Greater Manchester's Clean Air Plan to tackle Nitrogen Dioxide Exceedances at the Roadside

Note 20: Greater Manchester Specialised Goods Surveys: Results Summary

Version Status:	APPROVED	**Prepared by:**	Transport for Greater Manchester on behalf of the 10 Local Authorities of Greater Manchester
Authorised by: **Date:**	Ian Palmer 5th August 2019		

COVID-19 Pandemic Statement

This work has not considered the impact of the COVID-19 pandemic. Whilst we are continuing, where possible, to develop the Greater Manchester Clean Air Plan, the pandemic has already had an impact on our ability to keep to the timescales previously indicated and there may be further impacts on timescales as the impact of the pandemic becomes clearer.

We are also mindful of the significant changes that could result from these exceptional times. We know that the transport sector has already been impacted by the pandemic, and government policies to stem its spread. The sector's ability to recover from revenue loss, whilst also being expected to respond to pre-pandemic clean air policy priorities by upgrading to a cleaner fleet, will clearly require further thought and consideration.

The groups most affected by our Clean Air Plan may require different levels of financial assistance than we had anticipated at the time of writing our previous submission to Government.

More broadly, we anticipate that there may be wider traffic and economic impacts that could significantly change the assumptions that sit behind our plans. We have begun to consider the impacts, and have committed to updating the government as the picture becomes clearer over time.

We remain committed to cleaning up Greater Manchester's air. However, given the extraordinary circumstances that will remain for some time, this piece of work remains unfinished until the impact of the COVID-19 pandemic has been fully considered by the Greater Manchester Authorities.

1 Introduction

1.1 The Specialised Goods Vehicle Count (SGVC) is a data collection technique, devised by AECOM, to record specific details about goods vehicles such as the registration, body type, operating company, vehicle size and any other relevant observable details tailored to the purpose or reasoning for performing the count.

1.2 Using this information, it is possible to develop an understanding of the nature of road freight operations on a particular route. Using this understanding it is possible to consider the needs and impact of the freight and logistics sector as part of the transport policy and planning decision-making process.

1.3 AECOM has been commissioned by Transport for Greater Manchester (TfGM) to carry out an SGVC on three sites in the proximity of the city centre. These sites were chosen based on being busy city centre locations that are also areas of air quality exceedance even after the introduction of the Clean Air Zone. In total, twelve sites across the city have been noted as being exceedance sites after the introduction of the Clean Air Zone. The twelve sites are listed below in **Table 1-1**.

Table 1-1 Full list of exceedance sites

Site ID	Authority	Road Name
1267_1985	Manchester	A56 DEANSGATE
1268_1269	Manchester	BRIDGE STREET
1268_46301	Manchester	BRIDGE STREET
NonPCM_207*	Manchester	BRIDGE STREET
1322_3273	Manchester	A34 QUAY STREET
3056_3842_DW	Manchester	A6 STOCKPORT ROAD
1349_2993_DW	Salford	A57 REGENT ROAD
14523_14524	Oldham	A62 HUDDERSFIELD ROAD
2237_3790_DW	Bury	A58 BOLTON STREET
3790_3652	Bury	A58 BOLTON STREET
NonPCM_69*	Bury	A56 BURY NEW ROAD
5654_5163_DW	Tameside	A57 MANCHESTER ROAD

1.4 Three sites were surveyed to constitute this report. The site locations, and dates they were surveyed, are shown in **Table 1-2**.

Table 1-2 Survey dates and locations

Day	Date	Site
Day 1	Tuesday July 16th 2019	Bridge Street/Deansgate
Day 2	Wednesday July 17th 2019	Regent Road/Ordsall Lane
Day 3	Thursday July 18th 2019	A6/Grosvenor Street

1.5 Methodology

1.5.1 The sites were surveyed between Tuesday and Thursday during a normal school term, and hence were seen to be representative of standard operations. The counts were conducted between 07:00 hours and 19:00 hours, providing a full 12 hour day of data for both vans and HGVs passing the survey points. For each vehicle, those carrying out the survey recorded the year of registration, as this was the factor used to determine whether or not a vehicle is Clean Air Zone compliant (where possible, the full registration was noted, but this was not always possible given the speed and volume of traffic), the type of vehicle, the body type of the vehicle, and the industry type the vehicle was serving. Where possible, the company operating the vehicle was also recorded. Information was entered on to record sheets, an example of which is included in Appendix A.

