
To: [REDACTED] Joint Air Quality Unit

Date: 27th September 2019

From: Coventry City Council

Subject: Additional documentation – Preferred Option (DS13L, September 2019)

1 Purpose of the Note

- 1.1 Further to the Ministerial letter dated 25th March 2019, and as required by the accompanying Ministerial Direction (dated 26th March 2019), Coventry City Council [CCC] submitted additional modelling evidence on the Coventry Local Air Quality Action Plan [CLAQAP] to the Joint Air Quality Unit [JAQU] on 14th June 2019. As agreed with the Head of JAQU at a meeting on 30th May, CCC has also submitted further supporting documentation for the updated CLAQAP on 28th June 2019. Further discussions resulting in submission of revised information were ongoing in July and August. This document provides a summary of the Preferred Option that achieves the objective of reducing NO₂ levels within Coventry below the legal limit in the shortest possible time, in line with the Direction.
- 1.2 This summary note is supported by several methodology reports. Please refer to the following for more detailed information:
- Air Quality Modelling Methodology Report (AQ2) outlines the methodology for, and inputs to, the air quality modelling. (issued 27th September 2019)
 - Air Quality Modelling Report (AQ3) provides detailed results (issued 27th September 2019)
 - Local Plan Transport Model Validation Report (T2) – 27th September 2019.
 - Local Plan Transport Modelling Methodology Report (T3) – 27th September 2019.
 - Local Plan Transport Modelling Forecasting Report (T4) – 14th June 2019.
 - [REDACTED]
 - [REDACTED]
 - Economic Appraisal Summary of Options 13I and 14 – September 2019 [2nd addendum to the Economic Appraisal Methodology Report - E1].
 - Distributional Impacts 2nd addendum to OBC Distributional Impact Appraisal – September 2019.
 - [REDACTED]

2 Information/Background

- 2.1 Several updates and improvements have been made to the air quality modelling approach compared to that employed prior to the submission of the OBC addendums in June 2019. These revisions have been made in the time available since the end of June, addressing comments from JAQU, and following a meeting with [REDACTED], and following a

meeting with JAQU technical leads regarding our preferred option, and including secondary receptors revisions include (full details in T3 and AQ2)

- A revision to the traffic model to add an additional connector to a node representing a car park; (See T2, 3)
- A revision to the traffic model to add in a public realm scheme (funded separately) outside Ikea; (See T2, 3)
- Replacing the small CAZ D included in DS13c with traffic management restrictions;
- Renewed focus on compliance of secondary receptors.

2.2 To ensure scenarios are comparable, each of the scenarios below have been run through the updated model. A summary of headline forecast compliance years is detailed below, with full details of receptors included in AQ3.

2.3 Do Minimum

- Following revisions detailed in 2.1, in the absence of any action, compliance with the annual mean NO₂ EU limit value is not projected to be achieved until 2028 for one link (Holyhead Road - Census ID 7647).

2.4 OBC Benchmark (DS2b)

- Following revisions detailed in 2.1, and with more conservative upgrade assumptions (in line with Birmingham) applied for the Benchmark CAZ D scenario, compliance with the annual mean NO₂ EU limit value is projected to be achieved in 2024 for one link (Holyhead Road - Census ID 7647). The EU Limit Value is not modelled to be exceeded in 2021 adjacent to any other PCM links.

2.5 It should be noted that, even with the updates and revisions detailed in 2.1, neither of the modelled scenarios outlined above achieve compliance with the annual mean NO₂ EU Limit Value by 2023, as required by the Direction issued on 26th March. Therefore, the additional modelling work has focussed on identifying alternative packages of measures that, based on the modelling evidence, would achieve compliance by 2023 or earlier.

3 Benchmark + additional measures (DS14)

3.1 As required by the Ministerial Direction an additional scenario, including a wider Clean Air Zone Category D [CAZ D], along with additional measures, has been assessed. The proportion of compliant and non-compliant vehicles, behavioural responses, fleet composition and euro composition were modelled as per the Benchmark CAZ detailed in Section **Error! Reference source not found.** in AQ3.

3.2 Following revisions detailed in 2.1, additional measures were combined with the OBC Benchmark CAZ D detailed in 2.4. In this scenario, compliance with the annual mean NO₂ EU Limit Value is projected to be achieved in 2021 for all PCM links. Further details on secondary receptors can be found in AQ3.

