

**ID: 10030344/CCC/8**



**August 2015**

Examination of application by Highways England  
for an Order Granting Development Consent for  
the A14 Cambridge to Huntingdon Improvement  
Scheme

## **Matter 1 – Air Quality**

Examination Statement by  
Cambridge City Council

August 2015

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## Introduction

1. This statement sets out the response from Cambridge City Council in response to the Examiners second questions relating to Matter 1 (Air Quality).
2. This document needs to be read alongside the Examination Statements for Transport Assessment and Traffic Modelling submitted by Cambridge City Council (ID ref: 100300344/CCC/7 August 2015).
3. The documents referred to in this statement are listed in Appendix 1. Examination document reference numbers are used throughout for convenience.

## Overview – Cambridge City Councils earlier submissions

4. Chapter 8 of the ES concludes that ‘the scheme does not have a significant impact on air quality and does not affect the UK’s ability to achieve compliance with the EU air quality directive. However, Cambridge City Council feel there is sufficient uncertainty in the air quality assessment submitted to question the certainty of those conclusions.
5. There are a number of fundamental reasons for this uncertainty and these can be divided in to two distinct areas:
  - a. Issues relating to the CHARM 2, CHARM3 and 3A model traffic forecasting model and:
  - b. Assumptions made in the presented air quality assessment in the December 2014 Environmental Impact Statement and subsequent submissions
6. These issues are summarised below and the Air Quality issues explored in more detail with reference to the second set of questions raised by the examiners. Transport issues are addressed in detail in the Transport Assessment & Traffic Modelling Examination Statement. (ID ref: 100300344/CCC/7 August 2015).

### 1. Traffic forecasting:

- a. Traffic modelling presented in the ES and as amended by CHARM 3 and 3A is still subject to a number of uncertainties identified in our submission (ID ref: 100300344/CCC/7 August 2015)
- b. Traffic forecasts for the local road network in the north and centre of Cambridge are of particular concern to Cambridge City Council.

- c. All of the presented in the ES Air Quality modelled forecasting is based upon those traffic forecasts.

2. Air Quality Modelling:

- a. The geographic scope of the presented Air Quality Modelling is not as agreed with HA at preliminary meetings and does not show the potential impact on the Cambridge AQMA.
- b. Model outputs were only presented as a limited number discrete receptor locations whereas Cambridge City Council had requested that continuous contour plots of outputs were provided. Such contoured outputs would highlight the inadequacies of the verification work carried out as outlined below in c.
- c. Verification of the presented modelled outputs is inconsistent with three different verification factors used on the same modelled output for three discrete regions of the development area this suggests a wide range of uncertainty in the model outputs presented. This would not be considered best practice.
- d. The use of future year emission factors in the Air Quality modelling presented is not as agreed in preliminary meetings. LAs had requested that no future year emission reductions be used in forecast modelling as there is a considerable body of local and national evidence that these are unduly optimistic. Using current year emission factors was agreed to provide a worst case scenario output for air quality modelled forecasts. In the event a moderately optimistic set of future year emission factors has been used. Whereas, this may be justifiable, there is insufficient explanation of the choice of emission factors used in the December 2014 ES.
- e. The conclusion presented that there are likely to be no significant impacts on air quality as a result of the scheme in operation, are wholly dependent on future improvements to the emissions of vehicles using the new road and affected network to offset the considerable increases in traffic volume forecast.
- f. In areas affected by the proposed scheme which currently do not meet EU limit values for prescribed air pollutants, any increase in traffic volume has the potential to delay legal compliance, regardless of the rate of fleet emission improvements.

**Examining Authority second questions – Cambridge City Council response and comments**

<b>Author:</b>	Jo Dicks
<b>Question Reference:</b>	Q2.1.1

**Question:**

How would mitigation to manage air quality impacts during construction be secured through the Code of Construction Practice (CoCP) (APP-752) section 6 and Requirement 3 (now 4). (Ref Q1.1.4 and Q1.1.7 REP2-002).