1.5.2 Data was collected, digitised and processed. It should be noted that though a number of vehicles may have passed a survey point multiple times through the survey period, these instances have not been removed from the dataset. Given that records from this survey can contain only the registration year, and not the full registration of the vehicle, assessing whether it was the same vehicle that has passed the survey point multiple times is difficult to determine. In any case, from an air quality perspective, a vehicle making multiple passes of one spot within a period continues to contribute to air quality issues. However, given the above, and the fact vehicles will only be charged once per day for entering the Clean Air Zone, the numbers within this report should not be used to attempt to calculate or forecast revenue.

1.5.3 Within the data contained below, compliance with the Clean Air Zone regulations has been determined by registration year as displayed on the vehicles number plate. This is based on the point in time at which Euro VI engines were introduced in these classes of vehicle. HGVs are deemed to be non-compliant if they have a 13 or 63 number plate, or older. Vans are deemed to be non-compliant if they have a 65 or 16 number plate, or older. Vehicles in these classes with newer registration plates than those mentioned above have a Euro VI engine, which complies with the Clean Air Zone standard and would not be liable to be charged.

1.5.4 The total number of observations made using the above method at each site is shown below in **Table 1-3**.

Table 1-3 Recorded observations at each site

Day	Site	Vans Observed	HGVs Observed	Total Observations
Day 1	Bridge Street/Deansgate	1097	271	1368
Day 2	Regent Road/Ordsall Lane	2312	1017	3329
Day 3	A6/Grosvenor Street	1788	612	2400
	Total across all days	5197	1900	7097

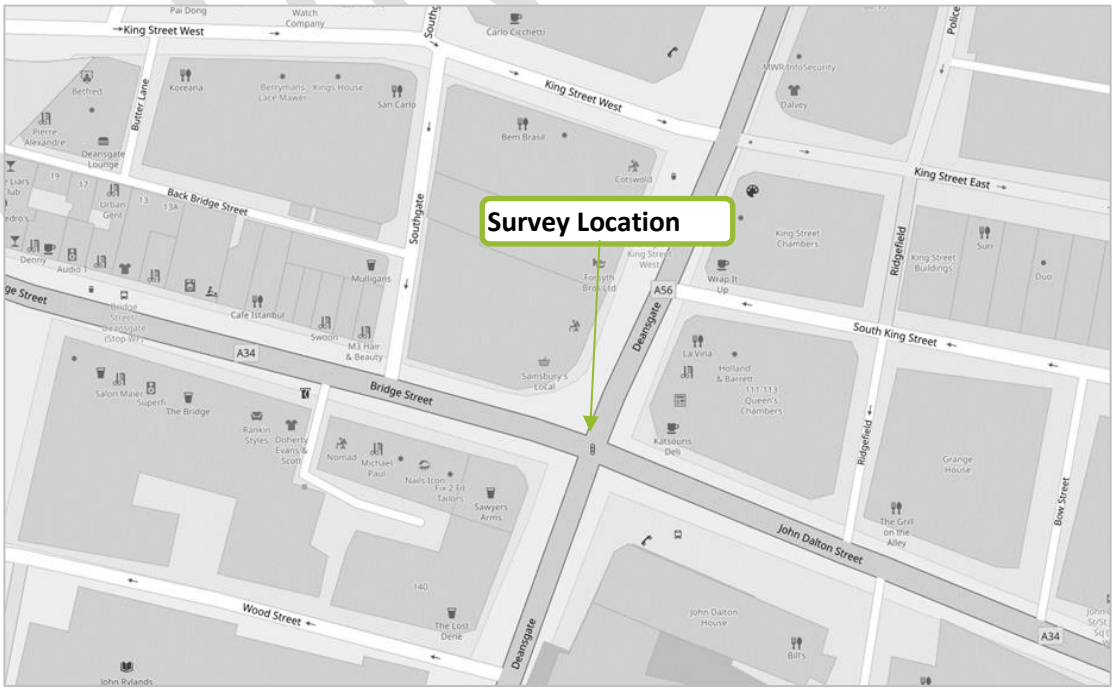
1.5.5 Those carrying out the survey also made specific observations at each site as to various factors that might be contributing to each area being an exceedance site. These were collated into a technical note and shared with the Transport for Greater Manchester Exceedance Team on Wednesday July 24th 2019. A copy of this note is included here in **Appendix B**.

