

Audit Summary Report

									IN PHASE 2	
PCM Link	99335			Road/Location	A50, Stoke on Trent				Area	9
PCM Link modelled NO₂ concentrations (µg/m³)										
Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	
PCM Modelled NO ₂ concentration (µg/m ³)	47	44	41	39	36	34	32	30	29	
HE Indicative Modelled NO ₂ Concentration (µg/m ³)	37	34	32	30	28	26	25	23	22	
Qualifying Feature										
Satellite imagery indicates Sensitive Receptors and Public Access within 15m of the PCM link										
Air Quality Monitoring?										
Yes										
Is the Air Quality Monitoring within 10m, to support Phase 2 decision?										
Yes										
Air quality monitoring has been undertaken at one location in 2018 close to the A50 representative of public access next to the PCM Link. Although the indicative air quality modelling indicates that there are no exceedances of the Limit Value in 2018, indicative NO ₂ concentrations in 2018 were monitored above the annual mean NO ₂ concentration of 40µg/m ³ . It is therefore recommended that the PCM Link is taken forward to Phase 3 to confirm the outputs of the indicative modelling and to ensure that mitigation measures are not required.										
Mitigation required?										
Yes										
Possible Mitigation Options										
KEY:	✘ - Not possible			✔ - Possible			? - More research required			
Option	Feasible to bring compliance forward?		Summary							
Source – reducing emissions from the SRN										

Electric vans	x	<p>Research completed for Highways England indicates that it would only be possible to bring forward a maximum of 250 electric vans over the next few years in any one location. To achieve this would require the creation of a specialist centre.</p> <p>Based on the observed speed of just under 50mph along this PCM link, it has been calculated that 250 electric vans would equate to an NO₂ reduction of approximately 0.1µg/m³ along this link. As such, the implementation of this measure would not achieve an earlier compliance date.</p>
Traffic Management	?	<p>A panel of specialists including traffic, operations and air quality have reviewed regional traffic management options for the Phase 2 PCM links. The panel concluded that junction reconfiguration, the removal of signals, reduction of the number of lanes and increasing capacity should improve flow on the A500, improve congestion on non-PCM links and improve road safety by increasing distance for merging traffic.</p> <p>The panel also concluded that local traffic may re-reroute onto non PCM links as a result of reducing lanes and therefore blocking access to local roads would need to be investigated. Liaison with local authorities would be required.</p> <p>As part of Phase 3 we will look in to the above outlined traffic management measures in greater detail to determine their viability and to ensure there are no adverse effects on the local network as a direct consequence.</p>
Speed Management of 50mph	x ¹	<p>The existing speed limit along the A50 is 50mph. WebTRIS data has identified the daily average speed of vehicles travelling along this section of the A50 as being just below 50mph. Consequently, speed management would not be appropriate for this part of the network.</p>
Bus Retrofit	x ²	<p>Following consultation with the Local Authority, it has been confirmed that along this PCM link there are buses every 20 minutes eastbound and 6 buses per hour westbound. These vehicles are approximately 4 – 15 years old.</p> <p>Whilst given the age of the operating buses they could benefit from being updated, it is considered that the minimal bus usage along this road will result in no discernible reduction in NO_x emissions and therefore, this measure is not being progressed.</p>
HGV Retrofit	?	<p>A review of traffic data for this PCM link has identified approximately 6,230 HGVs travelling along this link. Theoretically, a HGV retrofit scheme could reduce annual mean NO₂ concentrations by 1 µg/m³. However, no accredited retrofit system is currently available for HGVs nor is it known the mechanism for delivery. As such, it is anticipated that this measure would require a Government led scheme for delivery and Highways England is not able</p>

		to progress this measure at this time.
Pathway – preventing the emissions reaching receptors		
9.5m high barrier	✘	<p>Emerging evidence based on from air quality monitoring research undertaken by Highways England indicates a 2 – 5µg/m³ reduction in annual mean NO₂ concentrations behind a 9.5m overhanging barrier.</p> <p>Based on the indicative air quality modelling a barrier would not be required. However, following a more detailed review of the observed traffic data, impacts on adjoining road network and indicative air quality modelling as part of the Phase 3 assessment, the need for a barrier will be reviewed.</p>
Tunnels / canopies, Bypass	✘	The current programme to build a tunnel / canopy or a bypass is estimated to be at least between 5 – 10 years. This means that none of these measures could be delivered earlier than the reported compliance date set out in the PCM model.
Receptor – dealing with concentrations at the affected receptors		
Any other local measures ³	?	<p>Footpaths</p> <p>Footpaths are located within 15m along the length of this PCM link. A review of the existing footpaths has identified that there is no potential alternative route for footpath mitigation.</p> <p>Low Friction Road Surfacing</p> <p>At this time there is no empirical evidence on the effects on NO_x emissions and is not being assessed as a measure to support compliance in the shortest timescale possible.</p> <p>Mechanical Filtration</p> <p>If there are no alternative mitigation measures that can be brought forward, we will look at the options around the use of portable mechanical filtration as a means to improve indoor air quality.</p>
Summary		
<p>This audit report has identified:</p> <ul style="list-style-type: none"> • Whilst the indicative air quality modelling is below the limit value, monitoring undertaken in 2018 has measured concentrations above 40µg/m³ and this PCM link will be taken forward to Phase 3. • Traffic management has determined that junction reconfiguration, the removal of signals, reducing the number of lanes and increasing capacity should improve flow on the A50. However, there is the potential for an adverse effect on the local road network. The feasibility 		

of those measures which may assist in bringing forward compliance will be looked at in greater detail at Phase 3.

- Retrofit HGVs may also support in bringing forward compliance, however a Government led scheme is required for delivery.

Recommendation

It is recommended that PCM link 99335 is taken forward to Phase 3 for more detailed assessment.

Supporting Activities

- Additional air quality monitoring commissioned and underway.
- A Traffic Management workshop will confirm the viability of the potential Traffic Management options as part of the Phase 3 assessment.

JAQU Comments

¹ Legal requirement to make a Temporary Traffic Regulation Order

² Requires JAQU to deliver

³ Subject to legal consideration of proposed local options