**Response:**

It is considered that air quality impacts of the construction phase of the project will not significantly impact on Cambridge City's administrative area. Therefore, we have no comment to make on this question.

<b>Author:</b>	Jo Dicks
<b>Question Reference:</b>	Q2.1.2
<b>Question:</b>	
How would mitigation within the design of the scheme to ensure the impacts from operation are not significant, be secured? (Ref Q1.1.4 REP2-002)	
<b>Response:</b>	
<p>Currently HE are not proposing any post construction monitoring of pollutants of concern as the ES concludes that the scheme has no significant impacts on air quality in the operational phase, as such, no mitigation is proposed.</p> <p>If an unacceptable impact is subsequently shown by monitoring, a plan for mitigating the effects will need to be agreed with reference to the most recent Cambridge City Council AQAP and implemented.</p> <p>Cambridge City Council considers that there should be a binding s.106 requirement for monitoring and mitigation, including a requirement that HE should set aside funding for mitigation measures and that consideration is given to ensure that mitigation of air quality impacts is covered by requirement within the DCO.</p>	

<b>Author:</b>	Jo Dicks
<b>Question Reference:</b>	Q2.1.5
<b>Question:</b>	
<p>The applicant has indicated that post completion air quality monitoring is not necessary (comments on response to SCDC re Q1.1.1 REP2-002 (REP4-018)). What is the reasoning for this? Local Authorities may wish to comment?</p>	
<b>Response:</b>	
<p>There remain significant uncertainties and areas of disagreement with regards to the air quality modelling and assessment contained within the ES.</p> <p>Notwithstanding issues relating to the CHARM2, CHARM3 and CHARM 3A Transport model as far as local roads within Cambridge goes, Cambridge City Council do not have confidence in the conclusion that there will be no significant detrimental impact on local air quality, including the AQMA within Cambridge City.</p> <p>Increases in traffic volume along the existing transport corridor north of Cambridge and on certain Cambridge feeder roads are predicted to increase – this is acknowledged within the air quality assessment. Combined with the uncertainties over the modelling assessment, we are unable to agree with the results and conclusions of the assessment with any amount of certainty.</p> <p>It is vital that HE are able to demonstrate that the scheme, when in operation, is not having a significant detrimental impact on local air quality. Cambridge City Council consider that post-completion monitoring is essential for monitoring the impacts of the scheme and for aiding in the determination of suitable mitigation where appropriate.</p>	

<b>Author:</b>	Jo Dicks
<b>Question Reference:</b>	Q2.1.7
<b>Question:</b>	
How would agreement be reached with the local authorities regarding their request for post implementation air quality monitoring in locations where air quality is predicted to decline?	
<b>Response:</b>	
<p>Based on the lack of certainty over the results of the existing air quality assessment, Cambridge City Council believe that post completion monitoring should be carried out at strategic locations, to be agreed with the local authorities, in addition to areas currently forecast to experience a decline in air quality.</p> <p>Post-completion monitoring and mitigation should be secured through s.106 funding (to be set aside by HE) and should provide for a minimum of 5 years of post-completion monitoring and mitigation.</p>	

<b>Author:</b>	Jo Dicks
<b>Question Reference:</b>	Q2.1.14
<b>Question:</b>	
<p>Cambridge City Council has suggested that the applicant undertakes a review of the scheme proposals based on the approach set out in IAN185/15 further to its high level analysis set out in response to Q1.1.2 (REP2-002). The applicant has indicated that significantly different results would be unlikely and therefore does not propose to undertake a further review. Does either party wish to comment further?</p>	
<b>Response:</b>	
<p>HE submitted a "Response to the First Written Questions", dated June 2015, within which detail was provided for Q1.1.2 (relating to the use of IAN 185/15). The response describes the methodology used by HE to compare and contrast increases in emissions factors with and without consideration of IAN 185/15. HE conclude that a minimum increase in emissions by 68% would be required to impact on the modelled air quality output, with the largest increase in emissions being identified as 53% based on a limited analysis.</p> <p>Cambridge City Council considers that this approach is not a suitable replacement for re-assessing the air quality submission following IAN 185/15. It is clear that this interim advice note will give rise to significantly different outputs in some cases.</p> <p>We maintain that IAN 185/15 is an important guidance document and re-modelling air quality, taking account of this guidance, is the best available method to determine potential impacts. It seems inconsistent also, that HE <u>is</u> prepared to reassess Noise impacts following IAN185/15 but not Air Quality.</p>	