2 Bridge Street/Deansgate

2.1 Location

2.1.1 This section outlines observations and findings of the SGVC undertaken on Bridge Street on Tuesday July 16th 2019. **Figure 2-1** below shows the location of the site.

Figure 2-1 Bridge Street/Deansgate Site Location



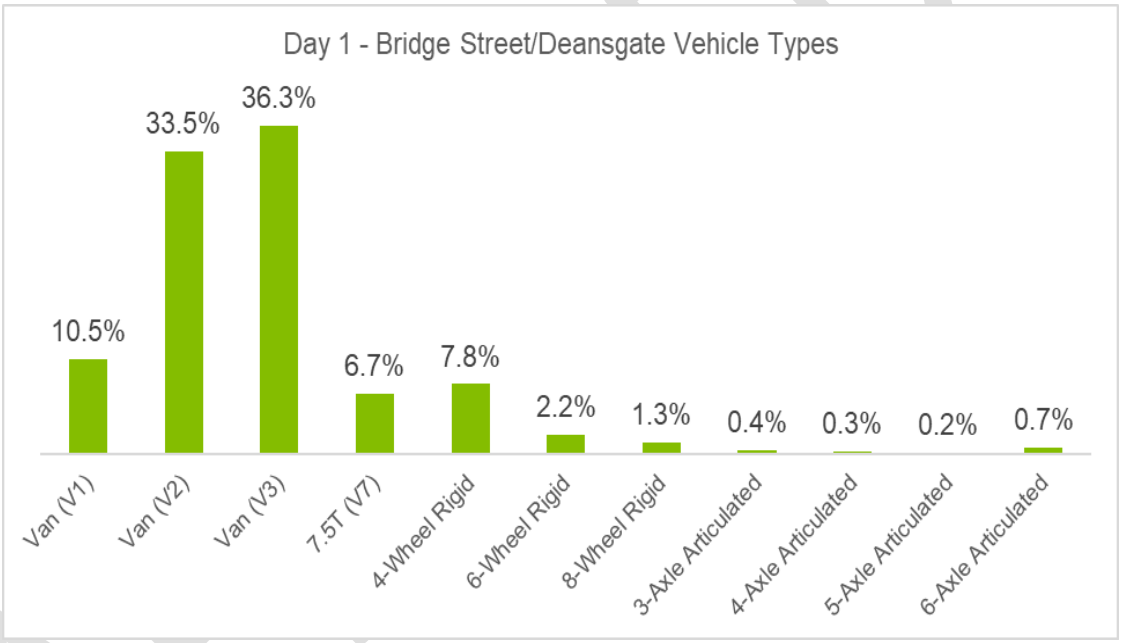
2.1.2 There were university graduation events taking place in the city on the day of the surveys. It was noted by staff carrying out the survey that there was some increased pedestrian traffic in the area, and increased taxi traffic, including larger 'mini-bus style' taxis.

2.1.3 Bridge Street is a typical city centre route, with single carriageway roads and tall buildings close by. It is a prominent bus route, with a number of routes running along Bridge Street then continuing along John Dalton Street to access Central Manchester.

2.2 Analysis

2.2.1 **Figure 2-2** below shows the split of vehicle types observed at the Bridge Street site.

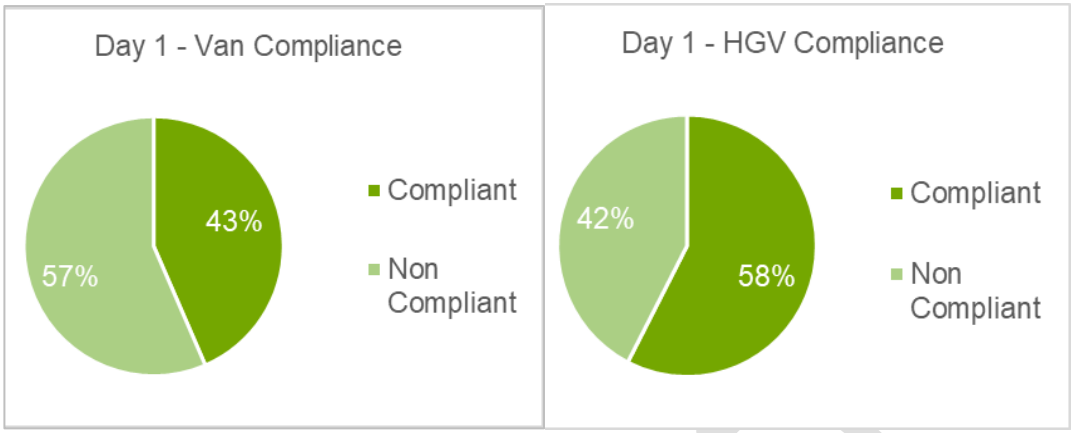
Figure 2-2 Bridge Street/Deansgate Vehicle Type Split



