

From: Andrew Scott Clark, Director of Public Health  
To: Barbara Cooper, Corporate Director of Growth, Environment and Transport  
Date: 14<sup>th</sup> March 2016  
Subject: **Proposed Response to the Highways England Consultation on proposed route options for a new Lower Thames Crossing and public Health impact**

In forming our view Kent Public Health team has sought advice from experts in Public Health England (PHE). This is because this scheme is likely to be a nationally significant infrastructure project (NSIP) and as such PHE will (like the Public Health team) be a statutory consultee in the process. This proposal is yet to appear on the Infrastructure Planning website and in time it will be important that a comprehensive impact analysis on health in partnership with PHE is undertaken. In general any road development should seek to improve air quality and every possible effort should be to secure improvements in local air quality related to this development, particularly in areas currently exceeding the air quality standards and designated as Air Quality Management Areas.

Due to time constraints four main documents have been briefly reviewed, namely: 'fact sheet' from Highways England (water, air, noise and vibration), 'Pre-Consultation Scheme Assessment Report (Volume 1)' and 'Pre-Consultation Scheme Assessment Report (Volume 6: Environmental Appraisal)' both from High ways England, cabinet report on this consultation.

The **fact sheet** as part of consultation document which suggests that "after the preferred route is decided, we would carry out further air quality monitoring and modelling to assess the effect on both people and sensitive biodiversity sites".

It is acknowledged that '**Pre-Consultation Scheme Assessment Report (Volume 1)**' suggests that Route 2, 3, and 4 are preferred. In terms of air quality Section 5.2.8 states that "properties within the vicinity of Routes 2, 3 and 4 would not experience exceedances or a risk of exceedances as they are predicted to be well within EU limits. Generally levels at the properties that are closest to Routes 2, 3 and 4 are in the order of 20 µg/m<sup>3</sup> in the Without Scheme scenario and in the With Scheme scenario levels decrease or increase by only 1 µg/m<sup>3</sup> (recognising that the EU limit value is 40 µg/m<sup>3</sup>)."

'**Pre-Consultation Scheme Assessment Report (Volume 6: Environmental Appraisal)**' includes the appraisal of air quality for each of the routes. A summary of the air quality impact on selected receptors for Route 1 is covered in Table 3.1; the results indicate a worsening of air pollution and the applicant notes that ". throughout the study area in this location there would be a worsening in air quality with Route 1 due to increases in traffic flow and congestion." Section 4.6 provides a summary of the air pollution assessments undertaken for Routes 2, 3, and 4, with selected receptor results summarised in Table 4.1 and the applicant states that " The modelling has shown that no properties within the vicinity of routes 2, 3 or 4 would exceed or be at risk of exceeding the EU limit value". The document also notes that with Route 2, 3, and 4 the area around the A282 would experience an improvement in air quality. It is noted that the results at receptors are only provided for a small number of receptor locations. Details of the predicted pollution levels as a result of the scheme across the range of receptors along the route or in the wider area (as highlighted on maps within this document) are not presented/provided.

## Public Health Response

1. Short-term exposure to high levels of various air pollutants can cause a range of adverse health impacts including exacerbation of asthma, effects on lung function, increases in hospital admissions for respiratory and cardiovascular conditions and increases in mortality. Long term exposure to air pollution also increases mortality risk particularly long term exposure to particulate air pollution<sup>1</sup>.
2. Public Health response to the fact sheet is that in-depth information should be used to make an informed decision on route choices. It appears that initial screening did rule out option 1, however, Kent Public Health would urge Highways England to undertake an impact assessment using the current data to develop an understanding of the air quality issues for population in the area for other route options . Only then mitigating actions can be developed.
3. Based on the information provided routes 2,3 and 4 appear preferable from an air pollution perspective. However, it should be cautioned that although Highways England has undertaken some quantification of impact, this appears to be an initial screening assessment (using the Design Manual for Roads and Bridges (DMRB)) that considers basic fleet make-up/traffic speeds to predict nitrogen dioxide (NO<sub>2</sub>) pollution levels. There are currently gaps in the scheme design details (e.g. whether the crossing would be a bridge and/or tunnel) that will influence air pollution along parts of the routes, and more detailed consideration of traffic composition and traffic speed would need to be considered further.
4. It is unclear whether other development proposals/consented development that could influence traffic flows in the areas of the route options have been considered (e.g. large residential or industrial developments). It would be expected that more detailed assessments will need to be undertaken that consider the routes in more detail together with the potential for impacts during construction (e.g. potential to increase congestion that could lead to worsening air quality).
5. From Public Health perspective any increase in exposure to NO<sub>2</sub> and other air pollutants such as particulate air pollutants (e.g. PM<sub>10</sub> and PM<sub>2.5</sub>) in locations where the standards are currently exceeded, or where a predicted increase in exposure would result in a new exceedance, should be viewed as undesirable and avoided if practicable. Whilst NO<sub>2</sub> is a key traffic related pollutant, it is expected that Highways England must consider other pollutants (e.g. PM<sub>10</sub>/PM<sub>2.5</sub>) within the assessments completed, given the evidence of long term impact on health.
6. In addition to air pollution modelling, it will be expected that monitoring is done before and after development: before to establish background/current concentration and post development for the assessment of actual air quality impacts arising from the scheme on sensitive receptors, to allow for the validation of the modelling methodology and provide valuable baseline data that could be used in the assessment of potential air quality impacts from similar road schemes in the future.

7. The comments above are based solely from an air pollution perspective but there are wider environmental aspects that could impacts on public health such as noise which should also be considered and mitigated through design and build.

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<sup>i</sup> Estimating Local Mortality Burdens associated with particulate Air Pollution. Public Health England. Published April 2014. Gateway Reference 2014016.