A6MARR:

An Evaluation of 5-Year Post-Opening Data from a Local Perspective

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on behalf of High Lane Residents' Association

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Contents

Introduction

The A6MARR was the project name for the A555 "relief road" that connects the A6 to Manchester Airport. The new A555 opened to traffic on 15th October 2018.[1] Essentially, it is an extension at both ends of a shorter initial stretch of the A555 that had been completed in 1995[2] — which, at the time, had become widely known as "the road to nowhere".[3] The development of the newer A6MARR sections was part of a SEMMMS project, with "SEMMMS" originally being an acronym for *South-East Manchester Multi-Modal Study*[4] but in more recent documentation, the final "S" stands for *Strategy*[5].

Other SEMMMS projects include:

- the Poynton Relief Road (PRR, aka "Poynton Bypass", aka "Roy Chadwick Way" (a section of the A523), see map[6]), with its northern end now linked to the A555 via a new intersection. The Poynton Relief Road opened to traffic on 6th March 2023.[7]
- the A6 to M60 Relief Road, which failed to secure government funding in 2018[8] but is still included (as an item to "further explore options") in the Five-Year Transport Delivery Plan (2021 to 2026)[9] within the Greater Manchester Transport Strategy 2040. One of the predicted outcomes of the road was "*reduced traffic volumes... [on] Windlehurst Road / Hibbert Lane between High Lane and Marple*"[10] but given that it is expensive (approximately £477 million, estimated in 2017) and involves building a route on green belt land between Offerton and Lower Bredbury, it has garnered strong opposition, despite being classified as "very high value for money (VfM)", with a benefit-to-cost ratio (BCR) of 4.07.

During the planning stage before construction of the A6MARR, the scheme's Business Case[11] (published in November 2012) included a proposal to evaluate the A6MARR scheme in three phases, with the actual dates shown below:

- **Phase 1**: [Pre-Construction] Baseline Report (2014 data).[12] Dated April 2016. Published June 2018.
- **Phase 2**: One Year After Evaluation Study (2019 data). Dated July 2020. Fully signed off by the DfT in December 2022, ref. page 6 of the Year Five Traffic Report.[13]
- **Phase 3**: Five Years After Evaluation Study (2023 data). Dated March 2025. With the exception of the Year Five Noise Survey report, these reports were not made publicly available in the way that previous reports were, i.e. on http://www.semmms.info/semmms/reports-business-case/ — the Year Five Traffic and Air Quality reports are available only to those who know the specific [unlisted[14] and unannounced[15]] location on https://www.stockport.gov.uk/ Therefore, we (High Lane Residents' Association) have advertised the location on our website.[16]

In each phase, the aim was to measure a defined set of characteristics associated with the road systems to allow "before and after" comparisons to be made to help evaluate the success, or otherwise, of the scheme.

The main characteristics involved were:

- Traffic patterns, i.e. congestion and levels of traffic on particular roads during various periods of the day
- Journey times along particular routes, and journey reliability, i.e. the inverse of the amount of variability in journey times
- Levels of air pollution
- Acoustic noise, i.e. unwanted sounds

The Business Case *Outline Scheme Evaluation Plan*[11] document also had wider ambitions, e.g. to examine the effects on road safety (the number and severity of accidents) and on any modal shifts, i.e. switching to other modes of transport, e.g. from private cars to public transport, or to walking or cycling. However, I cannot find any details relating to these wider ambitions in any of the Phase 1, 2 or 3 reports, other than a mention in the Phase 1 report (section 4.5) that bus data for Autumn 2014 had been *"requested"*. There was also an ambition to assess the economic impact of the scheme, although the Business Case acknowledged that "*The One Year After opening evaluation is probably too early to identify any significant wider economic impacts but the Five Year After opening report will include a much greater focus on economic development and job creation.*" As far as I can determine, it did not.

During each phase, measurements were made in the above categories and were recorded in the reports. The results of these measurements in each category will now be examined in turn across all three phases, with an emphasis on the latest measurements, i.e. Phase 3, also referred to as "Year Five" or "5-Year Post-Opening".

Traffic Flow

The measurements were made using Automatic Traffic Counters (ATCs) of the type that comprises pairs of rubber tubes laid across the road, connected to an ATC machine at one end at the side of the road, capable of measuring the number of vehicles (and their speed and type) in each direction. These ATCs are typically kept in place temporarily (usually for 2 weeks, running 24/7), although a small number were permanent installations. Some of the Phase 2 measurements (at five sites) were made using radar technology and some of the Phase 3 measurements (at five sites) were made using video technology.

These ATCs are not to be confused with the network of 300 ATCs at permanent sites Great Britain, operated by the Department for Transport (DfT), which are permanent installations embedded into the road surface; nor are they to be confused with ATCs maintained by other organisations, such as the over 10,000 ATCs operated by National Highways on 'A' roads and motorways in England.[17]

	Phase 1	**Phase 2**	**Phase 3**
Reference	Section 4.2 of Baseline Report[12]	Section 2.2 of One-Year Report[18]	Section 2.3 of Five-Year Report[13]
Measurement Dates	**Sept / Oct 2014** (outside of school holidays)	**November 2019** (outside of school holidays)	**Sept / Oct 2023*** (outside of school holidays)
No. of Measurement Sites Listed	76	80	82
Site Ref. Differences	-	Phase 2 vs Phase 1 Site 84 omitted; Sites 50, 85, 86, 87 and 88 added	Phase 3 vs Phase 2 Sites 59, 89 added
AADTs (Annual Average Daily Traffic) i.e. the average, over a full year, of the number of vehicles (both directions added together) passing the location per day			
Site Ref 43 Buxton Road (West of Carr Brow), High Lane	16,600	16,800	17,100
Site Ref 49 Windlehurst Road, High Lane	4,400	4,900	4,500
Site Ref 55 Buxton Road (West of Windlehurst Road), High Lane	20,900	21,000	27,600

Table 1: Traffic Flows in High Lane for Phases 1, 2 and 3

* for the three High Lane sites. Some other sites elsewhere were re-surveyed in March/April/May 2024 due to various problems.

Note that the Phase 2 traffic measurements (in 2019) were made during November, unlike the measurements in Phases 1 and 3. This is an important shortcoming for Phase 2 because November does not include any days that are regarded as "neutral". For manual traffic counts, DfT guidance[19] is to perform the counts on "neutral days" — weekdays between March and October, excluding all public holidays and school holidays. This is because traffic is expected to behave similarly on any of these days. There are usually approximately 110 neutral counting days per calendar year. Although the measurements were made with ATCs rather than manually, the ATCs were installed for only a 2-week period. Therefore, given that the annual average daily traffic totals (AADTs) are calculated from these limited-duration measurement periods, it would seem reasonable to try to ensure that these measurement periods span neutral days for maximum consistency; the quality of the data from those

sample periods needs to be high to have confidence in the extrapolated results. Hence the Phase 2 traffic flow figures should be regarded with some caution.

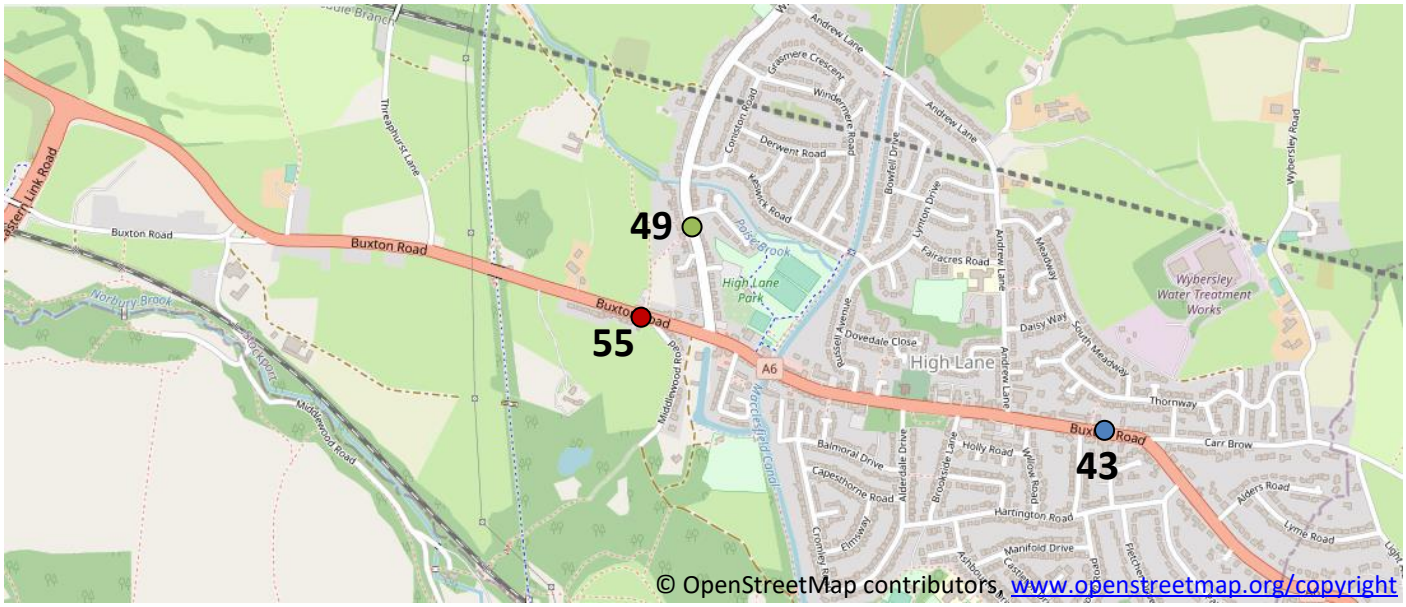

Figure 1: Site References of Traffic Count Sites

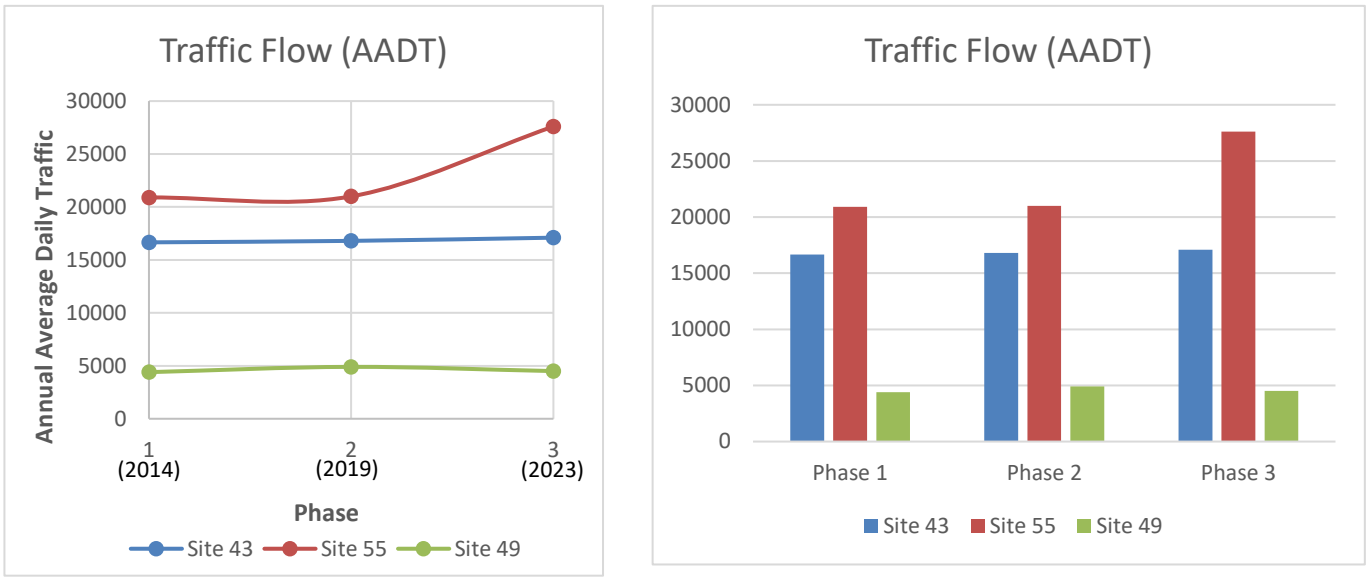

Figure 2: Comparison of Daily Traffic (All Vehicles) in High Lane in Phase 1 ("Before") with Phases 2 & 3 ("After")

