision whether they wish to enrol at the College. The evidence of Mr David Wood shows that the choice by parents and students to come to the College may be detrimentally influenced and as a result of this and other impacts of the road I think that he is right to be concerned about mud on the road and mud being carried into campus.

3.1.4 Disruption

3.1.4.1 During the construction of a major highway, it is good practice to ban construction vehicles from unsuitable public roads; this would include roads running through residential areas and those of "light" construction that could not carry the increased loading. As a result I consider that, until the bridge over the west coast main line railway is constructed, there is only one feasible access point to the south west portion of the proposed road and that is alongside the College, on the northwest side. The construction of the bridge over the railway will take some twelve to eighteen months and in that time fencing materials will have to be delivered to the south west section of the proposed road and materials for the college underpass and the Torrisholme Road underpass will need to be delivered. These will have to pass adjacent to and to the north west of the College, causing disruption throughout the working day. A large proportion of these lorry movements will be during the summer months when construction work is at its busiest.

3.1.4.2 In addition to the delivery of materials, construction plant would have to be taken to the site using the same access and this would mean not only additional deliveries but would pose a safety threat to students, staff and visitors attending the College. Any pedestrians arriving from Morecambe would have to cross the access to the construction site and all access to the reduced area playing fields will be across the construction site.

3.1.4.3 The construction of Scale Hall junction will involve removing the existing roundabout and replacing it with a signalised junction. As there are no suitable alternative routes for the traffic the existing road could not be closed so the construction will have to be undertaken whilst traffic flows through the junction. I anticipate that there would be substantial delays and disruption to road traffic, buses, pedestrians and cyclists whilst this work is undertaken. There will of necessity be changes in traffic management measures as the work proceeds and this will add to the problems. It is

probable that on some occasions there will be reductions in the number of lanes to allow the construction work to be done in safety, causing further delays and disruption.

3.1.4.4 I anticipate that initially a fourth arm will be added to the existing roundabout for use as a site access and this would continue until the junction re-construction was started. I assume that the construction of the junction would be in three main phases and that traffic would initially be diverted into a T-junction layout under temporary traffic signals. This would use the southern area of the circulatory carriageway as a two way carriageway whilst part of the junction is constructed and statutory undertaker's equipment relocated. This would cause substantial delays to all traffic as a result of using temporary traffic signals. I have been unable to locate any information on these delays and disruption in the Environmental Statement **(CD LCC 10)**.

3.1.4.5 It is probable that the above delays and disruption would occur in the summer months when the weather is more favourable for construction and traffic numbers tend to be less. This is also the time when pupils are deciding which College to attend and when enrolment takes place. As stated in Mr David Wood's proof of evidence, this delay and disruption, together with the construction work taking place to the northwest of the College may affect parents/pupils decision as to which college to attend.

3.1.5 Scale Hall Junction

3.1.5.1 In assessing the effect of the road on the College, I have taken the results of the traffic flow figures at face value and have not undertaken further analysis

3.1.5.2 The Environmental Statement (CD LCC 10) contains no information regarding the traffic impacts of the link road on the existing or proposed junctions in the vicinity of the scheme and the College in terms of the changes in capacity and junction delay. Journey time delays along specific routes have been considered but not delays at individual junctions. For example, our analysis of the Scale Hall junction shows that traffic would be delayed by an average additional 20 seconds per vehicle as a result of the proposed changing of the form of this junction from a roundabout to a signalised junction to accommodate the increased traffic flows.

3.1.5.3 The operational assessment of the Scale Hall junction has been undertaken for the 2025 design flows as provided by Lancashire County Council for the am and pm

peak periods. As these flows are for the average hour over the 3 hour peak period, a sensitivity test to allow for the peak within that period has been undertaken; this involved increasing the flows by 20% based on engineering judgement. The junction layout is as provided in the Lancashire County Council design information, and the junction has been modelled using the computer programme LINSIG, based on an optimisation of the cycle time and phasing. The results of this are shown in the tables in Appendix 1. The results within the average peak hour show that the junction will operate within capacity in the design year, but with an average delay per vehicle of around 30 seconds. This future scenario compares to the existing situation which operates as a roundabout and currently has average delays of less 10 seconds per vehicle. The introduction of the signals would therefore result in increases in the average delay.