2.2.2 Vans dominate in this location, which is expected given it's the proximity of it to the city centre. Where there were observations of HGV traffic, this was dominated by 4-wheel rigid lorries. Articulated lorries made up less than 2% of the total observations at the site.

2.2.3 **Figure 2-3** below shows the split of vans and HGVs separately at this location based on their compliance with clean air regulations.

Figure 2-3 Bridge Street/Deansgate van compliance split



2.2.4 While the majority of vans are non-compliant (57%), this is not the case for HGVs, where 58% of observations were of compliant vehicles.

2.2.5 Further, **Figure 2-4** and **Figure 2-5** below shows the total observations by year of registration at this site, where red bars represent registrations which are non-complaint, and blue bars represent registrations which are compliant.

Figure 2-4 Bridge Street/Deansgate van registration years

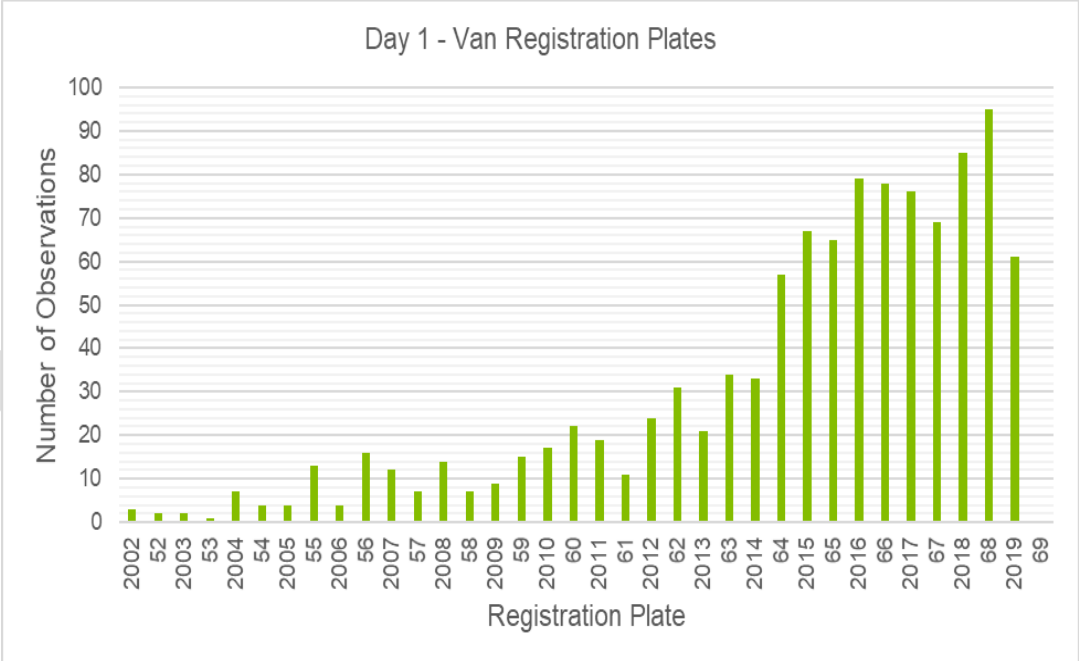
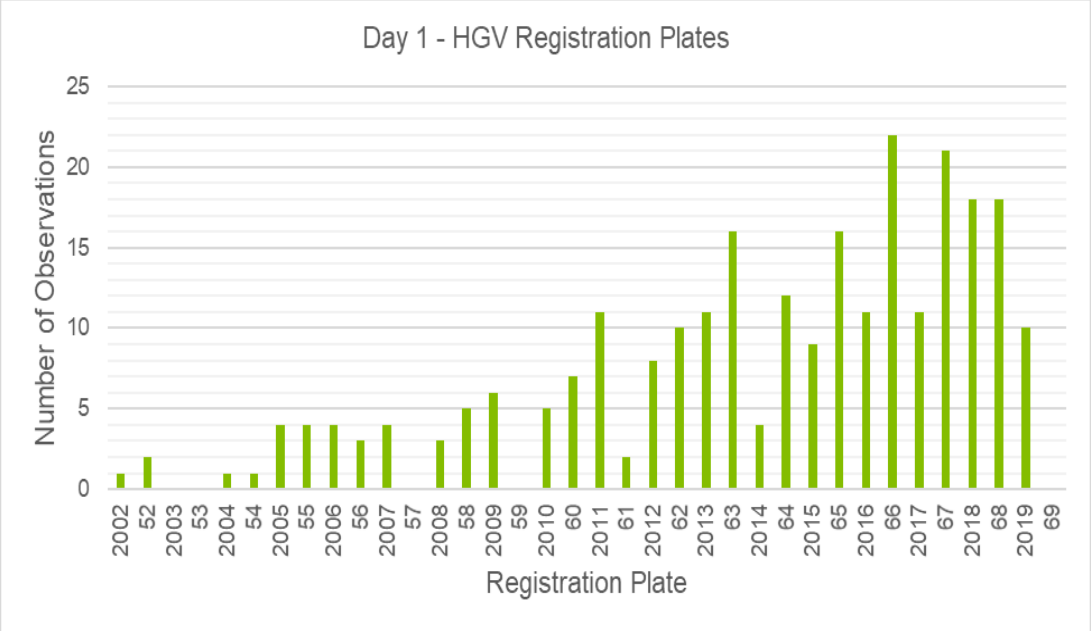


