

Audit Summary Report

									IN PHASE 2	
PCM Link	36045	Road/Location					M56, Manchester		Area	10
PCM predictions of NO₂ concentrations (µg/m³)										
Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	
PCM Modelled NO ₂ concentration (µg/m ³)	42	40	37	35	32	30	28	27	25	
HE Indicative Modelled NO ₂ Concentration (µg/m ³)	44	42	40	38	35	34	32	30	29	
Qualifying Feature										
Satellite imagery indicates Public Access within 15m of the PCM link.										
Air Quality Monitoring?										
Yes										
Is the Air Quality Monitoring within 10m, to support Phase 2 decision?										
No										
Air quality monitoring has been undertaken at a number of locations representative of relevant receptors, although more than 15m away from the PCM link. NO ₂ concentrations were monitored above the annual mean NO ₂ concentration of 40µg/m ³ at a number of locations considered representative of sensitive receptors. As the monitoring locations are further back than the 4m PCM receptor location then it is highly likely that concentrations at the 4m PCM receptor would be higher than reported in the PCM model. This is confirmed by the indicative air quality modelling and therefore this link will be progressed to Phase 3.										
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 approximately 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	x	<p>A panel of specialists including traffic, operations and air quality have reviewed regional traffic management options for the 86 PCM links. The panel concluded there are no obvious traffic management solutions.</p>
Speed Management of 50mph	? ¹	<p>The existing speed limit along the M56 is 70mph. WebTRIS data has identified the daily average speed of vehicles travelling along this section of the M56 as being between approximately 60mph. Consequently, the speed limit would need to be set to 50mph to provide any improvement in NO₂ concentrations along this link.</p> <p>A 50mph speed limit between M56 junction 2 to 3 in both directions has been evaluated using the Regional Transport Model and the traffic data entered in to the DMRB air quality model. Based on the air quality modelling in 2020 (the earliest anticipated year that this measure could be deployed), it has been assessed that the introduction of 50mph speed limit, 24 hours a day, would lead to an indicative reduction of 1µg/m³ in annual mean NO₂ concentrations.</p> <p>Based on this reduction in NO₂ it would not achieve compliance with the limit values in a shorter timescale.</p> <p>However, a more detailed review of the observed traffic data, impacts on adjoining road network and indicative air quality modelling will be completed as part of the Phase 3 assessment.</p>
Bus Retrofit	x ²	<p>It has been agreed with JAQU that given the incredibly small number of bus journeys on the motorway network this mitigation will result in no discernible reduction in NO_x emissions along this link and therefore, this measure is not being progressed.</p>
HGV Retrofit	?	<p>A review of traffic data for this PCM link has identified approximately 7,900 HGVs travelling along this link. Theoretically, a HGV retrofit scheme could reduce annual mean NO₂ concentrations by 1.2µg/m³. However, no accredited retrofit system is currently available for HGVs nor is it known the mechanism for delivery. As such, it is</p>

		anticipated that this measure would require a Government led scheme for delivery and Highways England is not able to progress this measure at this time.
Pathway – preventing the emissions reaching receptors		
9.5m high barrier	✘	Emerging evidence based on from air quality monitoring research undertaken by Highways England indicates a 2 – 5µg/m ³ reduction in annual mean NO ₂ concentrations behind a 9.5m overhanging barrier. This PCM link has been reviewed and based on professional judgement it is not considered possible to build a barrier at this location because of the physical constraints.
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	✘	Footpaths Footpaths are located within 15m along the PCM link. A review of the existing footpaths has identified that there is no potential alternative route for footpath mitigation. Low Friction Road Surfacing At this time there is no empirical evidence on the effects on NOx emissions and is not being assessed as a measure to support compliance in the shortest timescale possible. Mechanical Filtration There are no residential properties within 15m along this PCM link.
Summary		
<p>This audit report has identified:</p> <ul style="list-style-type: none"> • In addition to the qualifying features within 15m, there are also sensitive receptors within 50m of the PCM link. • Air quality monitoring has identified exceedances at sensitive receptors along the PCM link. • Following a review of the indicative air quality modelling a potential reduction in speed limit to 50mph along this link will be reviewed to ascertain whether it would support compliance in a shorter timescale. • Retrofit HGVs may also support in bringing forward compliance, however a Government led scheme is required for delivery. • The indicative air quality modelling has indicated that there are exceedances of the Limit Value at qualifying features and therefore the link will be progressed to Phase 3. 		

Recommendation

It is recommended that PCM link 36045 is taken forward to Phase 3 for more detailed assessment.

Supporting Activities

Additional air quality monitoring commissioned and underway.

JAQU Comments

¹ Legal requirement to make a Temporary Traffic Regulation Order

² Requires JAQU to deliver