3.1.5.4 The introduction of the proposed link road to the north west of the college will result in substantial changes to the traffic flows in the vicinity of the college. This is illustrated in the table below.

Scale Hall Junction: Traffic flows taken from ES figures 2.2.3 to 2.2.6 (AADT)				
Arm of junction	Do minimum 2010	Do something 2010	Do minimum 2025	Do something 2025
Proposed link road (NE) to the north west of the college	0	33,700	0	38,600
A683 Morecambe Road (SE)	32,300	26,200	33,100	27,700
A683 to Heysham (SW)	16,300	29,800	19,200	34,300
A589 Morecambe Road (NW)	19,600	23,900	20,100	25,000

3.1.5.5 With the exception of the A683 Morecambe Road, the table shows that substantial traffic increases are forecast for the approaches to the junction, as a direct result of

the construction of the proposed link road. To the north west of the college the traffic introduced as a result of the link road would be between 33,700 and 38,600 vehicles per day (AADT). To the south on the A683 the traffic would increase by between 13,500 (29,800 less 16,000) and 15,100 (34,300 less 19,200) vehicles per day (AADT) and on the A589 Morecambe Road the traffic is forecast to increase by between 22% (23,900 over 19,600) in 2010 and 24% (25,000 over 20,100) in 2025.

3.1.5.6 Whilst the traffic on the A683 Morecambe Road is forecast to reduce, the traffic figures of between 26,200 and 27,700 (AADT) are still substantial.

3.1.5.7 As a result of the increased traffic, access to the College will become more difficult for pedestrians, cyclists and road traffic; all will have to negotiate a busy and heavily trafficked junction to reach the College, with the associated safety implications. Depending on the origin of the student/staff member's journey, each person other than those approaching from the direction of Lancaster will have to cross one or more of Morecambe Road, the new link road and Heysham Road, all of which have substantially increased traffic as shown in the table above. Whilst it is reasonable to include a pedestrian crossing phase in the traffic signals this will only accommodate those pedestrians wishing to cross at the junction. Those crossing away from the immediate vicinity of the junction will have to contend with a greater volume of traffic with the resultant safety implications.

3.1.5.8 The impact of the increased traffic resulting from the proposed road on local junctions in the vicinity of the proposed Scale Hall junction is not given in the Environmental Statement. As an example, the increase in traffic on Morecambe Road will affect the performance of the Longton Drive / Morecambe Road / Homfray Avenue junction but this effect is not given in the Environmental Statement.

3.1.5.9 The plans for the proposed road show no provision of infrastructure works for public transport, specifically buses or for access to the proposed infrastructure. There are no lay-bys shown that could be used as bus stops, which will not encourage bus operators to provide suitable services.

4 CONCLUSIONS

4.1 Localised College Impacts

4.1.1 Construction Impacts

4.1.1.1 The Council has not presented any specific information regarding the proposed method, associated traffic management and timing of the construction either in general or with respect to the section of the road adjacent to the College, and therefore it is difficult to appraise the specific construction impacts in detail.

4.1.2 Mud and Dust

4.1.2.1 Construction work frequently causes mud, concrete and debris to be tracked onto the highway and mud on roads is one of the main environmental nuisance problems arising from construction sites. The mud would pose a danger of slippage to pedestrians and cyclists or skidding to road vehicles.

4.1.2.2 I anticipate that the contract for the construction of the proposed road would include for requirements to minimise the spread of mud from the works. Whilst this is the correct approach, it is inevitable that policing this requirement cannot be undertaken all of the time and there are examples occurring regularly on projects where mud has been carried on to the public highway thereby creating a safety risk.