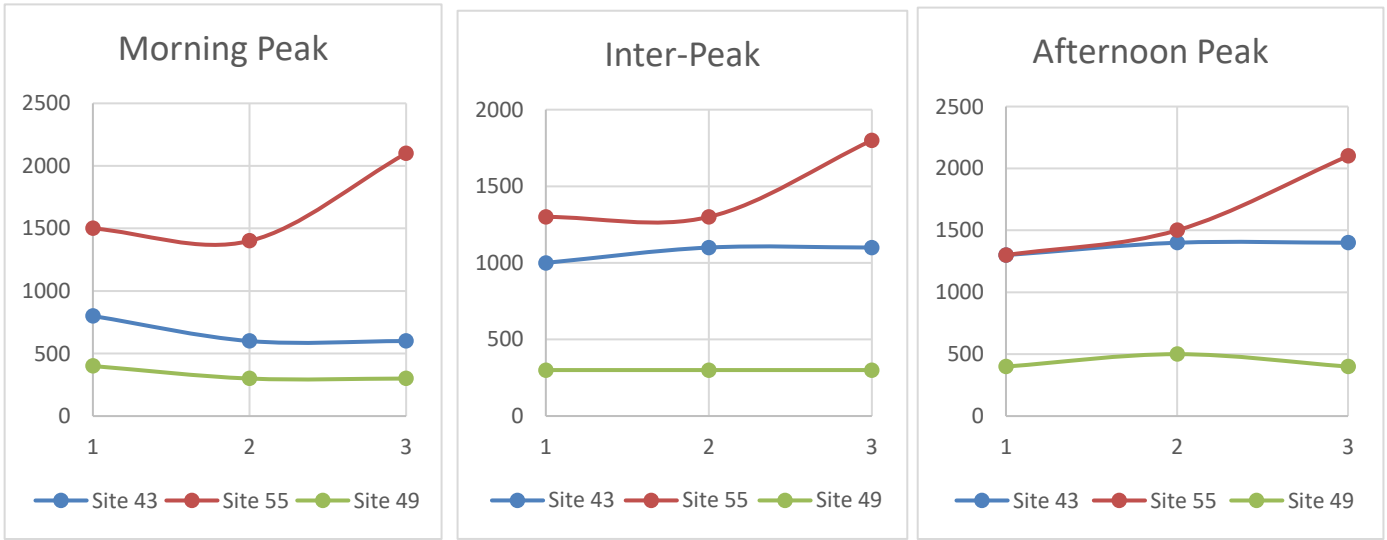

Figure 3: Comparison of Traffic in Different Daily Periods across Phases 1, 2 and 3

From Table 1, the most striking result from these Phase 3 AADTs is **a breathtaking increase of 6,700 vehicles per day (32%)** at site 55 compared to the baseline (Phase 1 measurements in 2014), or 6,600 extra (31%) since Phase 2 (in 2019). In fact, all three sites in High Lane show an increased number of vehicles compared to the baseline.

The increase in High Lane of 6,700 vehicles per day is the **highest increase for any single-carriageway road in the study area** I can find on the map in Fig. 2.4 of the Year Five report, except for:

- Site 77 (on the A538 Hale Road **near junction 6 of the M56 motorway**), which has an AADT (in 2023) of 30,200 (an increase of 9,800 (48%) since the baseline).
- Site 83 (on the A523 near Bollington, south of Prestbury Lane), which has **a lot less** daily traffic (an AADT of 20,800 in 2023 (an increase of 7,800 (60%) since the baseline) than the 27,600 AADT in 2023 in High Lane.

In section 2.5 of the Year Five report, four locations are singled out for a special mention as being sites that have experienced "more significant increases in AADTs since Year One", one of them being **Site 55 in High Lane**. Another of these four locations (Site 58 on the A627 between Hazel Grove and Marple) had an increase of 5,300, which although significant, is still less than the 6,700 increase in High Lane.

In Figure 3 and 5 of my report, the definitions of the peak periods (which seem rather narrow, in my opinion) and inter-peak periods referred to in the Phase 2 & 3 reports are:

- Morning Peak: 8am to 9am
- Inter-Peak: 10am to 4pm
- Afternoon Peak: 5pm to 6pm

On p.22 of the Phase 3 report, an attempt is made to analyse changes in traffic flows in "Year Five" during these "Peak" and "Inter-peak" periods. However, it may be misleading to restrict the analysis to these **so-called "peak" periods**. For example, at Count Point 91114 (on the A6 near the Red Lion, High Lane), a manual count was performed on 22nd April 2021 between 7am and 7pm, so the raw hour-by-hour traffic figures in each direction are known.[21] Taking the "peak" to instead mean "the period with the most traffic", in the morning, the real peak from these measurements was **7am to 8am** westwards (i.e. towards the airport) and **9am to 10am** eastwards (i.e. towards Buxton). In the evening, it was **4pm to 5pm** westwards and **5pm to 6pm** eastwards although the traffic in that direction remains **high between 2pm right through to 7pm**.

In the Phase 3 report, AADT results (i.e. daily averages of the number of vehicles across the full 24 hours, 7 days a week during a given 12-month period) for heavy goods vehicles (HGVs, i.e. goods vehicles over 3.5 tonnes, gross vehicle weight[20]) are listed in terms of percentages, so I have plotted them below, together with the corresponding numbers of HGVs, which I have calculated from these percentages.

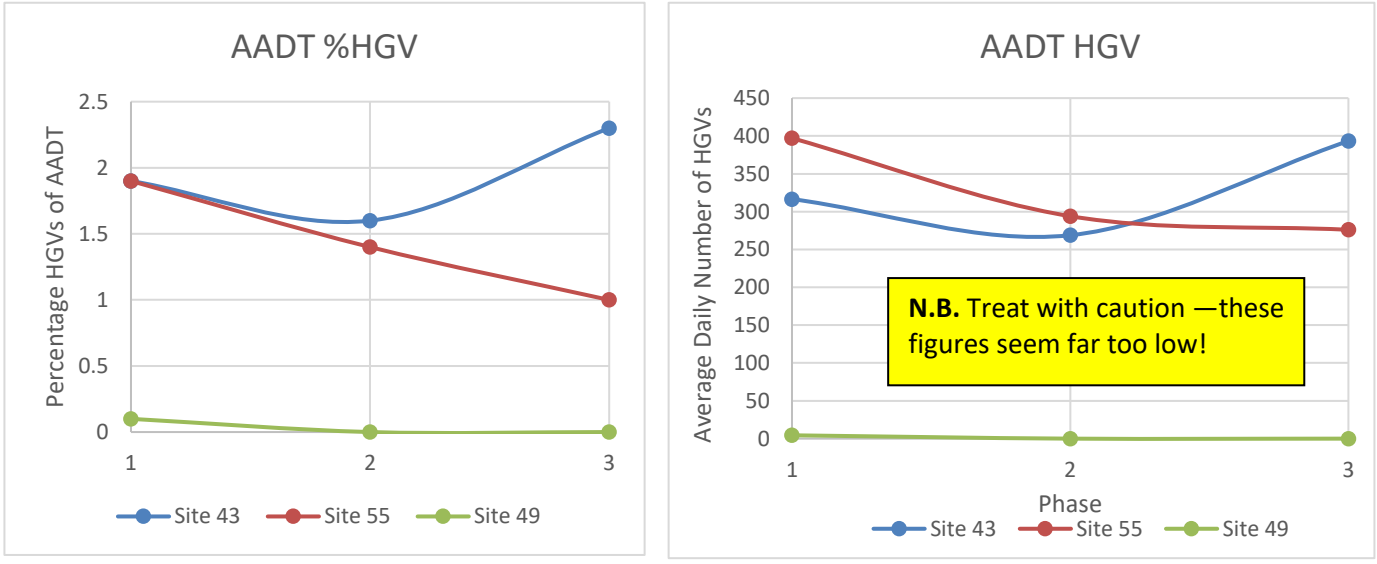

Figure 4: Comparison of HGVs (as a percentage of all traffic, and as average daily totals) across Phases 1, 2 and 3

However, when I converted these percentages to absolute numbers, it was immediately obvious that these daily numbers of HGVs were suspiciously low. As an example of a cross-check, Table 2-1 of the Year Five report lists the "AADT HGV%" at Site 55 (on the A6 near the Royal Oak) in 2023 as being 1.0%, so it is trivial to see that with a total AADT at that site of 27,600, 1% of this is 276 HGVs — a daily total that at this busy site seems far too low to be credible. For context, at Count Point 91114[21] (on the A6 in High Lane, near the Red Lion), a less busy location with a motor vehicle AADT of 20,356 per day in 2023, had 1,460 HGVs for the daily average, i.e. 7.2% (or if the 129 pedal cycles are included, the AADT becomes 20,485, with the corresponding percentage of HGVs being 7.1%). This is more than **seven times** the percentage of HGVs for the example cited in the report.

Obviously, these count locations (Site 55 in the Year Five report and DfT Count Point 91114) are at different points along the A6 in High Lane, so they cannot be directly compared, but such is the scale of the difference (i.e. nearly an order of magnitude) that an explanation is needed. The data at Count Point 91114, although extrapolated from previous years, ought to be reasonably reliable as there was an official manual count at that site in 2021. Even using the 2021 figures (which included some "lockdown" periods[22] due to the coronavirus pandemic), with a motor vehicle AADT of 18,781 per day, there were 1455 were HGVs included in that daily total, i.e. 7.7%.

And even using the more comparable location of Count Point of 90082[23] (a little further along the A6 from Site 55 in the direction towards Hazel Grove — just past Threaphurst Lane), the 2018 figures (the only available year at that location) were a motor vehicle AADT of 23,389, of which 1570 were HGVs, i.e. 6.7%. A further cross-check was made at this Count Point location on Tuesday 15th October 2019 by a group of "lay volunteers" (i.e. not officially trained enumerators) under the direction of Councillor Aron Thornley, who organised a manual traffic count from 7am to 7pm (i.e. spanning only 12 hours of the day, as per official manual traffic counts), where the raw 12-hour total was 22,947, of which 1,818 were HGVs, i.e. 7.9%.

For what it's worth, in Figure 5, I have plotted the percentage of HGVs at the three sites (during particular periods during the day) in the Year Five report, but with such low percentages, I would urge caution while these percentages are in doubt. **STOP PRESS**: Just as the present report was about to be published, I received a reply (in response to the issue of the low HGV figures) on behalf of SMBC. See Appendix 2 for Details.

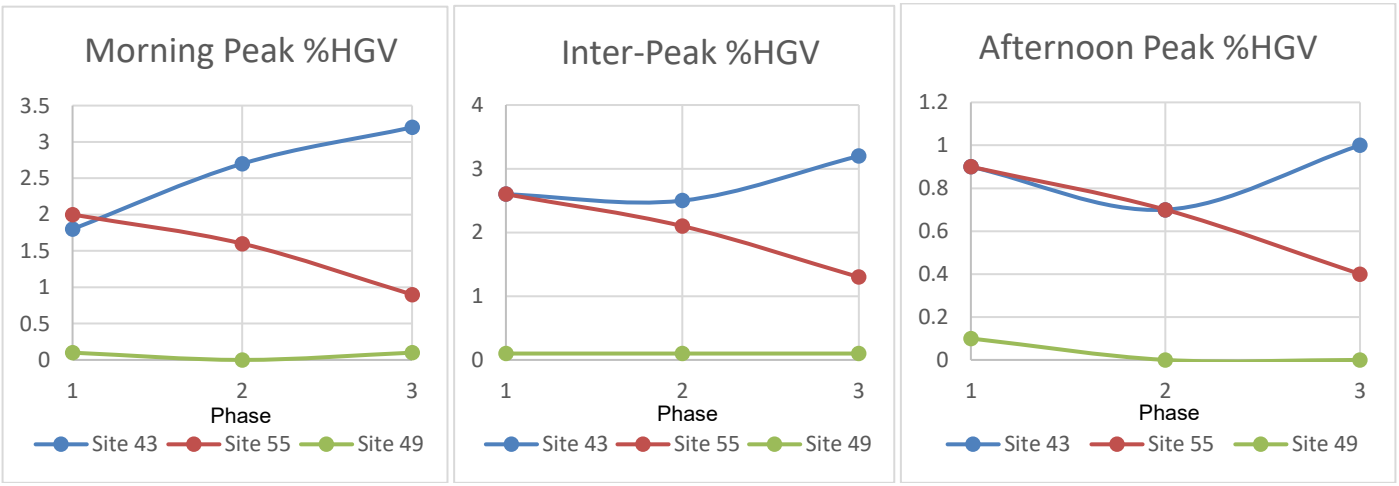

Figure 5: Comparison of Percentage HGV traffic at different times of the day across Phases 1, 2 and 3

The A6MARR Transport Assessment[24] (published in October 2013, with subsequent updates and corrections) used traffic-flow modelling to predict the effect of introducing the A6MARR with "Enhanced Mitigation Measures" (which were measures that were subsequently adopted to try to reduce the inevitable increase in traffic volumes through High Lane) into the road network. The location of one of these sites ("Site 17" in that document) corresponds to one used for the above measurements, "Site 55". However, in the Transport Assessment, the baseline year for the modelling is 2009 (rather than 2014) and the post-opening data year is 2017 (rather than 2019 or 2023), so comparisons are difficult.

Nevertheless, the Transport Assessment modelling predicted that with Enhanced Mitigation Measures, the AADT at Site 17 (Site 55) would be **29,300** in 2017, compared to 32,600 with no mitigation, and 25,900 without the A6MARR scheme. The AADT in 2023 (based on measurements) at that site was 27,600. The Phase 2 report (i.e. 1-year post-opening) claimed an opening year forecast of **25,600** in its Table 2.8 (and again on p.21 of the Year Five report) but I have never seen this very low forecast figure published before then.