3.3 The additional measures focus on facilitating the removal of traffic from the eastern section of Holyhead Road, where observed and modelled NO₂ levels are at their greatest, by providing enhanced routes into the city centre to the north and south of Holyhead Road. Modal shift for local journeys will also be encouraged through the improvement of cycle and pedestrian routes along these corridors. The specific measures are listed below, whilst T2 and T3 includes a summary table setting out how these measures have been accounted for in the traffic model:

- Capacity improvements on the B4106 through Spon End (Junction with Hearsall Lane) (to allow for traffic transfer from the A4114 Holyhead Road onto the B4106 Allesley Old Road route into the city from the west as part of the dynamic traffic management approach);

- Capacity improvements at Junction 7 on the Ring Road (A4053 / B4106) to further support additional traffic rerouting on the B4106 through Junction 7 rather than Junction 8 (Holyhead Road), and to enhance the walking and cycling routes from Spon End into the city centre, providing the capability to encourage more local journeys to be made on foot or by bike.
 - Opening of Upper Hill Street onto the A4053 Ring Road, giving left in / left out access to the Ring Road via the anti-clockwise on-slip road at Junction 8, thereby allowing traffic from the Coundon area of the city to access the Ring Road without using the A4114 Holyhead Road.
 - Closure of Barras Lane between the A4114 Holyhead Road and Coundon Road / Upper Hill Street, allowing the removal of the traffic signalled junction of Holyhead Road and Barras Lane. Traffic currently using Barras Lane would access the Ring Road via the re-opened Upper Hill Street, as outlined above.
 - Peak time traffic restrictions on the eastern section of the A4114 Holyhead Road on the approach to Junction 8 (Inbound in AM peak (assumes 3 hour period), Outbound in PM peak, (assumes 3 hour period)).
 - Construction of a high-quality segregated cycle route linking Coundon with the city centre along Coundon Road and Upper Hill Street. This key addition to the Coventry cycle network would facilitate modal shift from car to bike for local journeys along the Holyhead Road corridor by providing an attractive segregated route serving three schools as well as linking residential areas with the commercial heart of the city. This will, in tandem with the other measures outlined above, facilitate the reduction in traffic on the eastern section of the A4114 Holyhead Road.
- 3.4 The cost of implementing this scenario has been estimated to be £46 million, whilst a further £4 million has been assumed for de-commissioning costs associated with the removal of the charging infrastructure for the CAZ D. The operating and maintenance costs associated with this scenario have been estimated to be £13.1 million. This gives a total cost for the scenario of £63.13 million. Note, no detailed Clean Air Fund requirements have been provided as this is not CCC's preferred option, however measures required to mitigate the impact of the CAZ would be of significant cost given the scale and range of people affected and therefore would significantly increase the overall costs of this option.
- 3.5 The CAZ D will, of course, generate revenue derived from the charges applied to non-compliant vehicles entering the zone. The financial modelling undertaken for the scenario has identified that revenue is forecast to be earned from the introduction of the CAZ D in 2021 through to 2024. No revenue is forecast to be generated after this date. Over these four years, the financial model predicts that the total revenue generated by the CAZ D would be £61.7 million.
- 3.6 In summary, the cost and revenue forecasts for Option DS14 indicate that the costs associated with setting up and operating the CAZ D (plus additional measures) scheme are greater than the revenue it generates. Funding is therefore essential to ensure that air quality compliance can be achieved. The Technical Note for the Financial Modelling describes the methodology behind these cost estimates, with the Financial Model itself being included as an Excel spreadsheet.
- 3.7 The Distributional Impacts Appraisal has been updated, as set out in the Addendum that has been prepared alongside this Summary Note. With regard to Scenario DS14, this concludes that the option has a moderately beneficial air quality impact for low income groups and children, but has a moderately disbeneficial impact on accessibility for a wide range of social groups, and a moderately disbeneficial impact upon low income groups and upon small businesses in relation to affordability.
- 3.8 The Economic Appraisal for Option 14 has been undertaken as set out in the Economic Appraisal Summary Note, with the economic models have been re-run to reflect the updated scenario. This indicates that the Net Present Value for Option 14 would be -£86.4

million, (not including any potential CAF) indicating that this scenario offers very poor value for money.

