

Greater Manchester's Outline Business Case to tackle Nitrogen Dioxide Exceedances at the Roadside

Individual Authority Compliance Summary: Manchester City Council



Salford City Council



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Authorised by: Date:	Simon Warburton 28 th February 2019		

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1.1 Introduction

1.1.1 This appendix summarises the GM local air quality modelling and status of compliance with the EU Limit Values within the district boundary of Manchester City Council.

1.1.2 Whilst the local model is generally in agreement with the Pollution Climate Mapping Model (PCM) exceedances used by Government, it reveals a bigger problem than that initially identified by the PCM. It predicts a greater spatial distribution of NO₂ exceedances across roads in Greater Manchester and higher concentrations of NO₂ in many locations.

1.1.3 In 2021, local modelling identified 152 stretches of road (road links) or 250 modelled points, where concentrations of NO₂ are forecast to exceed the legal Limit Value (40 µg/m³) beyond 2020 in GM as a whole. 112 of these link exceedances (or 207 modelled points) are on road links included in the national PCM model. Typically, these are roads which have the greatest car use and freight flows. 40 of the link exceedances (or 43 modelled points) are located on shorter stretches of local roads that are not represented in the national PCM model, mostly around town centres across Greater Manchester. These roads often have a greater proportion of bus and van usage.

1.1.4 Of these, within Manchester there are predicted to be 88 model exceedance points, 70 on road links included in the national PCM model and 18 of the exceedances on shorter stretches of local roads that are not in the national model. These are shown in Figure 1 for 2021 and Figure 4 for 2023.

Preferred Option Effects in Manchester City Council

1.1.5 Following the implementation of the GM Clean Air Plan (CAP) preferred option (Option 8), air quality is predicted to improve within Manchester.

1.1.6 There is predicted to be a reduction in the number of modelled exceedances by -60 points in 2021 and -26 points in 2023. The location of these removed and remaining exceedances is presented in Figure 3 for 2021 and Figure 6 for 2023. These are categorised by the PCM and non-PCM road type of the modelled exceedance point in Table 1.

1.1.7 It is predicted that compliance is likely to occur by 2024 in Manchester, and 2024 across the whole of GM, due to improvements as a result of the proposed measures.

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Table 1: Summary of Impacts of the GM CAP Exceedances in Manchester

	Local Model point exceedances on PCM Links	Additional Local Model point exceedances on local roads (non-PCM links)	Total Local Model point exceedances
2021			
Without CAP measures	70	18	88
CAP Option 8 Phase 1	20	8	28
Change in exceedances	-50	-10	-60
2023			
Without CAP measures	24	5	29
CAP Option 8 Phase 2	3	0	3
Change in exceedances	-21	-5	-26

Future Analysis and Uncertainty

- 1.1.8 The analysis underpinning the GM Clean Air Plan has been produced in line with JAQU guidance using the best data and tools available.
- 1.1.9 However, the nature of the air quality challenge means that there are many sources of uncertainty in the modelling, and further sensitivity testing is underway.
- 1.1.10 In addition, it is important to acknowledge that there are some key assumptions that will need testing at the Full Business Case stage. This will include bus/taxi compliance, the behavioural responses of drivers, and the impact of measures such as vehicle renewal funds.
- 1.1.11 Assumptions made in the context of advice from JAQU includes that by 2021 that the majority of vehicles are already compliant or upgrade to a compliant vehicle (for example buses and taxis) and the remaining non-compliant HGVs and PHVs are assumed to stay and pay, whilst LGVs are assumed to stay and pay, change mode or cancel their trip.