For the context of general trends in road traffic, Department for Transport dataset TRA8903[25] shows annual levels of motor vehicle traffic (in millions of vehicle miles, excluding trunk roads) by local authority in England. From this, I have plotted the figures for the borough of Stockport in Figure 6, and for the whole of England in Figure 7. Key points to note are the dip following the financial crisis of 2008, the subsequent slow recovery and the dramatic reduction in 2020, corresponding to the COVID-19 pandemic. The other prominent feature is the sharp increase just before that in 2019 — the first full year after the opening of the A6MARR. Across England as a whole, in 2019, the graph shows a much slower rate of growth compared to the very sharp increase for Stockport borough. I leave it open to the reader to make their own interpretation of this.

Also, by 2024, the traffic in Stockport borough had overtaken the 2019 pre-pandemic level, whereas in England as a whole, it had returned only to the approximate level in 2017.

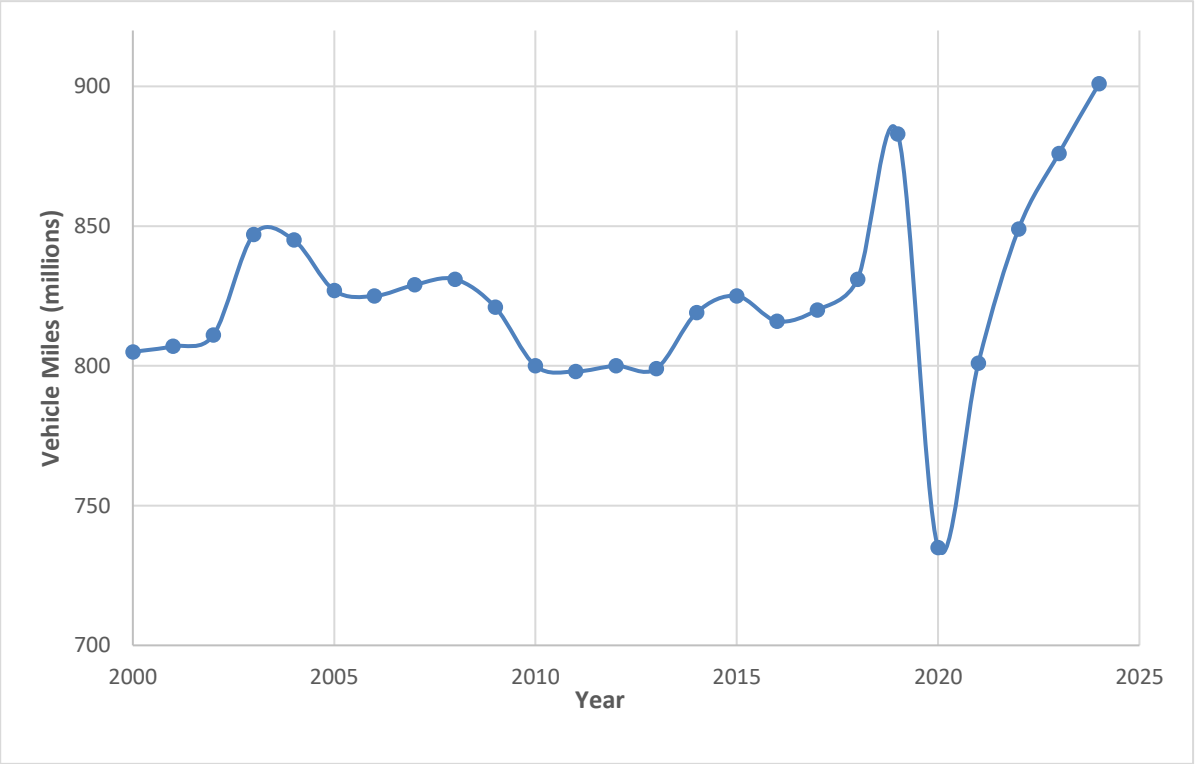

Figure 6: Annual Motor Vehicle Traffic, excluding trunk roads, in Stockport Borough

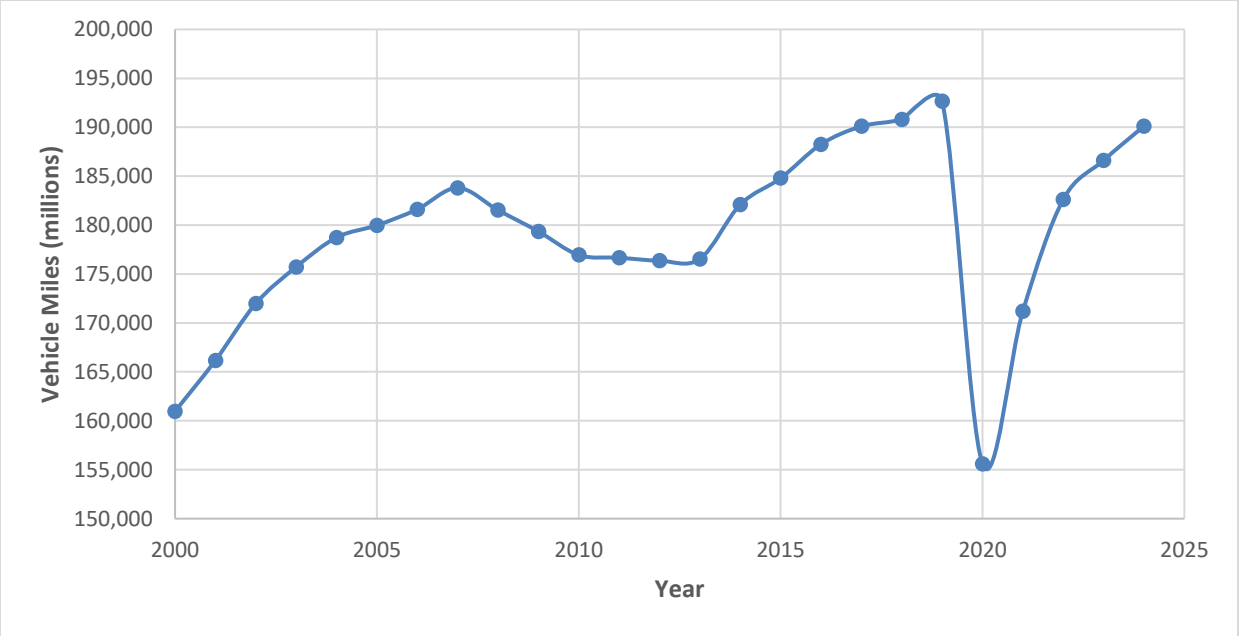

Figure 7: Annual Motor Vehicle Traffic, excluding trunk roads, in England

Road Classification and Terminology

Given that Figure 6 and Figure 7 exclude "trunk roads", it may be worthwhile to remind ourselves of some relevant terminology and history. **Trunk roads**[26] are roads that are managed and maintained by national government, i.e. National Highways (formerly Highways England, and before that, the Highways Agency). National Highways manages the Strategic Road Network (**SRN**),[27] which comprises motorways and some A roads — "*nationally significant roads used for the distribution of goods and services, and a network for the travelling public.*"[26] The A6 through High Lane used to be a trunk road until it was detrunked in May 2002;[28] it is now a **primary road**, so it is managed by the local authority, i.e. Stockport Metropolitan Borough Council (SMBC) for the A6 within its area. Primary roads are "*roads used for transport on a regional or county level, or for feeding in to the SRN for longer journeys*". They "*are coloured **green** on most maps, as opposed to the red of ordinary A roads*".[26] In legislation, there is also the term **principal road** (meaning an A road or better), but this term is now generally avoided, otherwise.

So, because "any road on the SRN is known as a trunk road"[26], Figure 6 and Figure 7 exclude motorways such as the M60, but *include* most other roads such as the A6 and the A555. However, in general usage, motorways would *not* normally be regarded as trunk roads; motorways are generally referred to separately. Indeed, "*All motorways are **Special Roads**, together with some high-grade dual carriageways.*"[26]

In section 2.8 of the Year Five Report, it states on p.27 that "Screenline 6" captures east-west traffic movements near the A6 in High Lane, with "***significant increase in traffic volumes along the A6 in High Lane, whereby AADTs have increased by over 30% since the Baseline***". This echoes the huge 32% increase at Site 55 (already mentioned above on p.6) in Year Five compared to the baseline.

Of the ten green-highlighted bullet points in the summary of the Year Five Report, pp.35-36, High Lane is mentioned in the seventh bullet point as experiencing a significant increase:

> "*Across the wider highway network, **significant increases in traffic volumes between Years One and Five were noted along the A6 in High Lane**, A627 Offerton Road in Hazel Grove, the A34 Kingsway (south of the A560) and the A538 Hale Road in Hale Barns.*"

Journey Times

As mentioned in section 3.2 of the Year Five Report, journey times were derived from satnav data gathered by TomTom, which "has the advantage of large sample sizes, with data being available for **all time periods** from January 2008." In the Baseline Report, the 12-month sample period ran from 1st September 2013 to 31st August 2014. However, in the Year One Report, the sample period was reduced to 1st October 2019 to 30th November 2019, excluding school holidays and a weekend at the end of October due to flooding, i.e. a sample period totalling less than 2 months. And for the Year Five report, the sample period was increased to just under 3 months: 4th September 2023 to 30th November 2023 (excluding school holidays). No explanation was given in the reports for the choice of these different sample periods — which obviously makes comparisons more difficult. The earlier statement in the reports regarding data being available for all time periods from 2008 onwards suggests that it would be possible to select any desired analysis period, and then make comparisons on a like-for-like basis. It is therefore disappointing to see that has not been done in these reports.

In essence, the average journey-time results in the Year Five report show that journeys to Manchester Airport (from the A6 in High Lane at the junction with Windlehurst Road) were significantly faster using the A555 ("Route 1") compared to continuing along the A6 to the M60 and then along the M56 ("Route 2"), and with similar results in the opposite direction. Overall, the time savings were in the range 42% to 58%, which is not surprising. It should be noted, however, that these comparisons relate to Year Five data (in 2023) between the two routes. When the Year Five A555 route in 2023 is compared to the alternative A6/M60/M56 route in the baseline year (2014), the time savings are less, presumably because of increased levels of traffic and changes in the road network (e.g. additional signalised junctions/crossings) in the meantime. The longest average journey times for the two routes are included in Table 2, below, together with Route 11, which includes the A6 through High Lane. Note that since the opening of the A6MARR, the period with the longest average journey times for Route 2 has shifted to one hour earlier, i.e. from 5pm-6pm to 4pm-5pm.

	Phase 1 (Baseline, 2014)	Phase 2 (Year One, 2019)	Phase 3 (Year Five, 2023)
Route 1 (A6, A555, Airport)	-	**23'52"** eastbound Mon-Fri, 4pm-5pm	**23'49"** eastbound Mon-Fri, 4pm-5pm
Route 2 (A6, M60, M56, Airport)	**45'04"** eastbound Mon-Fri, 5pm-6pm	**59'22"** eastbound Mon-Fri, 4pm-5pm	**52'24"** eastbound Mon-Fri, 4pm-5pm
Route 11 (A6: A6/A6015 junction (Newtown) to Norbury Hollow Rd / Mill Lane)	**11'27"** westbound Mon-Fri, 8am-9am	**23'40"** westbound Mon-Fri, 8am-9am	**21'33"** westbound Mon-Fri, 8am-9am

Table 2: Longest Average Journey Times (in minutes & seconds) along Routes 1, 2 and 11

The starting/ending point on the A6 for Routes 1 and 2 is the Windlehurst Road junction — hence these journey times do not include the journey *through* that junction itself. However, "Route 11" is a route on the A6 that does include that junction. On that route, the figures show that there is an approximate **doubling** of the longest average journey time since the baseline year, which is very concerning.

Even though there is a slight decrease in the Year Five results compared to Year One, it is still a very significant increase when compared to the baseline year. This is mentioned on p.61 of the Year Five report in bullet-point 6 of the green-highlighted summary:

> *The most significant increase in average journey times was noted along Route 11 in the AM peak, from the A6 from (between Mill Lane & Norbury Hollow Road) to A6015 Albion Road junction. In the AM peak westbound direction, average journey times are now typically 10 minutes longer than Baseline/ pre-scheme journey times, with the* ***majority of this increase occurring between Disley and High Lane****. Although this increase in journey times is slightly lower than that experienced at Year One, it is still a significant increase.*

This is mentioned at the end of section 3.2 of the Year Five report, which adds that "further **notable delays** are experienced between Disley and High Lane, in particular starting south of Carr Brow in the vicinity of Park Road." Indeed, in the Year One report, it had been noted on p.50 that there was anecdotal evidence of speeding and rat-running vehicles disobeying the 20mph speed limit signs and the "No motor vehicles Mon - Fri, 6am - 10am, except for access" signs on the A6 that lead into residential streets in High Lane, adding on p.51, "this area will be subject to a separate investigation, with more detailed traffic surveys undertaken... in an attempt to fully understand the localised traffic patterns."

A few years later, between 23rd January and 6th March 2023, a six-week trial closure of Hartington Road to Park Road (making it a no-through route) was undertaken, together with traffic surveys and a public consultation. A report[29] of the results from this trial was submitted to the Marple Area Committee Meeting on 29th November 2023. Section 3.23 of the report concluded, "Overall, the road closure seems to have had minimal impact on the time it takes to travel along the A6, with most vehicles taking between 7 and 8 minutes to cross the A6". In other words, those who disobeyed the signs (risking prosecution and penalties) did not actually benefit from their actions in terms of any reduction in journey times.

