

**A14**  
**Cambridge to Huntingdon  
improvement scheme**  
Development Consent Order Application

HE/A14/EX/265

**TR010018**

HE/A14/EX/265

Air Quality Monitoring Statement

November 2015



## **A14 CAMBRIDGE TO HUNTINGDON IMPROVEMENT SCHEME AIR QUALITY MONITORING UPDATE STATEMENT**

1. This document sets out Highways England's position on air quality monitoring at Deadline 15. This update statement has been agreed by Cambridge City Council, also acting on behalf of South Cambridgeshire District Council and Huntingdonshire District Council.

2. Throughout the examination Highways England's technical consultants have maintained the position that post-construction air quality monitoring is neither appropriate nor necessary – see, for example, Appendix 7 of Highways England's submissions following the Issue Specific Hearings in September 2015 (applicant reference: HE/A14/EX/153; PINS reference: REP10-037). The assessment and modelling undertaken to date are robust, and show that the scheme is low risk for air quality impacts and will not have any significant adverse effects on air quality. Highways England stands by these submissions.

3. The purpose of this note is to:

- I. respond to the various questions raised by Mr Jo Dicks of Cambridge City Council in his letter of 30th October 2015 (PINS reference REP13-053); and
- II. update the wording of the requirement in Schedule 2 to the draft DCO following further discussions between the parties.

4. Cambridge City Council on behalf of 3 local authorities (South Cambridgeshire District Council; Huntingdonshire District Council and Cambridge City Council) raised some points of further clarity, following on from the letter of the 29th October from Highways England to the local authorities (the wording of which is reflected in the document with applicant reference: HE/A14/EX/211; PINS reference: REP13-031 submitted by Highways England at Deadline 13).

These points are set out in Cambridge City Council's submissions at Deadline 13 (PINS reference: REP13-053) as follows:

- A. *"There is no reference to the specification for monitoring set out in our joint submission at Deadline 10 or reference for the monitoring to be agreed with the local authority and therefore there is no reference to quality control and assurance or audit of the monitoring or data produced. Monitoring could end up being inadequate in terms of quality. The monitoring equipment and results need to be independently audited and quality assured as is the case with statutory air quality monitoring.*
- B. *The link to mitigation in the event of future breaches of air quality standards is very vague and only commits to a discussion of mitigation with the local authority. This is unlikely to be adequately robust to secure appropriate mitigation."*

### **Highways England Response**

#### **A. Clarification on Monitoring Equipment and Quality Assurance Procedures**

The local authorities set out their suggestion for a possible specification for the air quality monitoring equipment, which was appended to the 'joint statement of common ground: air quality monitoring and mitigation' (dated 28th September 2015 – PINS reference: REP10-031). The appended document was their suggestion for a monitoring specification in response to an ExA request and was not part of the joint statement of common ground between Highways England and the local authorities.

For clarity, Highways England's air quality monitoring proposal (in respect of particulate matter, NO<sub>x</sub> and NO<sub>2</sub>) will be provided by Highways England in the two locations requested by the local authorities:

- 1) automatic monitoring at, or close to, the historic South Cambridgeshire District Council monitoring location close to Bar Hill; and
- 2) automatic monitoring at, or close to, the junction of Histon Road and Huntingdon Road in the city of Cambridge.

Highways England will also provide diffusion tube monitoring at 8 locations sought by Huntingdonshire District Council as identified in previous submissions.

#### Particulate Matter

We bring to the Examining Authority's attention air quality monitoring for PM10 and PM2.5 undertaken by the local authorities, which has clearly demonstrated concentrations substantially below the statutory air quality limit values for at least the last 5 years. Defra, in their reporting to the European Commission has also identified that zones and agglomerations around the scheme are compliant with respect to PM10 Limit Value as set out in the Directive on ambient air quality and cleaner air for Europe (2008/50/EC) [hereafter referred to as the Air Quality Directive]. This view has been accepted by the European Commission.