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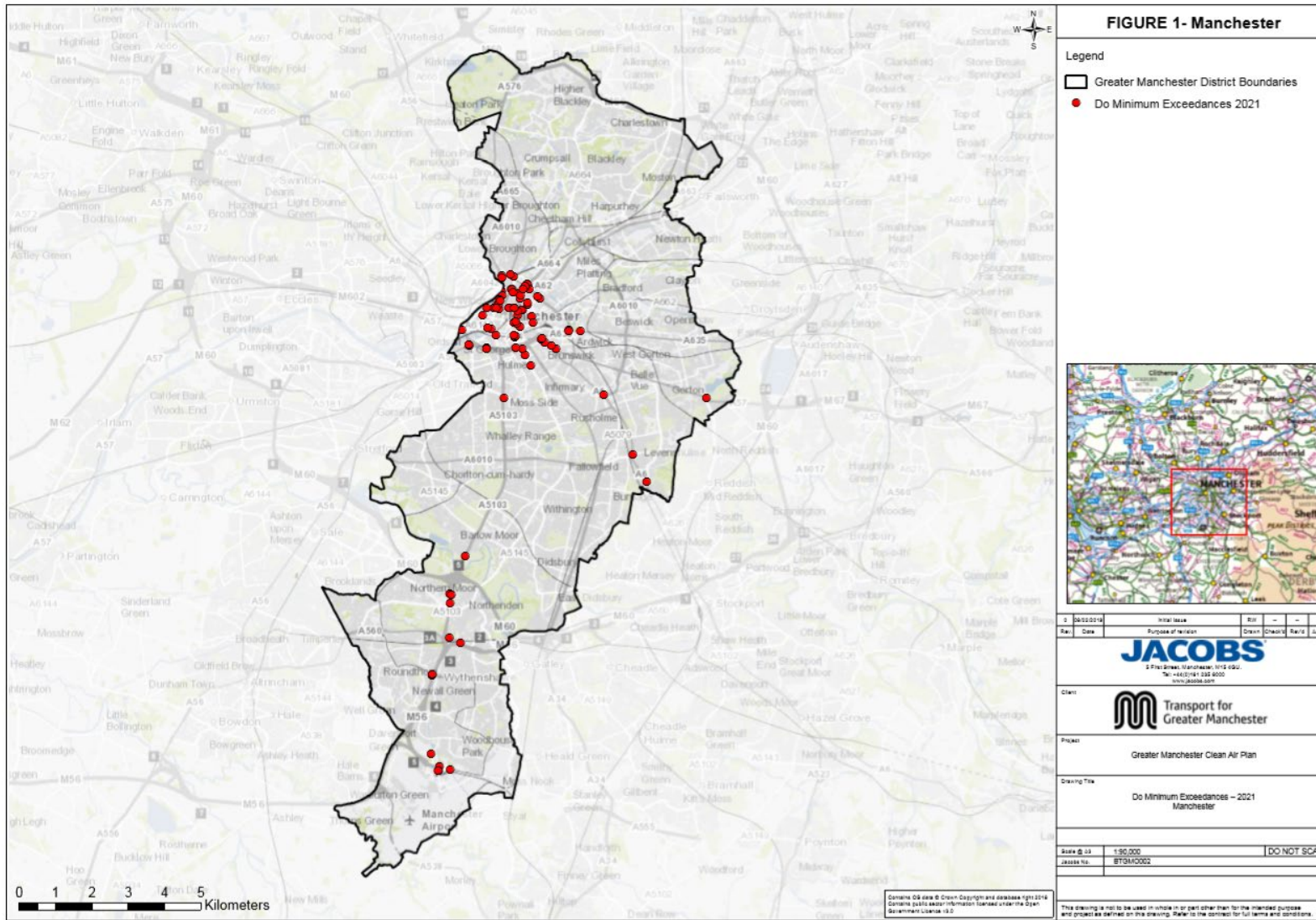


Figure 1: Predicted locations of exceedance of the annual mean nitrogen dioxide Limit Values without the CAP measures in Manchester in 2021