And on the subject of journey timings, average journey times are, of course, only one aspect to consider when allowing time for travelling along a particular route; another is **reliability**, i.e. how much variability in journey times is there likely to be for a given route at a particular time of day? How has this changed since the opening of the A6MARR?

Journey reliability is considered in section 3.4 of the Phase 3 Report, with the results from Table 3.8 plotted in Appendix C. For the Phase 2 report, Table 3.8 is just a summary that includes only the two so-called "peak" 1-hour periods, with more detail in Appendix C (at least for Route 1). However, for the Phase 3 report, Appendix C **omits** the hour before that corresponds to the ***actual*** peak, i.e. the busiest period between 4pm-5pm, when slower and less reliable times may be expected. If this data can be shown for Phase 2, why has it been omitted for Phase 3? Surely the busiest period ought to be included in the analysis of journey reliability? Given that the conclusions from the Phase 3 Report are based on a comparison of periods that exclude *actual* peak periods, I think this weakens the validity of those conclusions. Although the simplified "traffic light summary" in Table 3-10

of the Phase 3 report (p.57) shows an overall worsening of journey time reliability (which it attributes to an overall increase in traffic, generally) and so is broadly correct, we do not know the full extent of the worsening because the busiest period (4pm-5pm on weekdays) has been excluded from the analysis of journey reliability.

The report assesses reliability in terms of "percentile journey times" and thereby using the size of the "interquartile range", in particular, as an indicator of reliability — the narrower the range, the more reliable the journey.

> For those who may not be familiar with this statistical terminology but are nevertheless interested, here's my attempt at a quick explanation in simple terms. When considering a set of journey-time measurements, if they are arranged in order from fastest (lowest time) to slowest (highest time), the *middle one in the series is called the "**median**". Most of us will probably already know this. But another name for the median is the "**50th percentile**". That's because it splits the list of journey times in half: 50% of the times are the same or below this value and 50% are above it. Now imagine if that ordered list of two halves were instead divided into four equal pieces (quarters), with the same number of journey times in each piece. The **25th percentile**, which is also known as the **first quartile** or **lower quartile**, represents the middle time between within the first half of the list of times, i.e. the fastest 25% of the times (i.e. times in that lowest quarter of the list) will be at or below the 25th percentile. In other words, the 25th percentile journey time can be thought of as the time taken to travel that route that only 1 in 4 (i.e. 25%) vehicles matched or went faster than. Similarly, the **75th percentile**, which is also known as the **third quartile** or **upper quartile**, splits off the fastest 75% of times from the slowest 25%. The **interquartile range** (**IQR**) contains the times between the lower quartile and upper quartile (i.e. the "middle 50%" of times in the list), and as previously mentioned, is used in the report as an indicator of journey-time reliability because sets of measurements with a low interquartile range mean that the middle 50% of times are close together, indicating good reliability, whereas a high interquartile range indicates poor reliability because of a wide spread of journey times.

So, Appendix C of both the Year One and the Year Five reports present journey reliability in the form of box-and-whisker plots that show the interquartile range (IQR) enclosed within a box, together with "whiskers" that stretch out from the 5th percentile to the 95th percentile, to illustrate the range of journey times measured — by definition, 90% of those journeys were on that line and 95% were at least as fast as shown at top of the whisker. In the Baseline Report, the corresponding plots for 2014 can be found in Appendix H (p.62 onwards), which are in a separate document[2] from the table of reliability figures (Table 4.3 on p.27) in the main report.[12]

For some reason, unlike the Baseline and Year One reports, the Year Five report does not include any journey time reliability data for 4 of the 7 periods, i.e. the following periods are now omitted:

- 7am to 8am
- 4pm to 5pm
- overnight (10pm to 6am)
- Saturdays 10am to 4pm

This means the Year 5 report contains journey time reliability data for **only the following periods**:

- 8am to 9am
- 10am to 4pm
- 5pm to 6pm

This lack of data makes it harder to make true comparisons.

From the "Route 1" plots in Appendix C of the Year Five report, all but one of the 95th percentile values have increased by up to 6.5 minutes between Year One and Year Five; the one exception was for the 5pm to 6pm period in the direction towards the airport, where the reduction (i.e. improvement) was 45 seconds. This indicates a general worsening of the maximum journey times.

However, the IQRs are broadly similar in size (when comparing the same time periods in the day with each other), indicating little change in reliability between Year One and Year Five. Also, the means and medians are quite similar, i.e. generally unchanged by less than one minute. The slight exception to that is the 8am to 9am period

in the direction towards High Lane, where the mean increased by 1 minute 11 seconds (the median increased by only 17 seconds). The worst journey-time reliability change for Route 1 was for the 5pm to 6pm period in the direction towards High Lane, although the median reduced by 1 minute 16 seconds, indicating a slightly faster journey for that median vehicle. However, **the omission** of the 4pm to 5pm data **perhaps masks other changes,** as the traffic counts in that direction during the 4pm to 5pm period are similar to the 5pm to 6pm period at Count Point 91114, so a similar worsening might be expected. Of the available reliability data for Route 1, the least reliable period (indicated by the widest IQR, i.e. largest IQR range) is the 5pm to 6pm period in the direction towards High Lane — which I think, matches the general experience of queues that are sometimes very long at the end of the A555 (at the A6 junction towards High Lane) on weekdays at that time of day (and earlier).

For Route 11 (which includes the A6 through High Lane), Appendix C.11 shows that the reliability of all journey periods has worsened since the baseline. The standout period is between 8am-9am in the direction from Newtown along the A6 towards the A555, where there has been a dramatic worsening of reliability, coupled with a huge increase in the journey time for the 95th percentile (213% increase from 20 minutes and 26 seconds to 1 hour 3 minutes and 56 seconds for Year One compared to the baseline). For Year Five, there is a very slight improvement compared to Year One in the 95th percentile time for journey times during the 8am-9am period but it is still over 1 hour 3 minutes, i.e. **209% increase** compared to the baseline. There are also relatively small improvements in Year Five reliability and journey times during that period compared to Year One, but reliability and 95th percentile journey times during all other periods have worsened along Route 11 for Year Five compared to Year One — and all the journey time reliabilities on that route have significantly worsened when compared to the baseline.

Air Quality

For the Baseline report, measurements were made in High Lane during a 6-month period from 14th August 2014 to 12th February 2015 from passive nitrogen dioxide (NO_2) diffusion tubes gathered by AECOM (ref. section 4.6 of the Baseline Report).[12]

For the Year One report, measurements were made in High Lane during two 3-month periods from 16th December 2019 to 13th March 2020; and from 9th July 2020 to 13th October 2020 from passive NO_2 diffusion tubes gathered by AECOM (ref. section 1.0 of One Year Post-Development Air Quality Monitoring Report).[30]

For the Year Five report, measurements were made in High Lane during a 6-month period from 8th January 2024 to 2nd July 2024 from passive NO_2 diffusion tubes gathered by Atkins Réalis, and supplied and analysed by Gradko International Ltd. (ref. section 1 of Year Five (Air Quality) Report).[31]

In our evaluation of the Year One measurements,[32] it was noted that measurements started several months late compared to the Baseline measurements, and that Year One measurements were consequently paused due to lockdown restrictions before being re-started in July 2020. Obviously, such events are beyond our control, but after the publication of the Year One report, High Lane Residents' Association (HLRA) wrote to Stockport Metropolitan Borough Council (SMBC) to request that measurements for Year Five be taken in the same months as those for the Baseline measurements, so as to attempt to make the measurement conditions as consistent as possible. It is accepted that the results from the six-month measurements are processed to generate an annual average and that this processing includes some adjustments that aim to compensate for variations due to seasonality, but surely for the most accurate comparison, it would be preferable if the raw measurements from the different years were made under as similar conditions as possible? This was our consistent message since receiving the Year One report, but it seems to have been ignored.

> **GMCA 2023 Air Quality Annual Status Report** (*not* part of the A6MARR reports)
> Section 3.2 of the Year 5 Air (Air Quality) report references the GMCA 2023 Air Quality Annual Status Report[33], which "reports that there were **no exceedances** of the annual mean NO_2 concentrations recorded within SMBC in 2023". However, on closer inspection, none of the measurement sites for that GMCA 2023 report were in or near High Lane!
>
> The locations of the sites in the GMCA report are listed in Table A.4 (p.231 of the PDF (p.194 of the printed document)), together with annual mean NO_2 concentrations from 2019 to 2023 inclusive. The locations are shown a map, which for Stockport, is in Figure 4 of Appendix D (p.306 of the PDF (printed as p.269)).

The Stockport sites are prefixed with "ST". (There are also some "ST" sites in Figures 9 and 10 of that appendix but they are all also included in Figure 4.) Although the Stockport figures in Table A.4 confirm the lack of any exceedances of annual mean NO_2 concentrations at any of the sites, on pp.149-150 of the PDF (pp.112-113 printed)) it shows 7 exceedances in 2023, with maximum annual mean NO_2 concentration of 49.9 µg/m^3, i.e. exceeding the legal limit by 9.9 µg/m^3. This apparently contradicts the earlier statement about there being "no exceedances" within SMBC but I cannot find any figures in the GMCA report to support the "7 exceedances", so I would urge caution with that interpretation.

Back to the Year 5 (Air Quality) report[31], which does, at least (as expected), include monitoring sites along the A6 in High Lane for levels of nitrogen dioxide in the air. These are shown below in Figure 8.

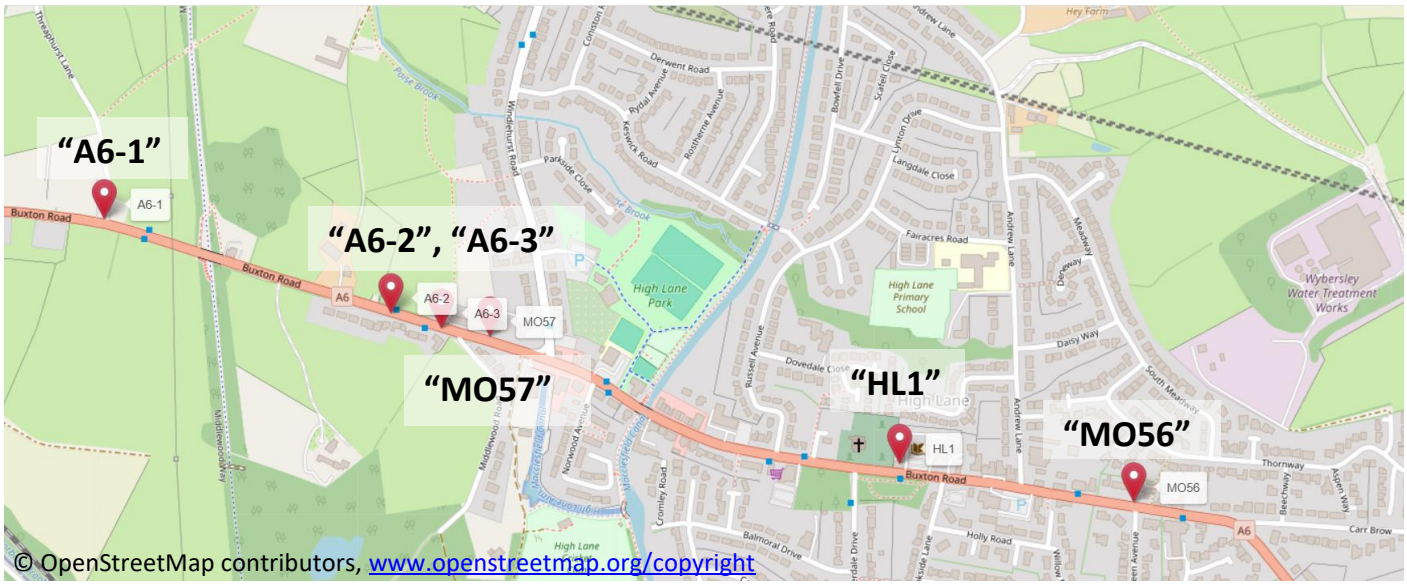

Figure 8: Location of NO_2 Diffusion Tubes near High Lane

The annual mean nitrogen dioxide concentrations for the three phases of the A6MARR project are listed in Table 3 (p.22) of the Year Five (Air Quality) report. I have shown the figures relating to High Lane in Table 3, below, with exceedances of the 40 µg/m^3 limit marked in red.

Location	2014 Annual Mean NO_2 (µg/m^3) "Baseline"	2019 / 2020 Annual Mean NO_2 (µg/m^3) "Year One"	2023 Indicative* Annual Mean NO_2 (µg/m^3) "Year Five"
A6-1	32.7	29.0	28.7
A6-2	31.9	23.4	24.7
A6-3	-	26.3	27.5
HL1	**49.9**	39.1	**40.2**
HL2	21.7	17.6	17.5
MO56	34.1	30.5	30.2
MO57	31.4	32.5	35.1

Table 3: Annual Mean NO_2 Concentrations: Comparison of Phases 1, 2 & 3 in High Lane (and nearby)

* Although the Year Five NO_2 measurements were made in 2024, they are shown in the above table as "indicative 2023" because when the Year Five report was compiled, the annualisation adjustment factors 2024 were not available, so the 2023 adjustment factors were used instead. This is explained in section 5.2.7 (p.34), which adds that it is recommended that when the 2024 adjustment factors become available, the Year Five NO_2 data should be reprocessed, and then listed as 2024 annual means.