4 Preferred Option (DS13L)

- 4.1 As has been set out in the Council's OBC submission, it is the Council's firm view, backed by the previous work undertaken for the Social Distributional Impact assessment, that a wider CAZ D, as outlined above, would have significant economic and social dis-benefits for the city that would negate the benefits of achieving compliance with the annual mean NO₂ EU Limit Value. However, the revised preferred option submitted in June 2019 contained a small CAZ D that JAQU felt was not appropriate. Further work has been undertaken to replicate the impact of that element through the application of traffic management measures. It was noted during this refinement that there was a solitary exceedance at a secondary receptor, and therefore further measures have been added to address this (Foleshill Road).
- 4.2 In this scenario, compliance with the annual mean NO₂ EU Limit Value is projected to be achieved in 2021 for all PCM and secondary receptor links. Further details on receptors can be found in AQ3.
- 4.3 The year of compliance for this scenario is the same as that for the benchmark scenario described above. As this is the case, it is the Council's view that the scenario with the least detrimental economic and social impact upon the city's residents and business community should be taken forward as the Preferred Option. Based on the Social Distributional Impact assessment, the Council considers that a traffic management aligned approach, allied with the additional measures outlined below, is the scenario that best combines the achievement of air quality improvement objectives whilst protecting the social and economic wellbeing of Coventry.
- 4.4 The additional measures focus on facilitating the removal of traffic from the eastern section of Holyhead Road, where observed and modelled NO₂ levels are at their greatest, by providing enhanced routes into the city centre to the north and south of Holyhead Road. Modal shift for local journeys will also be encouraged through the improvement of cycle and pedestrian routes along these corridors. Measures are also focussed on Foleshill Road which is a secondary receptor exceedance.
- 4.5 The specific measures are listed below, whilst T2 and T3 includes a summary table setting out how these measures have been accounted for in the traffic model.
- 4.6 As previously noted, Holyhead Road has the largest current exceedance and therefore requires specific treatment. This is mainly focused on the relocation of traffic and queuing away from the air quality hotspot at the eastern section of the route, and comprises the following traffic management and infrastructure projects:
 - Capacity improvements on the B4106 through Spon End (to allow for traffic transfer from the A4114 Holyhead Road onto the B4106 Allesley Old Road route into the city from the west as part of the dynamic traffic management approach);
 - Capacity improvements at Junction 7 on the Ring Road (A4053 / B4106) to further support additional traffic rerouting on the B4106 through Junction 7 rather than Junction 8 (Holyhead Road), and to enhance the walking and cycling routes from Spon End into the city centre, providing the capability to encourage more local journeys to be made on foot or by bike.
 - Opening of Upper Hill Street onto the A4053 Ring Road, giving left in / left out access to the Ring Road via the anti-clockwise on-slip road at Junction 8, thereby allowing traffic from the Coundon area of the city to access the Ring Road without using the A4114 Holyhead Road.

- Closure of Barras Lane between the A4114 Holyhead Road and Coundon Road / Upper Hill Street, allowing the removal of the traffic signalled junction of Holyhead Road and Barras Lane. Traffic currently using Barras Lane would access the Ring Road via the re-opened Upper Hill Street, as outlined above.
 - Peak time traffic restrictions on the eastern section of the A4114 Holyhead Road on the approach to Junction 8 (Inbound in AM peak (DS13I assumes 3 hour period), Outbound in PM peak, (DS13I assumes 3 hour period). Traffic using this section of Holyhead Road at other times of day may be subject to further restrictions, e.g. emissions based.
 - Additional interpeak time traffic restrictions on the eastern section of the A4114 Holyhead Road approach to J8 to effectively restrict traffic for a total of 6 hours inbound (AM and interpeak) and 6 hours outbound (PM and interpeak). This will be monitored through the use of Dynamic Traffic Management using real-time air quality monitoring equipment and Variable Message Signing (VMS) to re-route traffic away from Holyhead Road and onto more suitable routes when required.
 - Construction of a high-quality segregated cycle route linking Coundon with the city centre along Coundon Road and Upper Hill Street. This key addition to the Coventry cycle network would facilitate modal shift from car to bike for local journeys along the Holyhead Road corridor by providing an attractive segregated route serving three schools as well as linking residential areas with the commercial heart of the city. This will, in tandem with the other measures outlined above, facilitate the reduction in traffic on the eastern section of the A4114 Holyhead Road.
 - A focussed engagement initiative for schools, businesses and communities along the Holyhead Road corridor to encourage mode shift away from single person private car trips.
 - A comprehensive package of information and campaigns to underpin the mode shift.
- 4.7 Measures to address the secondary receptor exceedance on Foleshill Road are addressed through:
- Assigning the electric buses (referred to below) to Foleshill Road (accounting for 2/3rds of the bus movements on the route).
 - Banning the right turn from Cash's Lane onto Foleshill Road, reducing the amount of traffic on the route, and improving traffic flows.
 - HGV ban on part of Foleshill Road (see T3 report).
- 4.8 In addition, the Council is investing heavily, using Government grant, in upgrading the bus fleet, supporting a transition to electric taxis, and in encouraging the uptake of electric cars by extending the network of charging points across the city. The current Cleaner Bus Technology Fund programme, along with the successful bid for funding for ten electric buses, means that by 2021 all buses operating public services within the city will be compliant vehicles of Euro VI standard or better.
- 4.9 Taxi licensing requirements are also under review, with the revised licensing policy, that has recently been consulted upon, setting out minimum emission standards for taxis that will see all licensed black taxis being compliant with Euro VI or better by 2024 at the latest.
- 4.10 The cost of implementing this scenario has been estimated to be £40 million, including accounting for measures included in CAF. The NPV of -£40m represents very poor value for money, although better than DS14.
- 4.11 In summary, the cost and revenue forecasts for Option DS13I indicate that the costs associated with setting up and operating the focussed CAZ D (plus additional measures) scheme are lower than the Option DS14, although clearly Option DS14 has the greater revenue-generating potential.
- 4.12 The Technical Note for the Financial Modelling describes the methodology behind these cost estimates, with the Financial Model itself being included as an Excel spreadsheet.