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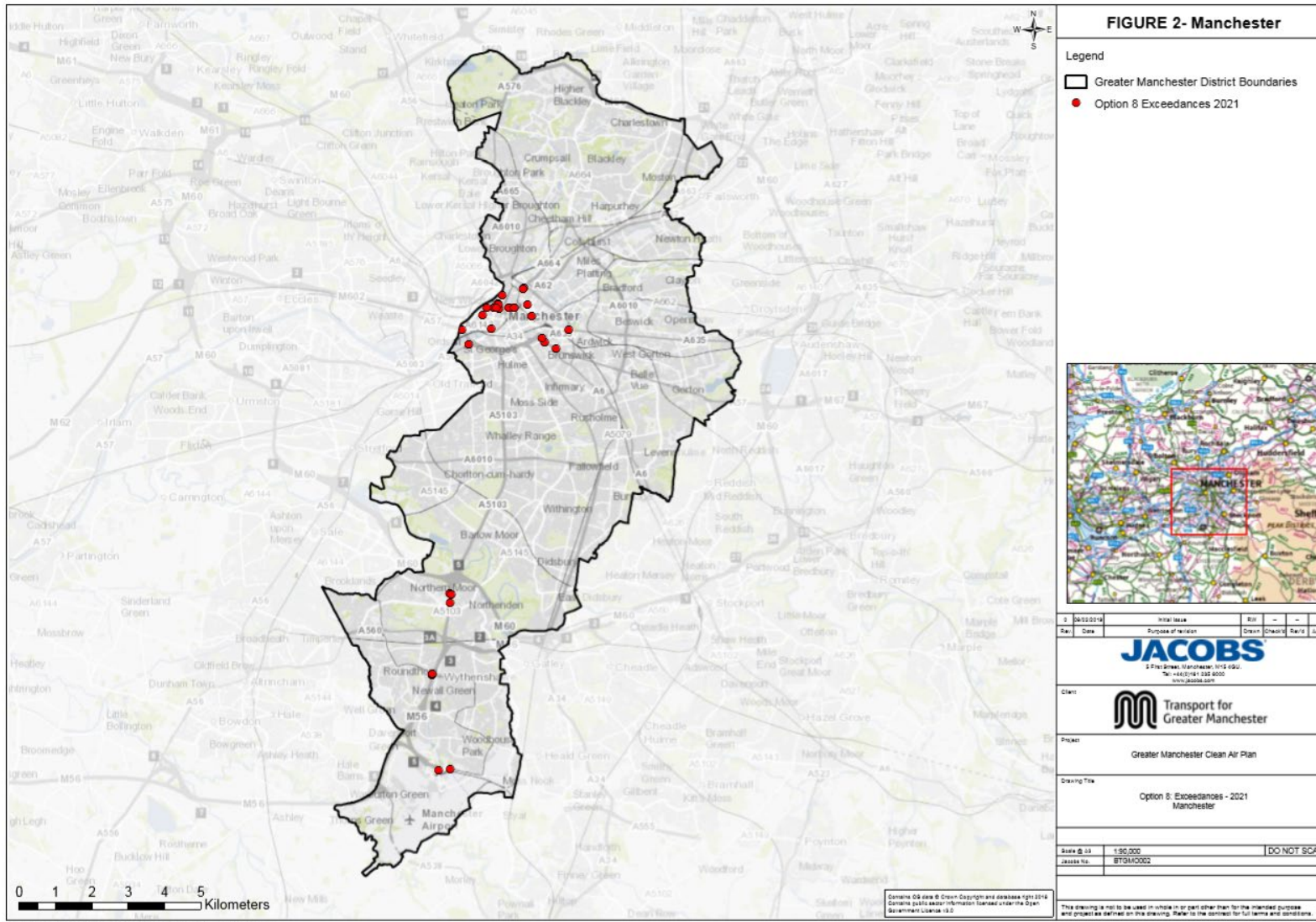


Figure 2: Predicted locations of exceedance of the annual mean nitrogen dioxide Limit Values with Option 8 Phase 1 in Manchester in 2021