As was noted in Table 3 (p.11) of the Year One report, most of the locations (except HL2 and MO56) changed since the Baseline report, although the differences are relatively minor.

The main conclusion from Table 3 is that at site HL1 (near High Lane Library), the legal limit of 40 µg/m^3 for the annual mean concentration of NO_2 in Year Five (2023/4) was **exceeded**. Given the prolonged heavy congestion from queuing traffic at busy times of the day, this is perhaps not surprising. Although most of the levels for Year

Five have reduced compared to the Baseline, many have increased compared to Year One. Indeed, site MO57 shows a continued increase, even from the Baseline.

This is acknowledged in the Year Five (Air Quality) report, in section 5.2.2 ("*Review of Changes between annual mean NO2 reported in 2019 and 2023*"), which notes increases in "*three locations on A6 Buxton Road two in High Lane and one in Disley (MO57, HL1, D2)*". Site D2 is within an Air Quality Management Area (AQMA) within Cheshire East Council's area.

Cheshire East Council's (CEC's) 2024 Air Quality Annual Status Report (ASR),[34] dated June 2024 (last modified August 2024) contains 12 AQMAs declared but, due to falling levels of NO_2 pollution, it proposed to revoke 11 of those AQMAs (pp. 8 - 9 of the PDF, pp. vi - vii), the exception being the **AQMA in Disley**. When I checked the Defra website[35] in June 2025, only 10 of those 11 AQMAs were listed as being revoked, suggesting that the "A553 Lewin Street in Middlewich" AQMA had not been revoked.

Even though the AQMA currently remains in force in Disley, CEC's 2024 ASR shows an annual mean concentration of 26 µg/m^3 in 2023, i.e. below the threshold of 40 µg/m^3. Contrast this with High Lane, which has **only one AQMA within it** (a small zone on the A6 near Station Farm), despite having exceedances elsewhere in High Lane, e.g. at site HL1. Also, note that the Year Five (Air Quality) report claims (ref. Table 6 in Appendix A.1, p.37 of PDF) that site A6-1 is ***not*** in an AQMA, which I believe to be an incorrect claim, judging by the map[36] — which shows an AQMA near the A6 near Shore's Farm (near Threaphurst Lane, i.e. not far outside the boundary of High Lane), but nevertheless covering a larger area than the one in High Lane.

Given the proximity of Disley to High Lane, I have listed annual mean NO_2 concentrations for sites D1 and D2 in Table 4, using results from the Year Five (Air Quality) report. As before, the 2023 figures for these two sites are "indicative". In addition, using the CEC 2024 ASR, I have included figures for site RTA3 (an automatic monitoring site, where I have listed approximate figures (based on reading a graph) for the years 2014 to 2018), as well as the "CE" sites (Cheshire East's non-automatic monitoring sites) for 2019 to 2023.

	Year									
Site	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
D1	33.8	-	-	-	-	26.2	-	-	-	28.2
D2	-	-	-	-	-	32.7	-	-	-	33.5
RTA3	~32	~40	~49	~47	~37	35	25	27	25	26
CE16	-	-	-	-	-	41.0	31.2	33.1	32.7	29.3
CE19	-	-	-	-	-	37.3	27.5	30.2	30.0	27.2
CE82	-	-	-	-	-	19.4	14.4	16.2	14.4	12.5
CE277	-	-	-	-	-	48.6	34.7	40.5	35.4	35.2
CE284	-	-	-	-	-	29.2	22.1	25.2	22.5	20.2
CE309	-	-	-	-	-	-	18.3	20.1	19.3	16.5
CE314 CE315 CE316	-	-	-	-	-	-	31.0	35.0	34.1	26.5

Table 4: Annual Mean NO_2 Concentrations (in µg/m^3) at Disley Sites

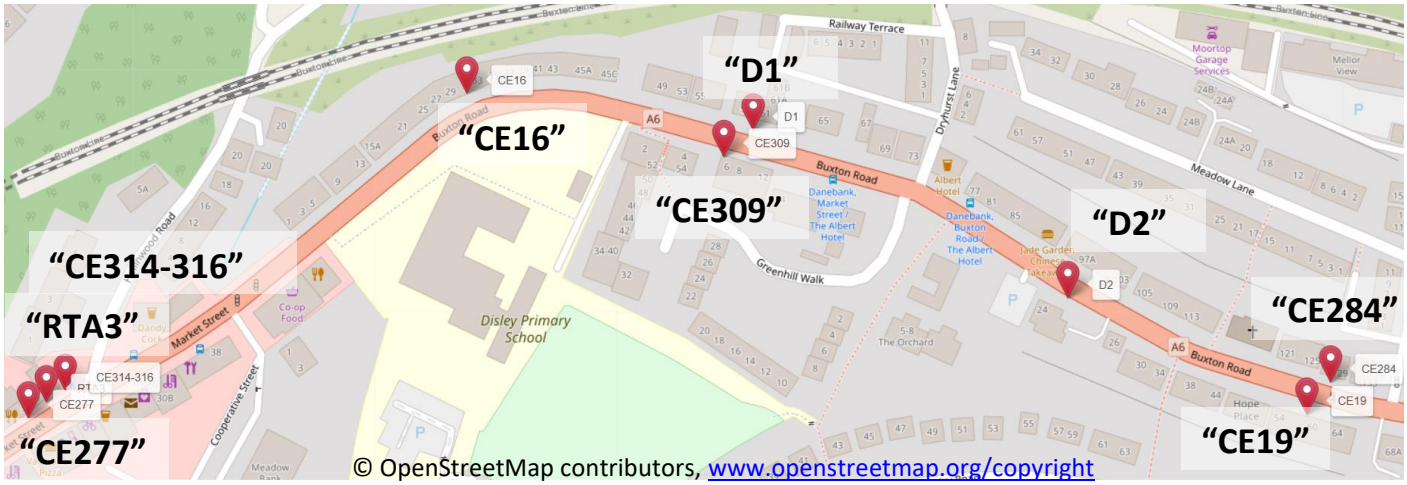

Figure 9: Location of Disley Sites for NO_2 monitoring

Figure 10, below, shows these sites in an overview map, for context.

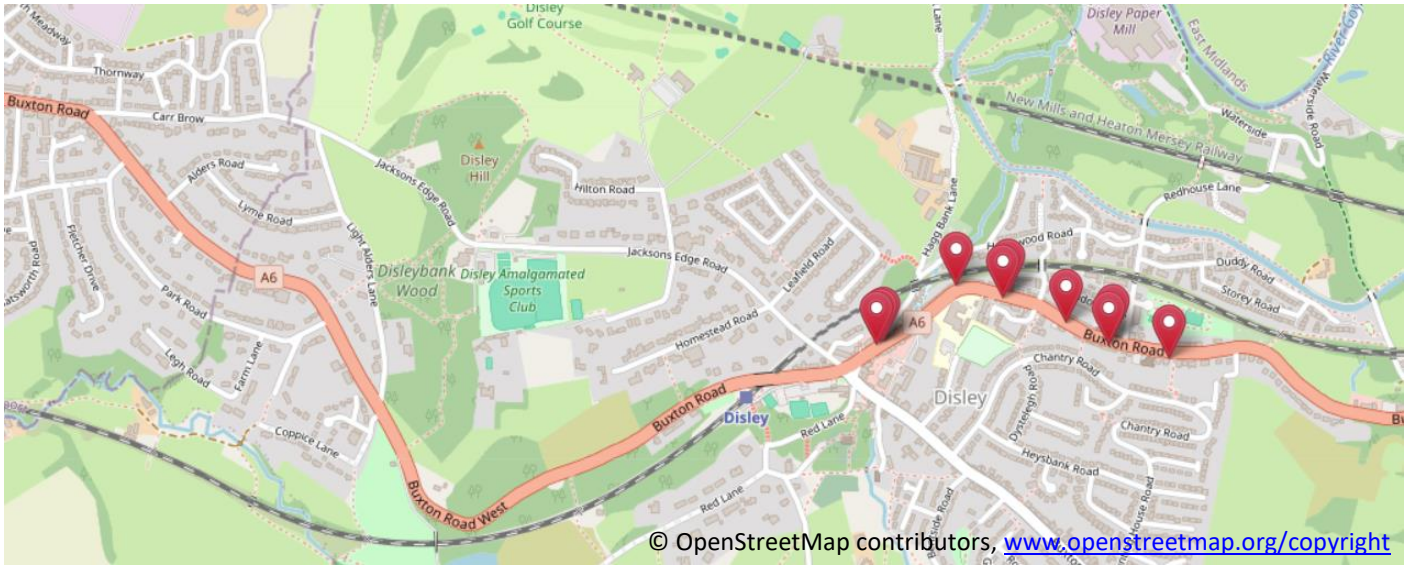

Figure 10: Overview Map of Disley Sites

Acoustic Noise

For the Baseline report, noise-level measurements in High Lane were made on Wednesday 8th October 2014 in the afternoon from 13:59 until 16:59. (Ref. Appendix K of the Baseline Report,[37] Fig. 4.18 and Table 4.18, Site ID5, pp.71-72 of PDF (marked as page 39).)

For the Year One (Noise) report, the measurements were made at the same location in High Lane on Friday 18th October 2019 between 10:23 and 13:23. (Ref. section 3.3. of the Year One Noise Survey Report,[38] Fig. 4 and Table 3, p11.)

For the Year Five (Noise) report, the measurements were made at the same location in High Lane on Monday 16th October 2023 for 15-minute periods starting at 10:00, 11:33 and 12:12. (Ref. section 3.3. of the Year Five Noise Survey Report,[39] p.13.)

Given the fluctuating nature of noise, rather than taking a single measurement (or a few measurements), a useful way of describing noise levels is with "L10" values, usually written L_{10}. For this, a sound meter is used to take many samples per second, expressed in **dB(A)**, (A-weighted decibels — see the box later in this section for further details) measured over a continuous period of time. The "10" in "L10" refers to the level just exceeded for 10% of the measurement duration, thereby taking account of any annoying peaks of noise. L10 is a useful descriptor because it correlates quite closely with the disturbance people feel when close to busy roads, as well as in more rural locations.[40]

Site	Baseline (2014)	Year One (2019)	Year Five (2023)
ID5, High Lane	51.6 dB(A)	50.6 dB(A)	47.1 dB(A)

Figure 11: Noise Level, $L_{A10,\ 18h}$

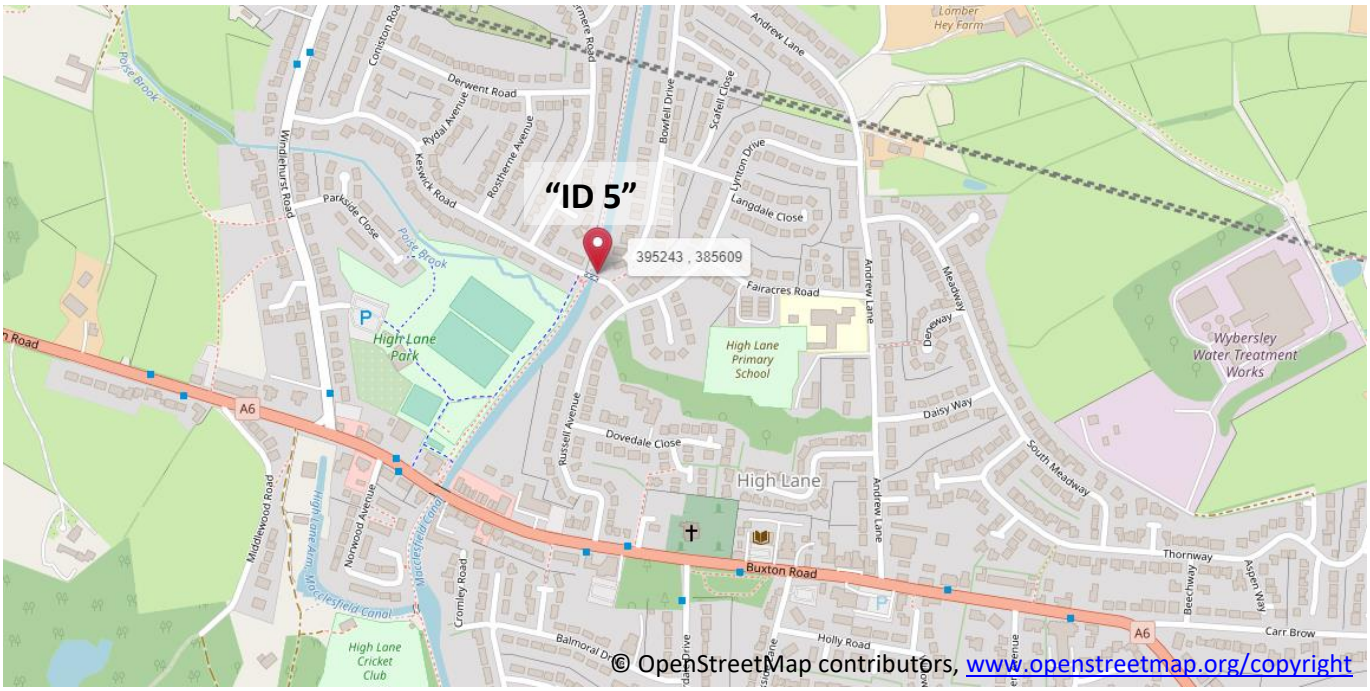

Figure 12: Noise Monitoring Location ID 5, near Keswick Road

As the map in Figure 12 shows, the measurement location, ID 5, is quite some distance from the A6. The Baseline Report (Appendix K)[37] states on p.71 of the PDF file (marked p.39) that the location has a shortest distance of "approximately **290 metres**" from the main road (A6). This compares with approximately **314 metres** (more than 1000 feet) when I tried using Google Maps[41] myself.