Given the above position with respect to PM10 and PM2.5, Highways England will be undertaking air quality monitoring using a BAM-1020 continuous particulate matter monitor, or similar. The monitors will be MCERT certified, capable of monitoring both PM10 and PM2.5 with data acquisition capability and meeting the needs of the Air Quality Directive.

#### Nitrogen Dioxide

Automatic monitoring for NO<sub>x</sub> and NO<sub>2</sub> will be undertaken to the following specification:

- The analysers will use chemiluminescence detection, which is the European reference method compliant to ISO 7996 & CEN EN 14211:2005
- The cabinets will be suitable for urban roadside and kerbside monitoring
- All monitoring stations will include the following ancillary equipment:
  - Comprehensive internal data logging with programmable averaging periods
  - Air conditioning unit and cover
  - Calibration gas cylinder and gas for operation over life of contract
  - GSM Modem (including SIM card and airtime for duration of contract)

In support of reducing the cost of running the station and in line with good Health and Safety practice all stations will have:

- auto-zero with continuous correction for zero drift, including the ability to self-zero and self-span from a calibration gas; and
- long life sample filters capability (to remove the requirement for monthly visits so that the sites can be visited on at least six monthly intervals).

#### Nitrogen Dioxide Diffusion Tubes

Monitoring for NO<sub>2</sub> by diffusion tubes will be undertaken to the following specifications:

- The sample media will be 20% TEA in water
- The samples will be located and managed following the advice set out in Defra's air quality technical guidance issued from time to time
- The sample will be deployed and exposed for approximately 4 weeks / calendar month, where after they will be collected. (*The sampling regime is anticipated to be in line with Defra's diffusion tube calendar*)
- The samples will be analysed by a UKAS accredited laboratory for this procedure
- Results will be issued by the laboratory on a monthly basis.
- Where there is no co-location of diffusion tubes elsewhere in the local authority borough for the same accredited NO<sub>2</sub> diffusion tube supplier, then 3 tubes should be co-located with an automatic NO<sub>2</sub> monitor.

Highways England will purchase, own and operate all the monitoring equipment.

#### Civils and Power

The sites put forward by the local authorities for the automatic monitoring stations are not within Highways England ownership.

As part of the joint collaboration with the 3 local authorities, Highways England would expect the relevant local authority to support the obtaining of necessary planning consents/approvals if required and to provide support in facilitating the installation of the monitoring equipment at their own cost.

### Maintenance and Quality Assurance

Highways England deploys a range of air quality monitoring equipment across its network where appropriate and justified on a case by case basis. This is operated to a suitable quality standard as Highways England is dependent on the information to inform both its scheme assessments and the state of air quality alongside the network at those locations.

Highways England operates monitoring equipment and quality procedures in line with Defra's published air quality guidance and works with appropriately recognised and accredited air quality monitoring companies.

Highways England will work with its suppliers to provide a call out service in line with its standard terms and conditions to ensure that technical faults are resolved as soon as possible.

Highways England employs air quality specialists who have a wealth of experience in auditing and quality assuring measured concentrations and also work with air quality specialists from its supply chain to peer review monitoring data. Highways England will undertake independent third party quality assurance/quality control audits of the equipment and monitoring data for the duration of the monitoring to be agreed with the local authority.

### Proposed Siting of the Monitor at the Junction of Histon Road and Huntingdon Road

Highways England's air quality specialists have reviewed the location proposed for the air quality monitoring station by Cambridge City Council. It is their opinion that at this location given the complexity of the junction and the range of traffic movements from a number of roads that it will not be possible to determine what impact the A14 would specifically have in this location.

Recognising the concerns of the local authority about the potential contribution of the A14 scheme to air quality issues at this junction, Highways England would propose that the air quality monitoring station is located further along Huntingdon Road back towards the A14. This will provide a greater opportunity to detect any impacts that may be attributable to the operation of the A14 Scheme and consequently at that location and to those properties at the junction. In addition the Air Quality Directive states that for consideration of assessing against European Union Limit Values that monitoring should not be installed within 25m of a junction.

Highways England is happy to work with Cambridge City Council to find an alternative monitoring site along Huntingdon Road.