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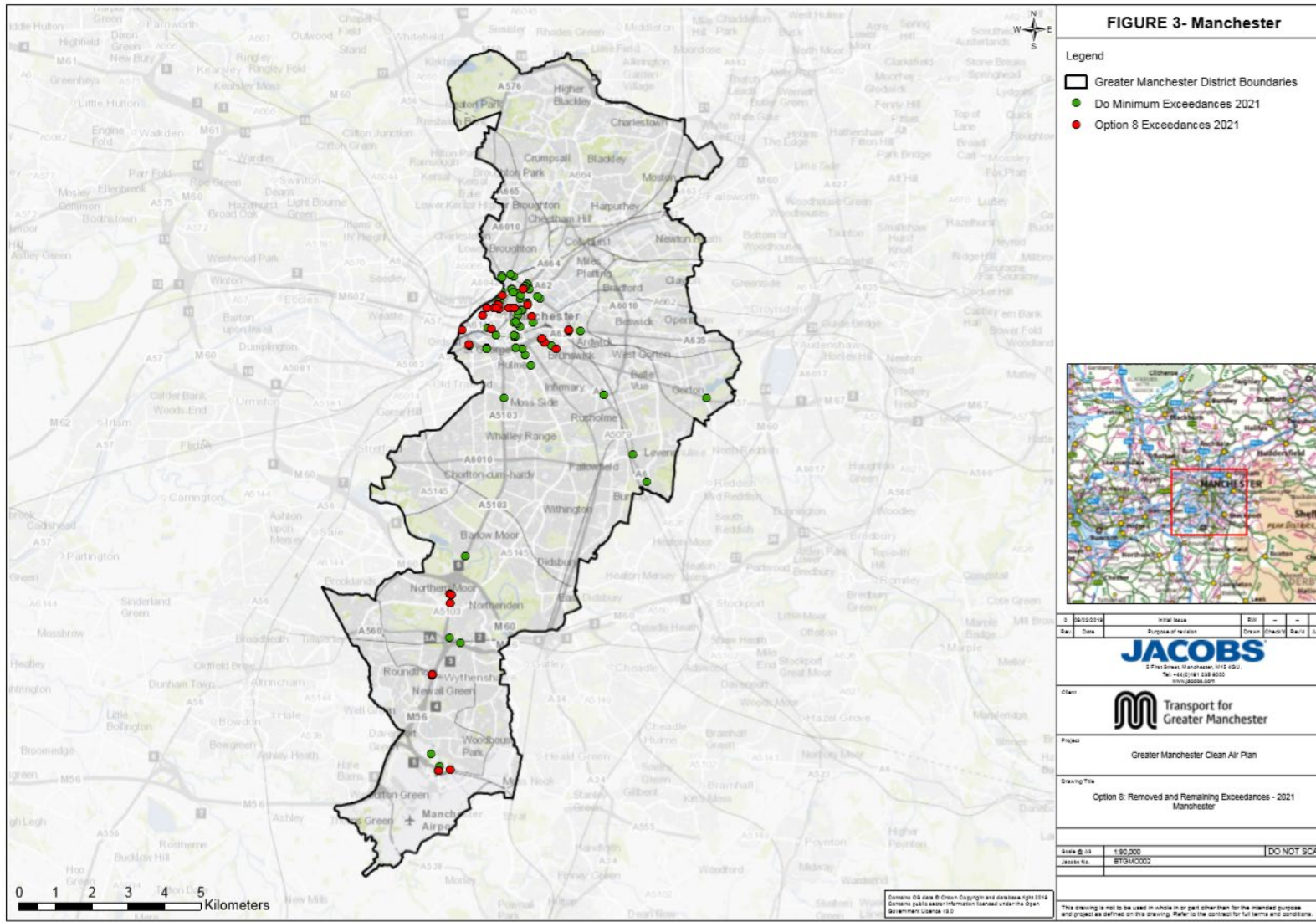


Figure 3: Predicted locations of removed and remaining exceedances of the annual mean nitrogen dioxide Limit Values with the CAP Option 8 in Manchester in 2021