It should be noted that originally, High Lane was not included in the set of the A6MARR scheme's 15 monitoring point sites (MP01 to MP15) for measuring of ambient acoustic noise. This initial set of sites is listed in section 13 of the Environmental Statement[42] within the Planning Application for the A6MARR scheme. Perhaps the omission of High Lane from this list may have been because the new road itself is outside the boundary of High Lane and even though it was predicted there would be more traffic travelling through High Lane as a result of the new road, the results of the modelled noise levels showed the impact would be low for High Lane, with the possible exception of Wybersley Road. These results are presented in Figures 13.2 and 13.7 of the Section 13 Figures document[43] associated with the Environmental Statement.

However, after taking into account feedback from public consultations, site ID 5 in High Lane was added to the list, referenced in Table 4-8 of the Baseline Report. In the Year Five (Noise) report, Note (2) on p.33 says:

> "*This position is relative far from A6 and a dense residential area is between the measurement position and A6 which reduce the noise from A6. In this case, the road traffic on local roads may cause the noise level to fluctuate in a larger range.*"

This is in line with expectations for a site so far away from the A6, i.e. an apparent "improvement" of **4.5 dB** (from the baseline year result of 51.6 dB(A) to the Year Five result of 47.1 dB(A)) is actually within the measurement range of the three readings in the Baseline year, which ranged from 49.6 dB(A) to 54.7 dB(A), i.e. a difference of **5.1 dB on the same day** during the 3-hour measurement period! In other words, at this site, with these measurements, no clear effect (attributable to the A6MARR scheme) is discernible.

Also, note that each of the three values $L_{A10,1h}$ values in the Baseline report are based on a measurement duration of 1 hour, as opposed to 15 minutes for those in the Year Five report, where the values are $L_{A10,15min}$. Changing the measurement method makes it difficult to make like-for-like comparisons. A further point is that the seemingly non-systematic choice of start times in the Year Five report (as opposed to start times that are exactly 1 hour

apart in the other two reports) have the potential to lead to accusations of measurement bias in the Year Five report.

As a point of interest, the **same basic error** in quoting the formula for L_{10} (3-hour) is present in all three reports: Baseline, Year One (Noise) and Year Five (Noise)! (The upper bound of the range of times to start from is shown in the reports with a **greater**-than-or-equals sign instead of a **less**-than-or equals sign.) And in both the Year One and Year Five reports, the formula for L_{10} (18-hour) is incorrectly shown with a minus sign (with spaces on either side), rather than a hyphen. These formulae, as written, are clearly nonsense but have obviously not been used for the calculations, and so can be safely ignored. The formulae should have been:

$$L_{10}(\text{18-hour}) = L_{10}(\text{3-hour}) - 1\text{dB(A)} \qquad \textbf{Eq. (1)}$$

$$L_{10}(\text{3-hour}) = \tfrac{1}{3}\textstyle\sum_{10\le t\le 14}^{t+2} L_{10}(\text{hourly})_t \qquad \textbf{Eq. (2)}$$

The idea is that L_{10}(18-hour), which is nowadays often written $L_{A10,18h}$, is the average of the 18 "hourly sound-level results", where each "hourly result" is the A-weighted** sound level in dB(A) exceeded for 10% of each hour (i.e. at the level of the 90th percentile, representing the level that separates the 10% loudest levels [from the other 90%] in the hour), over a fixed 18-hour period from 06:00 to 24:00, which can be written as:

$$L_{10}(\text{18-hour}) = \tfrac{1}{18}\textstyle\sum_{t=6}^{t=23} L_{10}(\text{hourly})_t \qquad \textbf{Eq. (3)}$$

** "A-weighting" is the common name for a standardised frequency-weighted curve that is applied to sound levels in such a way as to reflect how the human ear perceives sound. The weighting gives more value to frequencies within the range of human hearing and less value to frequencies outside this range. The A-weighting filter is applied to the sound signal, effectively attenuating low and high frequencies, while preserving the mid-range.

But the problem is that it's often impractical and time-consuming to have to run the sound meter continuously for 18 hours to obtain the 18 values that are then averaged. So, a shortcut is to use the "rule of thumb" that is described by the first formula, Eq.(1), known as the "Shortened Measurement Procedure". This states that provided three hourly values are supplied from three consecutive hours between 10:00 and 17:00, subtracting 1 decibel from the arithmetic mean of the three values can be regarded as equivalent, according to the CRTN[44] in paragraph 43. This reduces the measurement time from 18 hours to 3 hours.

A further "shortcut" was made in the Year Five measurements by invoking paragraph 41.2 of the CRTN — which defines the minimum sampling time ("length") in terms of traffic flow in vehicles per hour, and the registration rate in samples per minute from the sound-level meter. The Rion-branded meters used for these measurements can generate 10 samples per second (i.e. 600 samples per minute), in which case, the sampling time could be reduced to about 15 minutes, rather than one hour. But it would be misleading to say that Eq.(1) was used to calculate L_{10}(18-hour) because the sampling time was **not one hour**. Therefore, I think a more accurate way of describing this version of the "Shortened Measurement Procedure" would be the following, with t representing the starting hour of the three consecutive measurement periods from which each 15-minute sampling period is selected:

$$L_{A10}(\text{18-hour}) = \tfrac{1}{3}\textstyle\sum_{10\le t\le 14}^{t+2} L_{A10}(\textbf{15 minutes})_t - 1\text{dB(A)} \qquad \textbf{Eq. (4)}$$

Conclusions

1. At Site 55 (A6 near the Royal Oak), in 2023, the annual average daily traffic (AADT) was 27,600 — an **increase of 6700 vehicles per day** since the baseline in 2014. Apart from Site 77 (a site near junction 6 of the M56 motorway) and Site 83 (a site on the A523 that, with an AADT in 2023 of 20,800, is still well below that of Site 55 on the A6), this is **the highest increase for any single-carriageway road** in the study area.

2. The percentages of HGVs seem suspiciously low. We wrote to SMBC to seek clarification, and received a response on 27th June 2025. Details are given in Appendix 2, but it does not appear to fully explain why the HGV percentages in the report are quite so low. Further explanation is needed.

3. By 2024, traffic in Stockport borough had exceeded the 2019 pre-pandemic level, whereas in England as a whole, it was still below the 2019 pre-pandemic level.

4. The definition of the "peak" hours for traffic is rigid and arguably dated, with the effect that the "peak" hours reported may not necessarily correspond to the periods of highest traffic volume. This can result in misleading conclusions.

5. The longest average journey times through High Lane (on Route 11, westbound on weekdays, 8am-9am) has increased in Year Five (2023) by over 11 minutes since the Baseline (2014). This is **nearly double the journey time** since the Baseline, and more than double when the Year One journey time is compared with the Baseline.

6. The measurement periods used for journey times were different for each phase (Baseline, Year One and Year Five). No explanation of this was supplied, even though it was stated in the Year Five report that data was available from the supplier "for all time periods from January 2008". The use of different periods makes the comparisons less meaningful, although it is accepted that there may be a need to exclude some data because of particular circumstances rendering the measurements untypical.

7. The journey time **reliabilities** on Route 11 (through High Lane) have **significantly worsened** across all listed measurement periods in Year Five compared to the Baseline. The IQR (interquartile range) for that westbound route during 8am-9am has increased by about **450%** (an estimated range of 160 seconds (2 minutes 40 seconds) in 2014, compared with an IQR of 877 seconds (14 minutes 37 seconds) in 2023). However, there are also far fewer measurement periods in the Year Five report, thereby omitting data for what was the busiest period on that route in the Baseline: 7am-8am. Therefore, it is strongly suspected that worsening of the Year Five journey reliabilities is **understated**.

8. Baseline Year (2014) air quality measurements showed an **annual mean concentration of NO_2** at Site HL1 near High Lane Library exceeded the legal limit of 40 µg/m^3. Although the Year Five measurements (2023 indicative) have improved since then, the limit was nevertheless **still exceeded** by 0.2 µg/m^3. Disley have retained their AQMA (Air Quality Management Area) in 2025 even though their latest figures (from 2023) show the level is below the legal limit by a margin of 4.8 µg/m^3. This is still high. We, in High Lane, however, do not currently have an AQMA near site HL1, even though the level exceeds the legal limit (according to Year Five data) and has had a history of exceedances.

9. Baseline Year (2014) noise measurements at Site ID 5 in High Lane (about 0.3 km away from the nearest point of the A6) for the three measurement hours varied by more on that day than the difference between the overall Baseline Year figure and the overall Year Five figure. In other words, at that remotely located site (far away from the A6), there was no clear noise impact attributable to the A6MARR scheme.

10. Key performance indicators that were originally promised in the Business Case *Outline Scheme Evaluation Plan* do not seem to have been covered in the Year Five reports. These include:
    - Effects on road safety (number and severity of accidents)
    - Modal shifts (evidence of switching from private cars to other modes of transport)
    - Economic impacts (economic development and job creation)
    - Climate impacts (greenhouse gases)

- Public Transport (bus journey times)

In summary, it is clear that there have been (and still are) some significant negative effects in High Lane since the construction of the A6MARR. There is substantially more traffic and congestion on the A6, and air pollution remains high. It is well known that when traffic is congested, internal combustion engines are much more polluting (due to the reduced efficiency because of slow speeds, idling and changes of speed) than when flowing freely and driving at a steady speed.[45]

It is also well known that the introduction of new highway capacity, such as the A6MARR, typically attracts additional amounts of traffic, and the results in these reports clearly demonstrate that there been a substantial increase on feeder routes such as the A6 in High Lane.

On the positive side, for those who need to travel via the A6 to Manchester Airport along Route 1, compared to the legacy route of Route 2, it is now generally quicker. However, it is worrying that TfGM's Greater Manchester Strategy 2040[46] document (published in 2021) states that, "*If Manchester Airport reaches its goal of 45million passengers per year and achieves its mode share targets, there would be* ***c.60% more car trips by airport workers than at present***", although it caveats this by adding "the increase may be somewhat lower if airport worker productivity significantly increases". Then it concludes by saying, "This does not include additional traffic from Airport City, A556, A6MARR, Wythenshawe Hospital and HS2".

Leaving aside the Birmingham-Manchester section of the HS2 rail link (which was cancelled in October 2023[47] and later confirmed by the Secretary of State for Transport in June 2025 to be cancelled, saying, "We won't reinstate cancelled sections we can't afford"[48]), the **Airport City** development (renamed **MIX Manchester** [MIX = Manufacturing Innovation Exchange] in May 2024[49], [50]) is planned to be "**one of the largest** science and innovation campuses in the UK", creating **up to 8000 jobs**. Manchester City Council approved[51] the Strategic Regeneration Framework (SRF)[52] for this project in November 2024. Although the 8000 employees, associated deliveries and visitors probably won't *all* be using the High Lane A6-A555 route, it is very likely that this will add yet further pressure on this already highly congested route.

Other future pressures on the road may arise from the UK government's mandatory housing target to deliver 1.5 million more homes in England.[53] Even if these new homes are not built in or near High Lane, it is likely that additional housing will result in even more traffic and congestion on the A6 (and other routes, e.g. Windlehurst Road) through High Lane.

The A6 Corridor Study[54] (updated in 2014) continues to include a **High Lane / Disley bypass** in its list of "potential longer-term measures", as does the Five Year Transport Delivery Plan (2021-2026) of the Greater Manchester Transport Strategy 2040,[55] where it is listed under the heading "beyond the five year delivery plan" as "*A bypass of the settlements of High Lane and Disley, promoted by Cheshire East Council*".

More locally, the High Lane Village Neighbourhood Development Plan 2021-2037[56] also mentions a High Lane / Disley bypass, where it includes some key guidance, such as in paragraph 4.38, emphasising the importance of the design to be "*free-flow to ensure that the journey time through High Lane village is not quicker than travelling along the bypass*".

Finally, the SEMMM Strategy Refresh[5] (published in May 2018) on p.66 "*also supports High Lane-Disley Relief Road, to connect the A6 at Newtown with the A6 to M60 Relief Road near Hazel Grove. This would provide an A6 bypass for the villages of High Lane and Disley. Without this scheme, the A6 to M60 Relief Road would increase flows through this section, in addition to traffic induced by the soon to be opened A6MARR*".

Although such a scheme would be likely to significantly alleviate the traffic-related problems in High Lane, the likelihood of this being developed soon still seems very low at the moment.

