Response

1. Several actions were responsible for the drop of NO2 concentrations. In 2017 a speed camera was installed at the north side of Temple Cloud helping to keep the vehicles speed down. In the same year, to the south approach of Temple Cloud the speed limit sign was placed further from the entry of the village that helped by reducing speeding vehicles approaching the village where the road narrows. Rumble strips were repainted on the northbound approach from the south.

   The canopy of the trees overhanging the narrow section of the village was removed to allow for a better air circulation. This had the effect of increasing the diffusion of the emissions from vehicles using the road. There were also some trees abutting the road at vehicle height that had started to encroach onto the space. This had the effect of causing vehicles to drive towards the centre of the road to avoid 'tree-strikes.' This subsequently caused traffic stop and start. These were removed and that reduced this stop starting effect and smoothed the flow of traffic.

   There has also been a natural improvement in fleet using the A37 through Temple Cloud with improved 'cleaner' technology.

   Finally, the Bath Clean Air Zone may have had a positive effect on vehicles passing through as people and businesses upgraded their vehicles and buses have been retrofitted to a higher standard, but this positive effect is confounded with reduced traffic volumes in 20/21. This positive effect may be increased further as Bristol City Council plan to implement their CAZ this summer.

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2. The nitrogen dioxide data in Temple Cloud is displayed in the following tables. Each monitoring location is a diffusion tube (DT). The objective standard for nitrogen dioxide is 40 µg/m^3 as an annual average

   The first table is the key table, and it shows the Local Air Quality Management data, with 2021 data being in provisional state until it is signed off by DEFRA in the coming months. The values withing the table are bias adjusted and are distance adjusted to the nearest residential façade (where the nearest long term human exposure is judged to be). DT 096 and DT 253 are still breaching the annual average objective.

   LAQM TABLE. Façade adjusted data annual average nitrogen dioxide concentrations (µg/m^3)

DT	2016	2017	2018	2019	2020	2021 Prov. Forecast
DT108	35	34	27	27	21	21
DT252					32	33
DT096	90	67	60	56	46	43
DT111	51	52			31	
DT253					45	46
DT254					29	27
DT255					36	37
DT256					17	
DT109	41	39	34	31	23	25

Officers were conscious that all the monitoring locations were to the west of the A37, so a period of monitoring was undertaken at properties to the east of the road to understand what the concentrations were there. The second table shows the average nitrogen dioxide concentrations (µg/m^3) from the gardens to the east of the A37 (apart from 264 which is in the west). All locations were compliant with the objective standard.

DT Location	Jan to May Average
DT260	13
DT261	14
DT262	11
DT263	23
DT264	29

Given that there were locations of non-compliance at the facades of properties to the west of the A37, Officers wanted to investigate the concentrations within the gardens of a selection of properties. The third table shows the average nitrogen dioxide concentrations (µg/m^3) from the West side of the gardens from the properties close to the road. There is a considerable reduction between the concentrations at the façade and within the gardens.

DT Location	June - Sept Average
DT272	9
DT273	8
DT274	8
DT275	13

This final table shows the average nitrogen dioxide concentrations (µg/m^3) collected from the inside a selection of properties as officers wished to understand what the concentrations were *inside* at the nearest room to the front (roadside) at ground floor level, other than DT 284 which is located on the external façade of the property.

DT Location	Oct - Dec Average
DT286	5
DT282	9
DT283	3
DT285	10
DT281	4
DT287	7
DT284 (façade)	30