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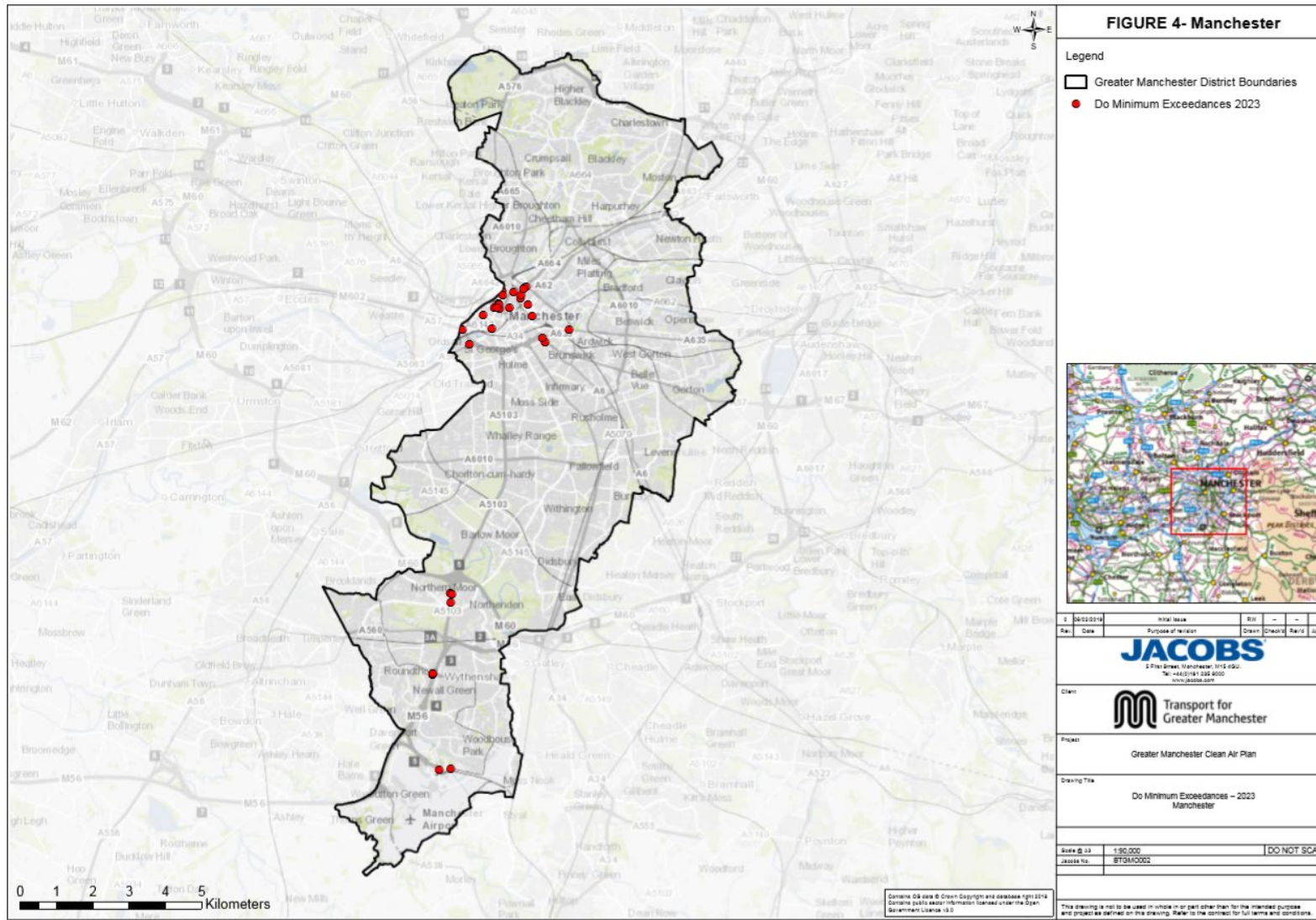


Figure 4: Predicted locations of exceedance of the annual mean nitrogen dioxide Limit Values without the CAP measures in Manchester in 2023