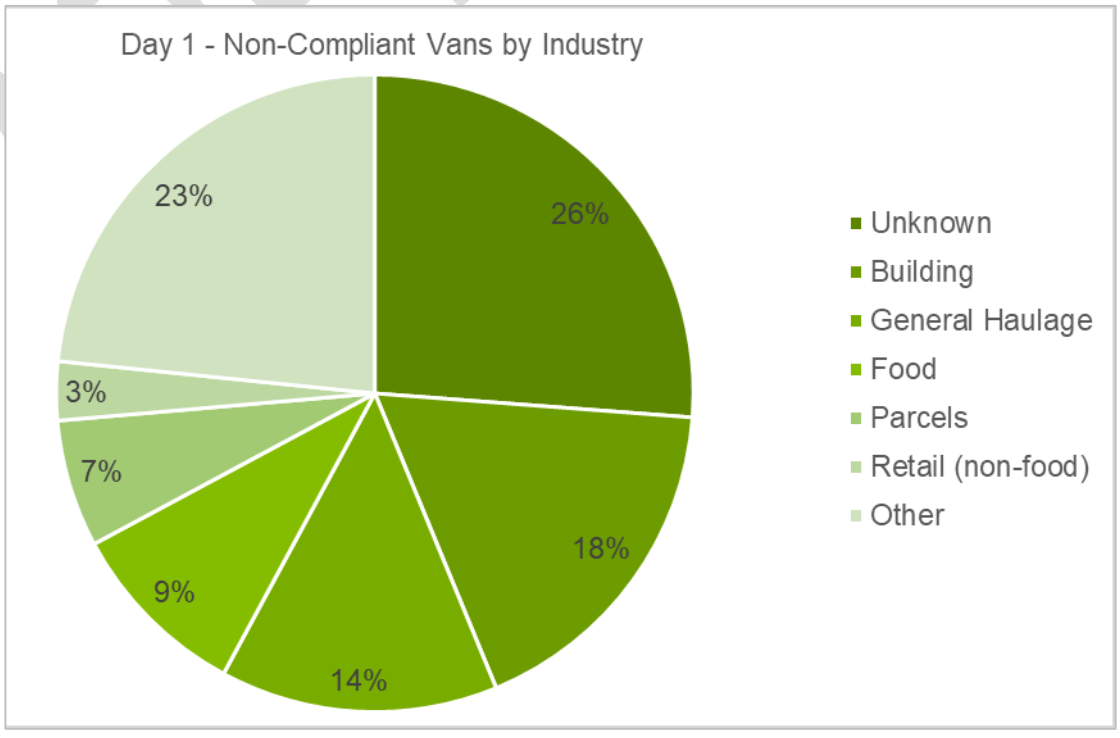
Figure 2-5 Bridge Street/Deansgate HGV registration years



2.2.6 It should also be noted that of the vehicles that are non-compliant, 56% of vans and 54% of HGVs were registered in the final three years of Euro V engines for their vehicle class. Given these vehicles are the newest of those that are non-compliant, they may be candidates for retrofitting if technology becomes available.