- 4.13 The Distributional Impacts Appraisal has been updated, as set out in the Addendum that has been prepared alongside this Summary Note. With regard to Scenario DS13I, this concludes that the option has a slightly beneficial air quality impact for low income groups and children, a neutral impact on accessibility for a wide range of social groups, and a moderately beneficial impact upon low income groups and upon small businesses in relation to affordability.
- 4.14 The Economic Appraisal for Option DS13I has been undertaken as set out in the Economic Appraisal Summary Note, with the economic models have been re-run to reflect the updated scenario.
- 4.15 The Council considers, based on the evidence submitted, that this combination of measures to facilitate the diversion of traffic from the A4114 Holyhead Road and Foleshill Road, allied to a package of measures aimed at achieving modal shift for a proportion of local journeys made within the corridor, and combined with the existing programmes aimed at getting a fully compliant bus and taxi fleet by 2021 and 2024 respectively, will achieve compliance with the annual mean NO₂ EU Limit Value in the shortest possible time, and in a way that minimises associated social and economic impacts for the city's residents and businesses. Accordingly, this package is the Council's preferred option.

5 Preferred Option deliverability

- 5.1 The infrastructure elements of this option would be delivered via existing frameworks (see Procurement strategy document). The Council has an excellent record of delivering major infrastructure projects within the city to time and to budget, and preparatory work on the B4106 Spon End scheme has already commenced utilising Transforming Cities Fund grant secured from the West Midlands Combined Authority.
- 5.2 Two elements of the preferred option require the purchase of third-party land, and the Council recognises that this does add an element of risk to the delivery programme. These two elements are considered in further detail below:
- Spon End arches – whilst a capacity improvement can be delivered at this location within highway land, the preferred option that will maximise the capacity benefits will require third party land. Using the TCF grant, engagement has commenced with landowners, with initial responses being positive. The early engagement approach aims to minimise the risk of programme delay by progressing land acquisition by negotiation rather than by compulsory purchase.
 - Upper Hill Street – in order to deliver this scheme, land is required from an adjacent development site (the former gas works at Abbots Lane). Upper Hill Street forms the southern boundary to this site. The site is allocated for 100 residential units within the adopted Coventry Local Plan, although the developer has aspirations for a much larger development of around 1,000 units. However, access remains one of the main constraints to bringing the site forward, particularly as current access arrangements would result in development traffic using Barras Lane and the eastern section of the A4114 Holyhead Road. This access constraint would be removed with the re-opening of Upper Hill Street onto the A4053 Ring Road, as proposed within the Preferred Package. Therefore, it is considered that, given the benefits to the developer from removing the access constraint on the development site, it is likely that the acquisition of the required land will be completed by negotiation without the need for a Compulsory Purchase Order.
- 5.3 All measures to address Foleshill Road can be completed within existing land.

6 Enforcing measures on Holyhead Road

Traffic Management measures

Traffic Regulation Orders

- 6.1 Road Traffic Regulation Orders [TROs] are typically used to regulate parking and general vehicle access restrictions such as lorry weight bans or pedestrian zones, and bus lanes/gates. They are the powers used to establish the current access restrictions in Coventry. The legal basis is the Road Traffic Regulations Act 1984 and this was broadened under the 1995 Environment Act to allow for access restrictions in respect to the management of air quality. The responsible transport authority is Coventry City Council. A TRO is a direct access restriction that could be used to ban vehicles not meeting specific criteria (in this case exhaust emissions) from given streets. They can be set up like any other access restrictions to apply either 24 hours a day or at certain times of the day. In most cases TROs are enforced as stationary vehicle offences (e.g. contraventions of parking restrictions) by the local authority.
- 6.2 The current enforcement of TROs as a moving vehicle offence is only permissible by the police. However, there is provision in the Traffic Management Act 2004 (Part 6) for civil enforcement of traffic contraventions including moving vehicle offences. That said, it is not clear from initial investigation if these powers have been fully enacted allowing local authorities to enforce using ANPR. Therefore, further discussions with DfT would be needed to clarify the powers available to enforce a TRO based emissions restriction.
- 6.3 However, it is the Council's view that, the alternative approach of placing a TRO on the eastern section of the A4114 Holyhead Road prohibiting use of the road by vehicles (essentially, only allowing for buses and other authorised vehicles to access) would be enforced similar to bus gate restrictions, with fines issued to non authorised vehicles.