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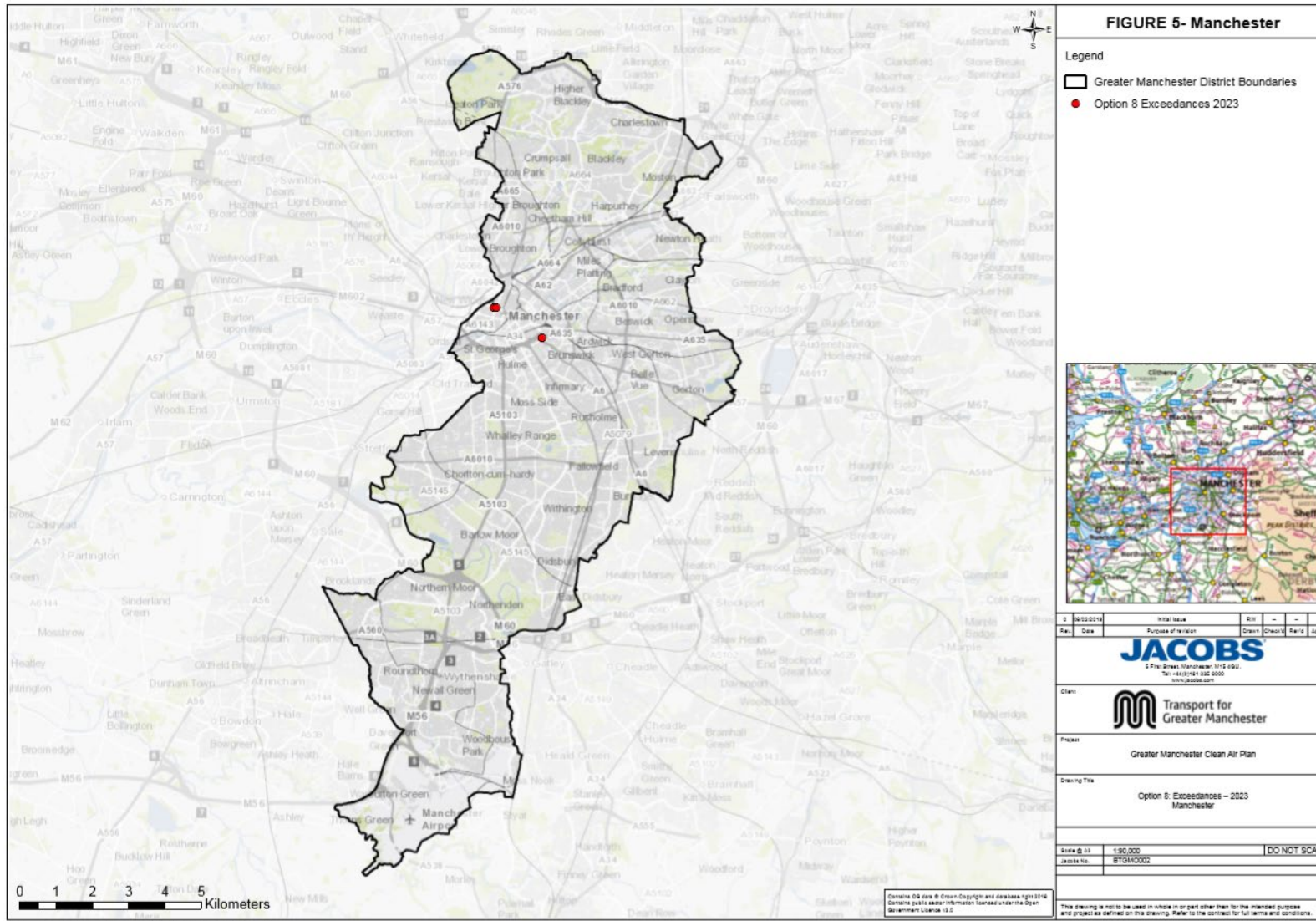


Figure 5: Predicted locations of exceedance of the annual mean nitrogen dioxide Limit Values with Option 8 Phase 2 in Manchester in 2023