**ID: 10030344/CCC/9**



Examination of application by Highways England  
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## **Matter 10 – Noise and Vibration**

Examination Statement by  
Cambridge City Council

August 2015

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## Abbreviations

CCC	Cambridgeshire County Council
CCiC	Cambridge City Council
CRTN	Calculation of Road Traffic Noise
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges (HD213/11)
ES	Environmental Statement
IAN	Interim Advise Note
SCDC	South Cambridgeshire District Council

## Introduction

This statement sets out the response from Cambridge City Council in response to the Examiners Matter 10: Noise and Vibration and second set of examination questions. This should be read in conjunction with the council's submitted statement on transport modelling reference ID: 10030344/CCC/7.

<b>Author:</b>	Adam Finch
<b>Question Reference:</b>	Q2.10.2
<b>Question:</b>	
A new requirement to address noise mitigation has been included in the revised draft DCO submitted for Deadline 4 (Requirement no.12). Do local authorities and others wish to comment?	
<b>Response:</b>	
<p>On review of all supporting documentation and details, it is considered that the only remaining significant concern with regards to noise impacts on Cambridge City Council property is at the City Crematorium.</p> <p>Supporting evidence has been provided by HE within the Written Representations document dated July 2015 which confirms that a 3m high absorbant noise barrier will be included along the section of the A14 incorporating the Crematorium. Under the new Requirement 12 contained within the draft DCO, the Secretary of State must approve the specific details of noise mitigation measures prior to the progression of any part of the authorised development.</p> <p>We welcome the stipulation of pre-commencement approval. Additionally, sub-paragraph (2) states:</p> <p><i>"The written details referred to in sub-paragraph (1) must either reflect the mitigation measures included in the environmental statement or, where the mitigation proposed materially differs from the mitigation identified in the environmental statement, the undertaker must provide evidence with the written details submitted that the mitigation proposed would not give rise to any materially new or materially worse adverse environmental effects than those reported in the environmental statement taking into account the mitigation identified in it."</i></p> <p>This paragraph prevents a lower performance mitigation measure from replacing those reported within the ES.</p> <p>That said, the Requirement does appear to preclude local authorities from consultation on the detailed design of the acoustic mitigation measures which may become problematic for Officers at our neighbouring Authorities of HDC and SCDC.</p>	

<b>Author:</b>	Adam Finch
<b>Question Reference:</b>	Q2.10.5
<b>Question:</b>	
SCDC is seeking additional noise impact assessment and mitigation at sensitive locations including Orchard Park Primary School, Neighbourhood Play/Recreation Area, Cambridge Regional College and Cambridge City Crematorium/Huntingdon Road Cemetery. What progress has been made in addressing these concerns?	
<b>Response:</b>	
<p>Cambridge City Council has liaised with SCDC regarding this issue. It is understood that it is unlikely any further actions will be taken in response to this question. Of particular concern to Cambridge City Council is the potential impact on the City Crematorium.</p> <p>Highways England have provided further commentary within the document "Written Representations", dated July 2015. This concludes that the major source of noise impacting on the Crematorium is from the A14. In order to reduce the impact, a 3m high absorptive barrier is proposed, spanning a length of 290m and shielding the Crematorium from the A14. It is agreed that this will help to improve the noise climate within the grounds of the Crematorium.</p> <p>Highways England view that there will be no impact on the southern area of the crematorium including on the gardens of remembrance is not accepted. The new local access road will result in the introduction of a new noise source to the southern edge of the crematorium. The significance of the noise impacts from the new local access road remains unknown however we consider that the introduction of the access road (replacing open fields) has the potential to cause a significant impact upon the tranquillity and function of the crematorium gardens. Cambridge City Council therefore seek a proposal for mitigation from HE and consider that an absorptive acoustic barrier along the southern edge of the crematorium, to the height of the barrier proposed along the northern side (3m), would adequately address this issue.</p>	