7. Summary

- 7.1 This note, and the reports listed in paragraph 1.2, outlines the additional work undertaken in response to feedback from JAQU following information submitted in June.
- 7.2 This concludes that compliance with the Ministerial Direction, to achieve annual mean NO₂ EU Limit Values in the shortest possible time, can be achieved through the package of measures identified as the Preferred Option as set out in Section 4.
- 7.3 The Council considers that it has the necessary powers to deliver the package of measures under current legislation, and that a variety of legal mechanisms exist to achieve the desired effect of removing non-compliant vehicles from the eastern section of the A4114 Holyhead Road.
- 7.4 The modelling also indicates that by introducing such restrictions and achieving the diversion of traffic onto alternative routes in line with the proposed strategy, air quality problems do not result elsewhere on the local road network within Coventry.
- 7.5 It is the Council's intention to commence work on the Full Business Case for the Preferred Option outlined in Section 4, including the commencement of public consultation on the package of measures. Programme details are included in the appendix.
- 7.6 Given the timescale required for an adequate public consultation, and the time of year, it is proposed that a six-eight week consultation period be held, effectively taking place during

October and November. Given the subsequent need to consider consultation responses, and to consider the need for any changes to the preferred option before finalising the FBC submission, it is considered that the submission date for the FBC of 27th September 2019 contained in the Ministerial Direction is not achievable. The Council therefore requests that this date be reviewed and an updated Ministerial Direction be issued with a revised date. The Council is optimistic that based on the consultation period outlined above, and the work completed to date, then a FBC submission can be made by 31st March 2020 at the latest, with an earlier submission date dependant on the feedback received during consultation.

Appendix 1: Allesley Old Road/Spon End infrastructure – further details

This route has been identified as being a fundamental part of achieving compliance on Holyhead Road. Traffic needs to be transferred away from Holyhead Road, and Allesley Old Road is the parallel route.

Without considering air quality, Spon End arches had already been identified as a pinch point in the network, and hence was subject to a successful partial bid to widen a section via the Transforming Cities Fund (TCF). However, the proposed scheme was not fully funded through TCF. Work has been undertaken to develop a scheme within the funding allocated through TCF to widen the route through the Spon End arches within the TCF allocated budget.

However, the level of traffic required to transfer from Holyhead Road means that flow through Spon End is much higher than originally considered. It has therefore been identified that this has an impact on the highway close to Spon End. The attractiveness of this route is key to ensuring traffic transfers away from Holyhead Road onto an appropriate route, and not rat-running through less suitable routes.

Therefore, the additional funding ask is to extend infrastructure works to ensure free flowing traffic through the alternative route, in both directions so to ensure that traffic does not queue back through Spon End arches. This is improve the link from Hearsall Lane/Earlsdon Avenue junction to the junction of Allesley Old Road and the section of Allesley Old Road from Four Pounds Avenue to the start of the Spon End Arches Pinch Point Scheme.

Estimated cost £2,907,902.01

This would provide additional capacity on the road network to cater for the displacement of traffic from other key junctions.

Items Included;

- Reprofiling of carriageway width to incorporate two lanes into city
- Localised widening of the carriageway
- Improving lighting, signage and surfacing to improve journey experience
- Providing linked Traffic CCTV cameras
- Provision of VMS traffic signs identifying city centre car park access and availability
- Traffic calming on local roads such as Broomfield Place and Melbourne Road to prevent rat-running and traffic displacement
- Utility diversions
- Professional fees for design, project management etc
- Relocation of existing bus shelters/stops to allow for easier passing places

This work would be completed in advance of the major Spon End arches work and we estimate a 7 month build process. Ideally these works would start before Spon End and have completed as this will assist in developing the flow of traffic into Spon End and giving us more control over the whole length of the works which will be essential to minimise the impact on Holyhead Road. Additional VMS will provide a greater understanding of traffic entering the city from a strategic route and can be used to direct drivers to the closest car park to minimise unnecessary travel around the city.

