Audit Summary Report

						IN PHASE 1			
PCM Link 89315		**Road/Location** M621, Leeds				**Area** 12			
PCM predictions of NO_2 concentrations (µg/m^3)									
Year	2018	2019	2020	2021	2022	2023	2024	2025	2026
NO_2 concentration (µg/m^3)	**46**	**44**	**42**	39	36	34	32	30	29
Qualifying Feature									
Satellite imagery indicates public access and residential properties located within 15m of the PCM link									
Air Quality Monitoring?									
Yes									
Is the Air Quality Monitoring within 10m, to support phase 1 decision?									
No									
Air quality monitoring has been undertaken at two locations representative of relevant receptors over recent years. NO_2 concentrations annualised to 2018 show concentrations were below the annual mean objective of 40µg/m^3 at both locations. JAQU has advised Highways England, that based on the PCM modelling, the modelled annual mean NO_2 concentration alongside this PCM link is 42 µg/m^3 in 2020.									
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	✗	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.
Traffic Management	?	Research completed for Highways England, which considered a range of different traffic management and junction management options across the network, identified limited minor improvements in NO_2 concentrations on the motorway network and worsening's of NO_2 concentrations on the local road network for some scenarios. As such, it was concluded that this measure is unlikely to achieve compliance without having an adverse effect on the local road network and consequently, this measure has not been pursued by Highways England. As part of Phase 1, it has not been possible to look into this measure in any greater detail than outlined above. However, as part of Phase 2 we will work with our traffic and operations colleagues to see if there are any attainable local traffic management measures, beyond speed limits, that could be applied in this locality and are likely to result in different driver behaviours to those seen in the research project. As part of Phase 1 we are unable to determine the likelihood of traffic management being an achievable measure along this PCM link.
Speed Management of 60mph	✗[1]	The existing speed limit along the M621 is 50mph and consequently, a reduction in the speed limit would not provide any significant improvements in NO_2 concentrations along this link.
Bus Retrofit	✗[2]	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 NOx emissions along this link and therefore, this measure is not being progressed.
HGV Retrofit	?	A review of traffic data from WebTris for this PCM link has identified approximately 2000 HGVs travelling along this link. Theoretically, a HGV retrofit scheme could reduce annual mean NO_2 concentrations by 0.3 µg/m^3. 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 to progress this measure at this time.
Pathway – preventing the emissions reaching receptors		
9.5m overhanging 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 will be reviewed as part of the Phase 2

		assessment to determine whether it may possible to build an air quality barrier alongside this PCM link.
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]	×	**Footpaths** 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. As such, this option is not being progressed.
	×	**Low Friction Road Surfacing** Based on a study undertaken by Highways England, monitored evidence indicates that low friction road surfacing makes no discernible difference to tailpipe emissions when compared to hot rolled asphalt. Therefore, the use of low friction road surfacing would not support delivery of compliance in a shorter timescale.
	?	**Mechanical Filtration** Residential properties are located within 15m along the length of this PCM link. 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 if following a review of the indicative modelled concentrations are demonstrated to be above the EU limit value.
Summary		
This audit report has identified: • DEFRA's PCM modelling has identified a modelled annual mean NO_2 concentration of 42 µg/m³ in 2020. • In addition to the public access within 15m, there are also residential properties within 15m of the PCM link. • Air quality monitoring annualised in 2018 has identified no exceedances at sensitive receptors along the PCM link. • Traffic management will be considered as part of the Phase 2 assessment to determine whether there are potential traffic management measures, other than speed limits, which may assist in bringing forward compliance. • 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 89315 is taken forward to Phase 2 for more detailed assessment.
Supporting Activities
• Consider deploying monitoring at the nearest qualifying feature.
JAQU Comments
[1] Requires legal input [2] Requires JAQU to deliver [3] Subject to legal consideration of proposed local options