2.2.7 Of the observations that were non-complaint, the split of industry type they are attributable to is shown below for vans and HGVs separately in **Figure 2-6** and**Figure 2-7**.

Figure 2-6 Bridge Street/Deansgate non-compliant vans by industry

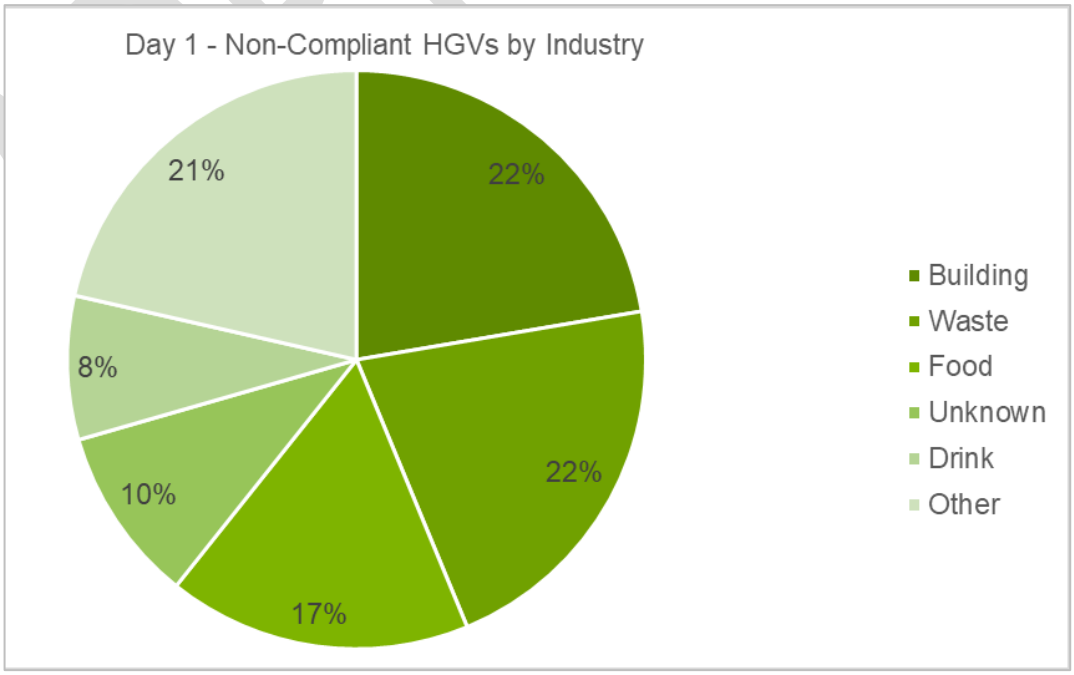


2.2.8 Of the non-compliant vans, it can be seen here that there is a high prevalence of unmarked vans that could not be categorised to a particular sector (26%). The largest proportion of non-compliant vehicles attributable to an industry comes from the building and construction industry (18%). General haulage accounts for the second largest proportion of non-complaint vehicles (14%). The food industry (9%), the parcel/post industry (7%), and the non-food retail sector (3%) also make up notable proportions of the non-compliant vehicles.

2.2.9 The 23% of non-compliant vehicles listed as 'other' above are made up as follows:

- 14% as 'other' – vehicles that could not be categorised into one of the industries used in this survey;
- 3% as vehicles linked to utilities;
- 2% as vehicles linked to waste;
- 2% as vehicles linked to the vehicle and automotive industry;
- 1% as vehicles linked to the media and telecommunications industry;
- 1% as vehicles linked to the drinks industry; and
- Less than 1% each linked to the manufacturing, agricultural, chemical, container, and steel industries.

Figure 2-7 Bridge Street/Deansgate non-compliant HGVs by industry



2.2.10 The building and waste industries both contribute 22% each of the observed non-compliant vehicles. The majority of the observations of non-compliant vehicles from the waste industry are from bin lorries or skip-carrying lorries, which are specialised and often expensive to replace. The third highest proportion of non-complaint vehicles came from the food industry (17%). All of these vehicles had box-fridge type bodies, which, similarly to the vehicles used in the waste industry, are likely to be costly to replace. A significant proportion of non-compliant HGVs were unmarked and could not be attributed to a particular industry (10%). The drink industry contributed 8% of the non-compliant vehicles.