Appendix 1 – Miscellaneous Historical Information

The A6, which runs between Luton and Carlisle for 282 miles, is Britain's fourth longest road (and England's third longest).[57] During the construction of the A6MARR, a team of archaeologists worked "*to ensure that any potential archaeological findings during the works are accurately identified and recorded. Findings to date include an Iron Age roundhouse, a Roman road and Post Medieval field system*".[58] The accompanying maps are listed in Appendix 9[59] of the Environmental Statement[60] of the A6MARR Planning application.[61]

In paragraph 9.4.7 of that Environmental Statement, it states "*there are three locations where evidence suggests the presence of Roman roads. The first of these is a road built by the Romans between Buxton and Manchester. The road is thought to have been on the line of the existing A6 Buxton Road (Figure 9.1 - site 130) although research in the mid 20th century suggests it may have followed* ***Carr Brow and Jacksons Edge Road*** *east of the proposed scheme corridor*". This section of the road, numbered **71b** by Ivan D. Margery on p.97 of his book "*Roman Roads in Britain: Volume II*", published in 1957, is illustrated on the Roman Roads Research Association website[62] and is an example of one of the northern sections of the A6 that are known to have Roman origins.

Moving forward from Roman times by many centuries to February 1775, we can see that even then, the matter of local streets being too narrow for the needs of the time was raised in the House of Commons, where a petition was presented from "*the Inhabitants and Owners of Houses and Lands, within the Town and Township of Stockport…Setting forth, That the town of Stockport is very populous, and a Place of great Trade and Business and the Inhabitants thereof, and Persons resorting thereto,* ***suffer great Inconveniences****… and that the great public Road from Manchester and other adjacent Towns, to the Metropolis, lies through the town of Stockport; and that several Streets and Passages, within the said Town, through which the said public Road runs,* ***are too narrow, and are very incommodious****."* This information, based on records in the House of Commons Library, was referenced in a speech by the MP for Hazel Grove in 2017.[63]

Appendix 2 – Heavy Goods Vehicles

The following A6MARR documents use the term **HGV** but not **OGV** (or OGV1 or OGV2):

- Planning Application: Transport Assessment[24]
- Baseline Report (Monitoring & Evaluation)[12]
    - Appendices J to L[37]
- Year One Traffic Flows and Journey Time Report[18]
- Year Five Traffic Flows and Journey Time Report[13]

So, there was no reason to suspect, from any of these five documents, that "HGV" should be interpreted as meaning anything other than **Heavy Goods Vehicle** in the everyday sense of the word. In a technical sense, HMRC defines HGVs as:[64]

> "*mechanically propelled roadvehicle that is of a construction primarily suited for the carriage of goods or burden of any kind and designed or adapted to have a maximum weight exceeding 3,500 kilograms when in normal use and travelling on a road laden*."

The DfT definition has essentially the same meaning but is more concise:[65]

> "*all goods vehicles over 3.5 tonnes gross vehicle weight*"

The very recent reply from SMBC's specialist advisors to our querying of a suspiciously low set of HGV figures was… they thought that the Baseline analysis used what the DMRB (Design Manual for Roads and Bridges) referred to as "**OGV2**" ("Other Goods Vehicles 2": a category of vehicles over 3.5 tonnes that includes 4-axle rigid vehicles and all articulated vehicles) to mean "**HGVs**", and although that DMRB guidance has been withdrawn, for consistency, the Year One and Year Five reports continued to use that "old" definition of HGV. Fair enough, but I can't see any mention in the reports of this having been done, which I think is an important omission.

Anyway, the *current* definition of HGVs (if OGVs are involved) is "Heavy goods vehicles (HGVs) are defined as other goods vehicles (**OGV1 and OGV2**)".[66] So I searched for earlier definitions that defined HGVs as being restricted to OGV2 only. I could not find any references for this, but see the next-but-one paragraph.

So, with all OGV1s (rigid vehicles over 3.5 tonnes gross weight with 2 or 3 axles[67]) omitted, does this explain why the HGV figures in the report are less than we expected? I don't think so. When I applied this change to independent traffic count point data for nearby sites on the A6, the HGV figures I obtained were still not reduced to anywhere near the kind of levels in the A6MARR reports. The reply from the advisors did, however, say that they had recalculated the HGV percentage figure of **1.0%** reported for Year Five at Site 55 and obtained **10.8%** using the current definition of HGVs. I think this revised figure is more in line with our expectations.

There was a further clue in the reply as to where the association of OGV2 with HGVs had originated. It said that a particular vehicle classification had been used that had equated OGV2 to "heavy" and OGV1 to "medium". After I had deduced that "metrolink" in the reply was a likely typo for a company called MetroCount and that "Euro13" was likely to be MetroCount's proprietary classification scheme for vehicle types (and not a European Union scheme such as Euro 6 or Euro 7 that applies to vehicle emissions), I think I now have enough information to be able to piece together a translation of vehicle classification schemes. My understanding is that MetroCount's Euro 13 scheme is based on their pneumatic tube units (the pairs of rubber strips, placed a known distance apart, laid across carriageways), whereby the relative time delays of tyres detected passing over the first strip to the next can be used to infer distances between vehicles' axles, and thereby classify 12 different types of vehicle, plus an "unidentified vehicle" type, bringing the total number of categories to 13 — presumably explaining the "13" in the scheme name. From that, I have constructed the following table, but note that due to lack of time in writing this appendix, I have not been able to check it as thoroughly as I normally would but I have included references for all sources, for maximum transparency.

Note that I cannot see any difference between the definitions of OGV types in the withdrawn DMRB document (from 2006) compared to the one that replaces it (from 2020).

Type of Vehicle	Old[68] DMRB Vol.7 Section 2 Part 1 HD 24/06 November 2006	New[69] DMRB CD224 Rev.0 March 2020	Euro13 Class[70]	No. of Axles (including any towed elements)	Euro13 Aggregate[71]	DfT[72]
Cars, Light Vans, Light Goods Vehicles, Motorcycles, Pedal Cycles, etc.	-	-	1	2,3,4	Light	Car, LGV, 2WMV, PC
Buses & Coaches	PSV	PSV	12	2,3	**Heavy**	Buses & Coaches
2-axle rigid	OGV1	OGV1	2, 5	2, 3,4,5	Light, Medium	HGVR2
3-axle rigid	OGV1	OGV1	3,6	3,5,6	Medium	HGVR3
3-axle articulated	OGV2	OGV2	7	3	**Heavy**	HGVA3
4-axle rigid	OGV2	OGV2	4	4	Medium	HGVR4
4-axle articulated	OGV2	OGV2	8,10	4	**Heavy**	HGVA3
5-axle articulated	OGV2	OGV2	9,10	5	**Heavy**	HGVA5
6 (or more)-axle articulated	OGV2	OGV2	11	6	**Heavy**	HGVA6
Unidentified	-	-	13	-	-	-

Table 5: Vehicle Classification Cross-Reference

Constructing this table has enabled me to map "MetroCount Euro13" categories to those used for DfT traffic counts — as shown in the two columns on the right. The green-shaded vehicle types in the above table relate to HGVs, as defined by the Department for Transport, the vehicle codes for which are shown in the rightmost column.

Based on the reply from SMBC's specialist advisors regarding OGV2s, I would have expected to see the vehicle types shown in blue not included in the total of HGVs because they are OGV1s. But if the Euro13 "Heavy" categories were used for the report, 4-axle rigid vehicles (in red) would **also be omitted** from the HGV total, and interestingly, buses and coaches would be ***added*** to the HGV total, even though they are regarded as a separate category in DfT traffic counts.

But even removing 4-axle rigid vehicles from the DfT counts, without adding any buses and coaches, the totals for HGVs in the DfT counts that I am using to cross-check the A6MARR reports do not reduce to the level in the reports. I think there is still something amiss with the HGV figures in the report, even after accounting for the OGVs.

For example, at count point 90082[23] (located on the A6 just past Threaphurst Lane in the direction towards Hazel Grove), in 2018, the AADT was 23,389 motor vehicles (or 23,489 if pedal cycles are included). Of these, 1570 were HGVs using the DfT definition, i.e. **6.7%** (with or without pedal cycles). Removing OGV1 vehicles from the HGV total would reduce the HGV total by 558, giving 1012 HGVs, i.e. **4.3%**, which is still more than 4 times the average daily number of HGVs. Even removing (because of the Euro13 classification of "Medium") the "OGV2" 4-axle rigid vehicles would reduce the HGV total by a further 320, to 692 HGVs, i.e. 3.0% (or 2.9%, including pedal cycles), which is stretching the point and still around 3 times the percentage at Site 55 in the report.

Of course, Count Point 90082 is not at the same location as Site 55 but it's fairly close. With a different Count Point (91114[21], on the A6 in High Lane near the Red Lion, which has more recent traffic figures but a lower count because of its location) the 2024 AADT for all motor vehicles was 20,624 of which 1431 were HGVs: **6.9%,** which is similar to CP 90082. Removing OGV1 vehicles from the total reduces it by 387 to 1044 HGVs, which is **5.1%**, and further removing "OGV2" 4-axle rigid vehicles further reduces the total by 189 to 855 HGVs, i.e. 4.1%, which is stretching the point and point and still around 4 times the percentage at Site 55 in the report.

I am not convinced that a historical definition of equating HGVs with "OGV2s only", is sufficient to explain the very low percentages of HGVs listed in the reports.

References

[1] A6MARR / A555 open to traffic,
- http://www.semmms.info/a6marr-opens-to-traffic/
- https://web.archive.org/web/20201019212553/https://www.stockport.gov.uk/news/brand-new-relief-road-opens-to-traffic
- https://www.stockport.gov.uk/a6-to-manchester-airport-relief-road
- https://www.manchestereveningnews.co.uk/news/greater-manchester-news/manchester-traffic-travel-news-october-15242516#:~:text=is%20set%20to-,open%20on%20Monday%20October%2015,-.
- https://www.sabre-roads.org.uk/wiki/index.php?title=A555

[2] http://www.semmms.info/wp-content/uploads/A6MARR_BaselineReport_Final-appendices.pdf, ***Appendices*** *to A6MARR Monitoring and Evaluation* ***Baseline Report***, 2018, Appendix A, paragraph 2.49 [where the official name of that section was the MAELR (Manchester Airport Eastern Link Road), which actually stopped far short of the airport. Fig. 2.1 of that appendix has a map of this.]

[3] HC Deb 6 June 2006, vol 477, col 60WH, [online] Accessed 25 June 2025, https://hansard.parliament.uk/Commons/2006-06-06/debates/06060647000004/A555ReliefRoad#:~:text=the%20%E2%80%9Croad%20to%20nowhere%E2%80%9D

[4] Steer Davies Gleave, Llewelyn-Davies, WS Atkins, *South East Manchester Multi Modal Study (Final Report)*, September 2001, http://www.semmms.info/wp-content/uploads/semmms-report-FINAL.pdf

[5] Cheshire East Council, Stockport Metropolitan Borough Council, SNC-Lavalin, Atkins, *South East Manchester Multi-Modal Strategy (Consultation Draft)* aka "SEMMMS Refresh", May 2018, http://www.semmms.info/wp-content/uploads/SEMMMS-Refresh-Draft-strategy-report.pdf

[6] Poynton Relief Road (PRR), https://www.openstreetmap.org/#map=14/53.3387/-2.1307

[7] Cheshire East Council, *Poynton Relief Road opens to traffic after eventful ribbon-cutting ceremony*, last reviewed March 2025, https://www.cheshireeast.gov.uk/highways_and_roads/roadworks/major-projects/poynton_relief_road/poynton_relief_road.aspx

[8] Manchester Evening News, *Controversial £477m M60 link road 'dead in the water' after government funding blow*, 2 July 2018, https://www.manchestereveningnews.co.uk/news/greater-manchester-news/controversial-477m-m60-link-road-14832120

[9] TfGM, *Greater Manchester Transport Strategy 2040: Five-Year Transport Delivery Plan 2021-2026*, https://downloads.ctfassets.net/nv7y93idf4jq/5Y95swfmf42WVZozNA4fE/84092928376473c507ec000098b18c35/Delivery_Plan_2021-2026_Jan_2021_Final.pdf, January 2021 (finalised February 2021), p.276 of PDF (p.22 of Stockport Summary GMTS2040 Implementation Plan 2021)

[10] WSP, TfGM & SMBC, *SEMMMS A6 to M60 Relief Road Study: Strategic Outline Business Case, Volume One: Main Report*, Project No. 70019764, May 2017 (draft published October 2017), section 2.4.43, p.48, http://www.semmms.info/wp-content/uploads/A6-M60-Relief_Road_Scheme_SOBC_Working_Draft_v10_Client-Review.pdf,

[11] Atkins, *A6MARR Outline Scheme Evaluation Plan*, *A6MARR Business Case, Appendix J*, November 2012. See sections 5.1, "Evaluation Milestones and Outputs" and 4.24, "Wider Economic Impacts", http://www.semmms.info/wp-content/uploads/2016/02/Appendix-J-Outline-Scheme-Evaluation-Plan-pdf-2.96mb.pdf

[12] A6MARR Monitoring and Evaluation **Baseline Report** (using 2014 data), report dated April 2016 (but finalised June 2018), http://www.semmms.info/wp-content/uploads/A6MARR_BaselineReport_Final.pdf

[13] AtkinsRéalis, *A6 to Manchester Airport Relief Road:* ***Year 5 Report — Traffic and Journey Times*** *Summary*, March 2025, https://www.stockport.gov.uk/documents/a6-marr-technical-documents

[14] Not listed in the *A to Z Index*, https://www.stockport.gov.uk/atoz, and not listed in results of the Search facility on that site, which typically redirect to http://www.semmms.info/

[15] Not included in any news releases on https://www.stockport.gov.uk/news

[16] https://hlra.org.uk/environment/a6marr/ and https://hlra.org.uk/news/. It is also referenced in the June 2025 minutes as an item in the AOB section.