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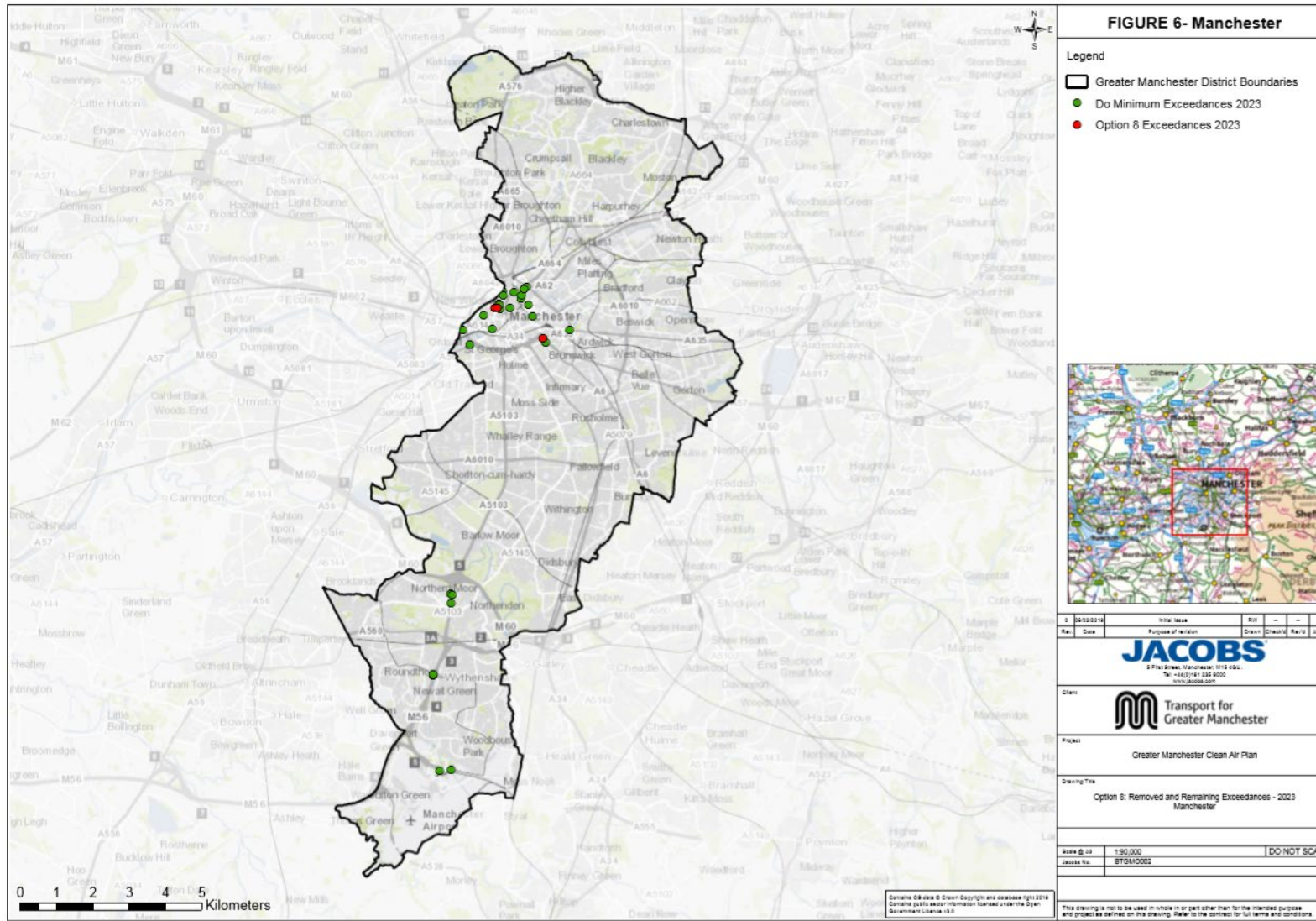


Figure 6: Predicted locations of removed and remaining exceedances of the annual mean nitrogen dioxide Limit Values with the CAP Option 8 in Manchester in 2023