<b>Author:</b>	Adam Finch
<b>Question Reference:</b>	Q2.10.8
<b>Question:</b>	
Please provide an update in relation to the detailed review of the implications of IAN 185/15 with regard to the noise assessment as referred to in Q1.10.4.	
<b>Response:</b>	
<p>HE submitted a "Response to the First Written Questions", dated June 2015, within which detail was provided for Q1.10.4 (relating to the use of IAN 185/15).</p> <p>Within the response, it was noted that a review of the implications of IAN 185/15 on the noise assessment was being undertaken and that a detailed assessment is to be provided which will suggest additional mitigation if and where required. However, no timescale was provided for this additional work.</p> <p>To date, we are unaware if the additional work has been completed or released. However, on receipt of the updated assessment, we will review the work and provide comments where necessary.</p>	

<b>Author:</b>	Adam Finch
<b>Question Reference:</b>	Q2.10.11
<b>Question:</b>	
A new proposed Requirement (12) does not provide for consultation with local authorities on the basis that noise issues are considered to be a technical trunk road design issue on which the applicant has the necessary expertise. Does the applicant and local authorities wish to comment?	
<b>Response:</b>	
The impact of noise from road traffic is not actionable under legislation provided to local authorities. Whilst Cambridge City Council is unlikely to be significantly impacted by noise from the scheme (construction and operation), we believe that it is essential that the relevant officers from local authorities are consulted on the design, suitability and implementation of the mitigation measures and are able to provide input and advice aimed at protecting the communities within their respective Districts.	



**August 2015**

Examination of application by Highways England for an Order Granting Development Consent for the A14 Cambridge to Huntingdon Improvement Scheme

**Matter 12 – Transportation & Traffic**

Examination Statement by  
Cambridge City Council

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## Abbreviations

AQMA	Air Quality Management Area
CCC	Cambridge County Council
CHARM	Cambridge to Huntingdon A14 Road Model
CSRM	Cambridge Sub-Regional Model
HE	Highways England
LIT	Local Impact Testing
WSP PB	WSP   Parsons Brinckerhoff

## **Introduction**

1. This statement sets out the third response from Cambridge City Council in relation to the Inspector's Matter 12 - Transportation & Traffic.
2. Specifically this statement sets out the response from Cambridge City Council in relation to the CHARM3A + Local Impact Testing (LIT) traffic model which has been used to assess the local highway impacts of the A14 Cambridge to Huntingdon improvement scheme. The associated 'Local Traffic Impact Report' (REP6-002), submitted by Highways England (HE) on 2<sup>nd</sup> August, is also referenced but full details of the City's review of this report will follow in the City's 2<sup>nd</sup> September response.
3. The September response will advise the examining authority of the final conclusions the City Council has reached on detailed impacts to the local road network and its level of confidence in the final traffic modelling of the local road network. This third statement therefore seeks to provide a summary of the City's current position based on a review of the CHARM 3A + LIT modelling and initial review of the 'Local Traffic Impact Report' (REP6-002).
4. The City Council has appointed consultants WSP|PB to review transport impacts of the A14 scheme on the local road network as predicted by Highway's England's modelling. This has in turn been informed through joint working with the County Council who have themselves appointed consultants SYSTRA to assist in understanding the changes in modelled local road impacts of the A14 scheme, within the CHARM3A and the CHARM3A + LIT models.
5. This document has been prepared by Adrian Hames, Technical Director at WSP | Parsons Brinckerhoff (WSP|PB), working on behalf of Cambridge City Council. He is the Manager of the WSP|PB's transportation team based in their Cambridge office and has a broad experience of Transport Planning in both the public and private sector. He is qualified to a degree level in Civil Engineering (BEng Hons) and Masters degree level in Transport Planning (MSc). He is a professional with more than 24 years' experience in the Cambridge area covering all aspects of Transport Planning and is a Member of The Chartered Institute of Highways and Transportation (MCIHT).