[17] DfT, *Road Traffic Statistics: About → Data Sources → Automatic Traffic Counts*, https://roadtraffic.dft.gov.uk/about, accessed 18-May-2025

[18] Atkins, *A6MARR Monitoring and Evaluation: **One Year** Traffic Flows and Journey Time **Report***, July 2020, http://www.semmms.info/wp-content/uploads/A6-to-Manchester-Airport-Relief-Road-Monitoring-and-Evaluation-July-2020.pdf

[19] DfT *Road Traffic Estimates: Annual Methodology Note*, September 2022, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1107099/annual-methodology-note.pdf

[20] DfT, https://roadtraffic.dft.gov.uk/about#:~:text=and%20milk%20floats.,Heavy%20goods%20vehicles,(HGV)%3A%20Includes, also https://data.dft.gov.uk/gb-traffic-matrix/all-traffic-data-metadata.pdf

[21] DfT, *Manual Count Points, Site Number 91114*, https://roadtraffic.dft.gov.uk/manualcountpoints/91114

[22] Institute for Government, *Timeline of UK government coronavirus lockdowns and restrictions*, *March 2020 to December 2021*, https://www.instituteforgovernment.org.uk/sites/default/files/2022-12/timeline-coronavirus-lockdown-december-2021.pdf

[23] DfT, *Manual Count Points, Site Number 90082*, https://roadtraffic.dft.gov.uk/manualcountpoints/90082

[24] Atkins, *A6MARR Transport Assessment (Main Text)*, 2013, http://a6marr.stockport.gov.uk/746597/760095/760276.pdf, Figs. 9.1, 9.6 & 9.7 (pp. 154, 173-174)

[25] DfT dataset (spreadsheet) *TRA8903: Motor vehicle traffic (vehicle miles) excluding trunk roads by local authority in England*, 12th June 2025, spreadsheet is listed on https://www.gov.uk/government/statistical-data-sets/road-traffic-statistics-tra

[26] DfT, *Guidance on road classification and the primary route network*, 13th March 2012, https://www.gov.uk/government/publications/guidance-on-road-classification-and-the-primary-route-network/guidance-on-road-classification-and-the-primary-route-network#appendix-a--terminology

[27] National Highways, *Roads we manage*, accessed 25 June 2025, https://nationalhighways.co.uk/our-roads/roads-we-manage/

[28] Statutory Instrument 2002 No. 1168, Highways England, *The A6 Trunk Road (Derby to Stockport) (Detrunking) Order 2002*, https://www.legislation.gov.uk/uksi/2002/1168/made

[29] Morris, J., *Report of the Director of Place Management: High Lane Hartington Road-Park Road Trial Road Closure*, November 2023, https://democracy.stockport.gov.uk/mgConvert2PDF.aspx?ID=227179

[30] AECOM, *A6MARR **1 Year** Post-Development Air Quality Monitoring [**Report**]*, report dated November 2020 (but finalised April 2021), http://www.semmms.info/wp-content/uploads/A6-Manchester-Airport-relief-road-air-quality-monitoring-report.pdf

[31] AtkinsRéalis, *A6MARR **Year 5 Report — Air Quality** Technical Note Post-Opening Monitoring & Evaluation*, March 2025, https://www.stockport.gov.uk/documents/a6-marr-technical-documents

[32] Williams, D. (HLRA), *A6MARR: An Evaluation of 1-Year Post-Opening Data from a Local Perspective*, 27th November 2022, https://hlra.org.uk/environmenta6marr/view/A6MARR_Evaluation_(1).pdf

[33] Greater Manchester Combined Authority (GMCA), *2023 Air Quality Annual Status Report (ASR)*, dated June 2024 (finalised September 2024), https://downloads.ctfassets.net/tlpgbvy1k6h2/3XAEIZRea7W64L3A61H8R7/7a092aac00f18413a78ac611418526fe/ASR_2024_reporting_on_2023_Air_Quality_Final.pdf

[34] Cheshire East Council, *2024 Air Quality Annual Status Report (ASR)*, June 2024 (last modified August 2024), https://www.cheshireeast.gov.uk/pdf/environment/air-quality/cheshire-east-2024-annual-status-report.pdf

[35] Defra, *List of Revoked AQMAs*, site accessed 11th June 2025, https://uk-air.defra.gov.uk/aqma/revoked?la=C&country=england&pollutant=all

[36] Defra, *UK AIR: Air Information Resource: AQMAs Interactive Map*, https://uk-air.defra.gov.uk/aqma/maps/ site accessed 11th June 2025.

[37] Atkins, ***Appendices J to L*** *of A6MARR Monitoring and Evaluation* ***Baseline Report*** (using 2014 data), report dated April 2016 (but finalised June 2018), http://www.semmms.info/wp-content/uploads/A6MARR_BaselineReport_Final_appendixes_JtoLonly.pdf

[38] Atkins, *A6 to Manchester Airport Relief Road: Post-Completion* ***Noise Survey Report*** *(**Year 1**),* October 2020, http://www.semmms.info/wp-content/uploads/Semmms-post-completion-noise-survey-report.pdf

[39] AtkinsRéalis, *A6 to Manchester Airport Relief Road: Post-Completion* ***Noise Survey Report (Year 5)***, January 2024 (finalised August 2024), http://www.semmms.info/wp-content/uploads/A6-to-Manchester-Airport-Relief-Road-Post-Completion-Noise-Survey-Report-Year-5.pdf

[40] Gracey and Associates, Sound and Vibration Basics: Statistical Noise Levels, Ln, L10, L90%, etc., accessed 25 June 2025, https://www.gracey.co.uk/basics/statistics-b1.htm

[41] https://www.google.co.uk/maps/place/53%C2%B022'02.4%22N+2%C2%B004'22.6%22W/@53.3658584,-2.0737361,17z/data=!4m5!3m4!1s0x0:0xb3147eb7f4b4a91e!8m2!3d53.367326!4d-2.0729529

[42] Mouchel, *A6MARR Planning Application*, *Environmental Statement*, October 2013, http://a6marr.stockport.gov.uk/746597/760092/760274.pdf

[43] Mouchel, A6MARR Planning Application, *Environmental Statement, Section 13 Figures*, October 2013, http://a6marr.stockport.gov.uk/746597/760092/813246/813270.pdf

[44] Department of Transport Welsh Office, *Calculation of Road Traffic Noise*, Her Majesty's Stationery Office, London, 1988, https://n-somerset.gov.uk/sites/default/files/2022-11/CD13.02%20Department%20of%20Transport%20and%20Welsh%20Office%20%281988%29.%20Calculation%20of%20Road%20Traffic%20Noise..pdf

[45] DfT / Ricardo-AEA, *Production of Updated Emission Curves for Use in the National transport Model*, February 2014, https://assets.publishing.service.gov.uk/media/5a74ea3140f0b65f6132345c/updated-emission-curves-ntm.pdf

[46] TfGM, *Greater Manchester Transport Strategy 2040*, January 2021 (finalised February 2021), p.81, https://assets.ctfassets.net/nv7y93idf4jq/01xbKQQNW0ZYLzYvcj1z7c/4b6804acd572f00d8d728194ef62bb89/Greater_Manchester_Transport_Strategy_2040_final.pdf

[47] Prime Minister's Office, DfT, Press Release: *PM redirects HS2 funding to revolutionise transport across the North and Midlands*, 4th October 2023, https://www.gov.uk/government/news/pm-redirects-hs2-funding-to-revolutionise-transport-across-the-north-and-midlands

[48] DfT, Oral statement to Parliament: *Resetting the High Speed Two (HS2) programme*, 18th June 2025, https://www.gov.uk/government/speeches/resetting-the-high-speed-two-hs2-programme

[49] Marketing Manchester, Kitmana, A., *Joint Venture launches MIX MANCHESTER – the UK's first airport-based science and innovation campus*, 14th May 2024, https://www.investinmanchester.com/resources/latest-news/post/joint-venture-launches-mix-manchester-the-uks-first-airport-based-science-and-innovation-campus/

[50] MIX Manchester, https://mix-manchester.com/

[51] Manchester City Council, Executive Committee, *Minutes for Item 90: MIX: Airport City updated Framework*, 13th November 2024, https://democracy.manchester.gov.uk/mgAi.aspx?ID=15302

[52] Manchester City Council, Director of City Centre Growth and Infrastructure, *MIX: Airport City updated Framework*, 13th November 2024, https://democracy.manchester.gov.uk/documents/s50280/MIX%20-%20Airport%20City%20updated%20Framework.pdf

[53] Ministry of Housing, Communities and Local Government, *Housing targets increased to get Britain building again*, 30th July 2024, https://www.gov.uk/government/news/housing-targets-increased-to-get-britain-building-again

[54] Atkins / SMBC, *A6 Corridor Study: Final Report*, August 2014, p.86, https://www.highpeak.gov.uk/media/1620/MQ3-A6_Corridor-Study-Final-Report-2014/pdf/MQ3_A6_Corridor_Study_Final_Report_2014.pdf

[55] TfGM, *Greater Manchester Transport Strategy 2040: Five-Year Transport Delivery Plan 2021-2026*, January 2021 (finalised February 2021), p.125 of PDF (printed as p.124), https://downloads.ctfassets.net/nv7y93idf4jq/5Y95swfmf42WVZozNA4fE/84092928376473c507ec000098b18c35/Delivery_Plan_2021-2026_Jan

[56] High Lane Village Neighbourhood Forum Steering Group, *High Lane Village Neighbourhood Development Plan 2021-2037*, June 2021, https://www.hlvnf.org/assets/files/Neighbourhood_Plan-1.pdf

[57] SABRE, *Road Facts and Figures*, https://www.sabre-roads.org.uk/wiki/Road_Facts_and_Figures#Longest_roads

[58] SMBC, *Archaeological Findings on A6 to Manchester Airport Relief Road*, 23rd August 2016, http://www.semmms.info/archaeological-findings-on-a6-to-manchester-airport-relief-road/

[59] Mouchel, *Heritage Constraints*, 8th August 2013, http://a6marr.stockport.gov.uk/746597/760092/813246/813256.pdf

[60] Mouchel, *Environmental Statement*, 23rd October 2013, http://a6marr.stockport.gov.uk/746597/760092/760274.pdf

[61] SMBC, CEC, MCC, *Planning Applications*, November 2013, http://a6marr.stockport.gov.uk/planningapplications/03environmentalstatement/index.htm

[62] Roman Roads Research Association, *The Roman Road from Manchester to Buxton: Margary Number: 71b*, https://www.romanroads.org/gazetteer/M71b.htm

[63] HC Deb 2 March 2017, vol 622, cols 537-540, [online] Accessed 24 June 2025, https://hansard.parliament.uk/commons/2017-03-02/debates/51864F90-2CEF-4633-A55E-36DF6E365E85/A6-M60ReliefRoad

[64] HMRC, *Employment Income Manual: EIM22991 - Heavy goods vehicles: definition*, Section 238(4) ITEPA 2003, https://www.gov.uk/hmrc-internal-manuals/employment-income-manual/eim22991

[65] DfT, *Road Traffic Statistics: Definitions, Vehicle Definitions*, https://roadtraffic.dft.gov.uk/about

[66] DfT, *TAG Unit M3.1: Highway Assignment Modelling*, May 2024, p.63, https://assets.publishing.service.gov.uk/media/67ed0e54e9c76fa33048c634/tag-m3-1-highway-assignment-modelling.pdf

[67] City of London, *Freight Data Report*, July 2017, p2. https://democracy.cityoflondon.gov.uk/documents/s82485/Appendix%202%20-%20Freight%20Data%20Report.pdf

[68] Highways Agency, *Design Manual for Roads and Bridges*, Volume 7, Section 2, Part 1, HD 24/06, November 2006, p.8 of PDF, https://www.standardsforhighways.co.uk/tses/attachments/0bbaee98-98b5-4620-b2f1-ff7e47b3b095?inline=true

[69] Highways England, *CD224 Traffic Assessment (formerly HD 24/06)*, Revision 0, March 2020, p.9 (p.10 of PDF), https://www.standardsforhighways.co.uk/tses/attachments/257e5888-2bfd-492d-92d4-ecf7d40428b0?inline=true

[70] MetroCount, *MTE User Manual – Classification Schemes*, 2013, p.14 (p.15 of PDF), https://mtehelp.tech-metrocount.com/MTEHelp/PDFs/MetroCount-DB9FE70AC6.pdf

[71] *Euro13 Vehicle Classifications*, https://www.researchgate.net/figure/EURO13-vehicle-classifications_tbl1_303717079

[72] DfT, *Road Traffic Statistics: Section C. Data Definitions*, p.12, June 2014, https://data.dft.gov.uk/gb-traffic-matrix/all-traffic-data-metadata.pdf