## **B. Mitigation**

Highways England's consideration of the need for any future mitigation is guided by the National Policy Statement for National Networks, and relevant domestic and European air quality legislation.

At this time it is not possible to specify what the relevant mitigation interventions could be, if indeed any are required (which Highways England maintains is very unlikely to be the case). Where it is clearly identified that there are exceedances of the European Union Limit Values and worsening can be unequivocally attributed to the operation of the A14 Scheme, work would need to be instigated to determine the specific sources and to identify appropriate solutions. Highways England would work with the relevant local authorities to develop and, obtain approval from the Secretary of State and implement the appropriate mitigation solution(s) in accordance with the wording of the requirement, as set out below.

Highways England recognises that there may be 3rd party or local authority developments that currently or in the future are granted consent. This may lead to increases in traffic flows along local authority and / or Highways England's network. There is therefore the potential that changes in air quality monitored at the monitoring locations cannot all be attributed to the development and operation of the A14 scheme. As part of any analysis and, where necessary, appropriate and reasonable, a subsequent mitigation package will need to be considered and where necessary Highways England would expect the local authority to seek appropriate mitigation measures from those 3rd party or local authority developers to mitigate the worsening and support attainment of the EU Limit Values rather than from Highways England.

5. In light of the above, Highways England has proposed an amended Requirement that is included in Schedule 2 to the revised draft Development Consent Order which will be submitted at Deadline 15:

***Highways England's Proposed Amended DCO Requirement Air Quality Monitoring and Mitigation***

1.—(1) No part of the authorised development must commence until the undertaker has installed—

- (a) continuous air quality monitors in respect of oxides of nitrogen and fine particles at PM10 and PM 2.5 fractions at or close to—
  - (i) the junction of Histon Road and Huntingdon Road in the city of Cambridge to be agreed with Cambridge City Council; and
  - (ii) the historic South Cambridgeshire District Council monitoring location close to Bar Hill to be agreed with South Cambridgeshire District Council; and
- (b) diffusion tube monitors in eight locations to be agreed with Huntingdonshire District Council in Huntingdon, Brampton, Fenstanton, Alconbury, Offord Cluny and Hilton,

and the monitors have subsequently been operated by the undertaker so the data covering an uninterrupted period of at least 2 months has been obtained by the undertaker.

(2) The specification for installation, operation and data provision must be agreed in writing with the relevant council prior to the commissioning of monitoring.

(3) The undertaker must operate the monitors installed under sub-paragraph (1):

- (a) during the construction of the authorised development and for a period of at least three years from the opening of the authorised development for public use, and until such time that the monitoring shows a continuous period of 12 months with no exceedances of national air quality objectives or European Union limit values for the pollutants monitored, providing that the exceedance is caused by the authorised development;
- (b) in line with guidance on air quality monitoring issued by the Department for Environment, Food and Rural Affairs from time to time; and
- (c) in each case, in accordance with the specification for installation, operation and data provision prepared under sub-paragraph (2).

(4) The relevant council must support the undertaker where possible in facilitating the installation of the air quality monitoring equipment to be operated by the undertaker under sub-paragraph (1).

(5) During the time period mentioned in sub-paragraph (2)(a)—

- (a) the undertaker must make all data obtained from the monitors available to the relevant council; and
- (b) each relevant council must supply to the undertaker all air quality monitoring data obtained from its existing air quality monitors on an annual basis.

(6) If, following analysis by the undertaker in consultation with the relevant council of the monitoring data mentioned in sub-paragraph (4), it reasonably appears that the authorised development has materially worsened air quality such that there are exceedances of national air quality objectives, or European Union limit values for the pollutants monitored, the undertaker will discuss and agree with the relevant council on a scheme of mitigation, which must be submitted to the Secretary of State for approval.

(7) Before considering whether to approve the scheme of mitigation, the Secretary of State must consult the relevant council taking in to consideration any local air quality action plans adopted by the council as part of its local air quality management duties.

(8) The scheme of mitigation approved under sub-paragraph (5) must be implemented by the undertaker.