## Overview

6. Highways England has developed a traffic model (CHARM – Cambridge to Huntingdon A14 Road Model) which is based, in part, on the SATURN component of the County Council's CSRM (Cambridge Sub-Regional Model). Highways England has adjusted and developed the CSRM SATURN model to create a new bespoke traffic model for forecasting the impact of the proposed A14 Cambridge to Huntingdon improvement scheme on both the strategic and local road network.
7. The version of the model considered in this third representation is CHARM3A + LIT. This representation explores the City Council's summary commentary on the revised modelling work, based on the outputs from CHARM3A + LIT. This additional Local Impact Testing is the result of extensive consultation with HE, due to concerns with the degree of confidence in the modelled impacts of the A14 scheme on local Cambridgeshire roads, particularly in Cambridge City.
8. The County Council and City Council first identified a large number of these concerns in relation to the HE's first published version of the model, CHARM2. These concerns remained with the updated CHARM3A model, and therefore further consultation has been undertaken with HE, at additional cost to both the City and County Council, in order to seek key corrections in the model at the local highway level, to improve robustness and confidence in the models outputs, within the Local Impact Testing.
9. Based on this extended working with HE, CHARM3A + LIT now includes a number of corrections to the previous version of the model (CHARM 3A). These corrections resolve key issues in regard to the models ability to estimate the A14 Schemes impact on the local road network, and which the City and County Council note are essentially changes to the core model. In specific relation to Cambridge City these corrections are known to include:
  - Revisions to the allocation and distribution of base year demand. Errors were identified where demand had been allocated to the incorrect local zones within the model. These have been resolved in CHARM3A + LIT;
  - Inclusion of tidal permitted movements on Silver Street, Cambridge. This had not previously been reflected in the model but has been corrected in CHARM3A + LIT;
  - Revisions to future year infrastructure assumptions, i.e. the removal of uncommitted infrastructure schemes from the model such as the closure of Mill Road and East Road by 2035. These remained in CHARM 3A but have been removed in CHARM3A + LIT;

10. In addition to the above, the City and County Council asked HE to run a sensitivity test of using mean rather than median journey times on the existing A14 (Sensitivity Test 2). It was agreed with HE that this would be done by manipulating the speed flow curves to increase journey times. The effect of this test was a greater flow of traffic on local roads in the base year. The City and County Council is therefore of opinion that the CHARM3A + LIT + Sensitivity Test 2 is more representative of local road changes across the model as a whole.
11. The City's review of the CHARM 3A + LIT model has sought to identify whether the Council can have confidence that the model:
- Is representative of existing local network conditions
  - Is capable of producing robust and reliable predictions of the impact of the A14 on the local highway network
12. The City Council's conclusions in relation to these concerns are set out below.

### **Traffic Model Review Conclusions**

13. Although the City Council does still have some ongoing reservations, overall, based on the City and County Council's review of the CHARM 3A + LIT model and HE's 'Local Traffic Impact Report' (REP6-002), the following conclusions have been drawn:
- The CHARM 3A + LIT model is felt to adequately reflect logical route changes on Cambridge's radial routes, as a result of the A14 Cambridge to Huntingdon Scheme.
  - On balance the City Council is of the opinion that the modelling reported in HE's 'Local Traffic Impact Report' can be used to assess the traffic impacts of the A14 on the local road network, provided account is taken of the Sensitivity Test 2 output and subject to the model still requiring extensive operational testing at the detailed design stage. The reported impacts of the scheme on Cambridge City's local roads will be considered more fully within the City's 2<sup>nd</sup> September response.
14. Accepting the above, the City Council's ongoing concerns with the CHARM 3A + LIT model are as follows:

- Validation of local City roads in the base year model still fails to meet WebTAG thresholds of 85%. This brings into question confidence in the Air Quality Assessment and Highway England's EIA conclusion that there are no significant effects on the City's AQMA;
  - The CHARM3A + LIT model predicts traffic growth in the centre of Cambridge which the City Council believes goes against the high levels of congestion and delay commonly accepted as taking place. This is believed to be due to the level of congestion and delay modelled on these City Centre roads still not being fully representative of local conditions.
  - No details of mitigation has yet been suggested by HE in regard to the projected impacts of the A14 scheme on Cambridge City Roads, such as a 33% increase in traffic on Huntingdon Road, north of the Girton Road junction, as estimated by CHARM3A + LIT in 2035 (with scheme scenario).
15. Due to the remaining weaker levels of validation on local roads, and an outstanding concern at the potential lack of modelled congestion and delay within Cambridge City centre, this means that although the City Council is content that the modelling adequately represents route changes on Cambridge's radial roads, as a result of A14 Cambridge to Huntingdon Scheme, there is a lack of confidence in the predicted quantum of change. The City Council therefore requests a commitment from HE to monitoring and mitigation of the City's key roads to give assurance that the actual level of impact, occurring as a result of the scheme, can be identified and mitigated against, through funding by the HE.
16. The HE has provided a written commitment to monitoring and mitigation within the Local Impact Testing Report (Para 5.3.7 and 8.1.15 – REP06-002) and within their comments to the 'Written Representations Report 1: Local Authorities' (REP4-011), however this commitment, in relation to Cambridge City, is only in regard to the junction of A1307 Huntingdon Road / Girton Road. The City Council feel this is insufficient to provide confidence in the monitoring of potential future A14 scheme impacts.
17. Based on these remaining concerns, the City Council maintains a request that the examining panel secures the following matters through the DCO process.

**Matters that Cambridge City Council requests the Examining Panel to secure through the DCO process**

Traffic Flow and Air Quality Monitoring of Local City Roads:

18. The City Council requests Highways England agrees to implement an approved programme of monitoring of traffic flow and air quality on local roads within the City of Cambridge (The scope, specification and timing of implementation of which will have been agreed with the City and County Councils before commencement of the A14 improvement scheme construction). The local roads to be monitored shall include, in combination with others agreed through the monitoring methodology:
- a. A1303 Madingley Road;
  - b. A1307 Huntingdon Road;
  - c. B1049 Histon Road;
  - d. A1309 Milton Road;
  - e. B1047 Horningsea Road;
  - f. A1303 Newmarket Road;
  - g. Cambridge inner "ring road".
  - h. Storeys Way;
  - i. Girton Road;
  - j. Kings Hedges; and
  - k. Arbury Road.
19. The agreed monitoring outputs to be submitted to the City and County Councils annually from first implementation in a format to be agreed with the Councils. Within 2 months of annual submission of the outputs to the Councils, Highways England or its successors to meet with the Councils to review the monitoring outputs against the relevant outputs set out in the final DCO submission.
20. Highways England to agree to fund an agreed programme of transport works (which are not limited to road but across all modes of travel) if necessary to mitigate impacts of the A14 (to those set out in the final DCO), should monitoring suggest any greater adverse impacts as a consequence of the scheme than those projected by the CHARM model and associated TA.

Construction Impact Mitigation:

21. A Construction Monitoring scheme including locations, equipment specification, recording, timing of and length of provision, sharing of monitoring results, mitigation measures which is compliant with the provisions in Chapter 8 of the IAQM, Guidance on the Assessment of Dust from Demolition and Construction. (IAQM 2014) shall be presented and agreed with the City and County Councils prior to the commencement of scheme construction, including any enabling works. All agreed works and equipment shall remain in place, maintained in full operative order for the duration of the agreed monitoring period.

Operational Impact Monitoring:

22. An Operational Monitoring scheme including locations, equipment specification, recording, timing of and length of provision, sharing of monitoring results and any mitigation measures shall be presented and agreed with the City and County Councils prior to the commencement of scheme construction. All agreed works and equipment shall remain in place and be maintained in full operative order thereafter.