4.1.2.3 Mud drawn onto the highway and onwards into the College site, on either vehicles or footwear, will be present at the time when students and parents are making the decision whether they wish to enrol at the College. The evidence of Mr David Wood shows that the choice by parents and students to come to the College may be detrimentally influenced and as a result of this and other impacts of the road I think that he is right to be concerned about mud on the road and mud being carried into campus.

4.1.3 Disruption

4.1.3.1 I consider that, until the bridge over the west coast main line railway is constructed, there is only one feasible access point to the south west portion of the proposed road and that is alongside the College, on the northwest side. This bridge will take some 12 to 18 months to construct and in that time fencing materials and materials for the college underpass and the Torrisholme Road underpass will need to be delivered to the site. These will have to pass adjacent to and to the north west of the College,

causing disruption throughout the working day. A large proportion of these lorry movements will be during the summer months when construction work is at its busiest.

4.1.3.2 Construction plant would also have to be taken to the site using the same access and this would mean not only additional deliveries but would pose a safety threat to students, staff and visitors attending the College. Any pedestrians arriving from Morecambe would have to cross the access to the construction site and all access to the reduced area playing fields will be across the construction site.

4.1.3.3 The construction of Scale Hall junction will involve removing the existing roundabout and replacing it with a signalised junction. I anticipate that there would be substantial delays and disruption to road traffic, buses, pedestrians and cyclists whilst this work is undertaken, particularly when the temporary traffic arrangements are under the control of temporary traffic signals. I have been unable to locate any information on these delays and disruption in the Environmental Statement **(CD LCC 10)**.

4.1.3.4 It is probable that the above delays and disruption would occur in the summer months when the weather is more favourable for construction and traffic numbers tend to be less. This is also the time when pupils are deciding which College to attend and when enrolment takes place. As stated in Mr David Wood's proof of evidence, this delay and disruption, together with the construction work taking place to the northwest of the College may affect parents/pupils decision as to which college to attend.

4.1.4 Scale Hall Junction

4.1.4.1 In assessing the effect of the road on the College, I have taken the results of the traffic flow figures at face value and have not undertaken further analysis.

4.1.4.2 The Environmental Statement (CD LCC 10) contains no information regarding the traffic impacts of the link road on the existing or proposed junctions in the vicinity of the scheme and the College in terms of the changes in capacity and junction delay. An analysis of the proposed Scale Hall junction shows that traffic would be subject to an average additional delay of 20 seconds per vehicle when compared with the roundabout form of junction.

4.1.4.3 The introduction of the proposed link road to the north west of the college will result in substantial changes to the traffic flows volumes in the vicinity of the college, with

increases on A589 Morecambe Road, the A683 to Heysham and of course the introduction of between 33,700 and 38,600 vehicles per day along the northwest of the college. The traffic on the A683 Morecambe Road is forecast to reduce, but the remaining traffic figures of between 26,200 and 27,700 (AADT) are still substantial.

4.1.4.4 As a result of the increased traffic, access to the College will become more difficult for pedestrians, cyclists and road traffic; all will have to negotiate a busy and heavily trafficked junction to reach the College, with the associated safety implications. Whilst it is reasonable to include a pedestrian crossing phase in the traffic signals this will only accommodate those pedestrians wishing to cross at the junction. Those crossing away from the immediate vicinity of the junction will have to contend with a greater volume of traffic with the resultant safety implications.

4.1.4.5 The impact of the increased traffic resulting from the proposed road on local junctions in the vicinity of the proposed Scale Hall junction is not given in the Environmental Statement.

4.1.4.6 The plans for the proposed road show no provision of infrastructure works for public transport, specifically buses and for access to the proposed infrastructure. There are no lay-bys shown that could be used as bus stops, which will not encourage bus operators to provide suitable services.