2.2.11 The 21% of non-compliant vehicles listed as 'other' above are made up as follows:

- 5% as 'other' - vehicles that could not be categorised into one of the industries used in this survey,
- 5% as vehicles linked to non-food retail,
- 5% as vehicles linked to the vehicle and automotive industry,
- 4% as vehicles linked to general haulage,
- 2% as vehicles linked to the parcel and post industry,
- Less than 1% each as vehicles linked to the steel, and utilities industries.

2.2.12 **Table 2-1** shows the most frequently observed body types among the non-compliant HGVs. Box body types and box-fridge body types both account for 19% and 18% respectively of non-compliant HGVs.

Table 2-1Bridge Street/Deansgate most seen body types of non-compliant HGVs

Body Type	Proportion of Non-Compliant HGVs
Box	19%
Box-Fridge	18%
Flat	14%
Curtainsided	14%

2.3 Summary

2.3.1 Bridge Street is representative of a typical city centre site, being a single carriageway road and having lots of buildings in close proximity. A number of exceedance sites are clustered together both on Bridge Street and Deansgate.

2.3.2 Retail premises dominate the immediate area. Smaller goods vehicles, such as vans and four-wheel rigid lorries are most frequently observed. The road is not a major through route for freight, so there is a very low prevalence of articulated lorries.

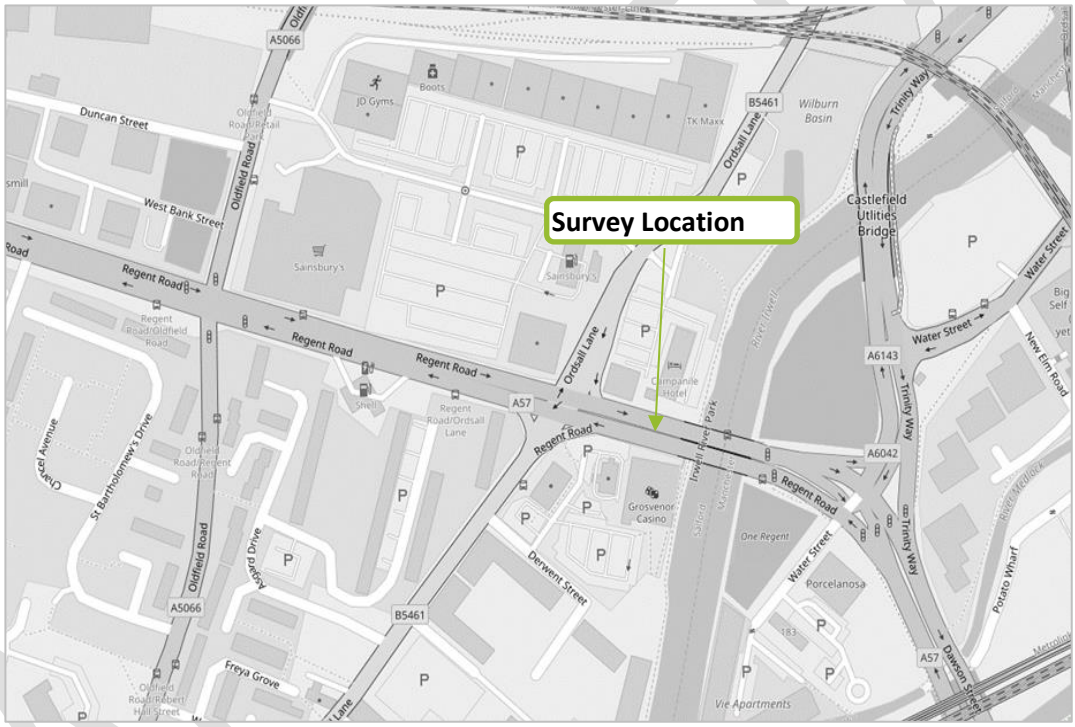
2.3.3 The compliance rate for vans is 43%, while the compliance rate for HGVs is 58%. In both van and HGV vehicle classes, the building industry contributes the highest proportion of vehicles that are non-compliant.

3 Regent Road/Ordsall Lane

3.1 Location

3.1.1 This section outlines observations and findings of the SGVC undertaken on Bridge Street on Wednesday July 17th 2019. Figure 8 below shows the location of the site.

Figure 3-1 Regent Road/Ordsall Lane Site Location



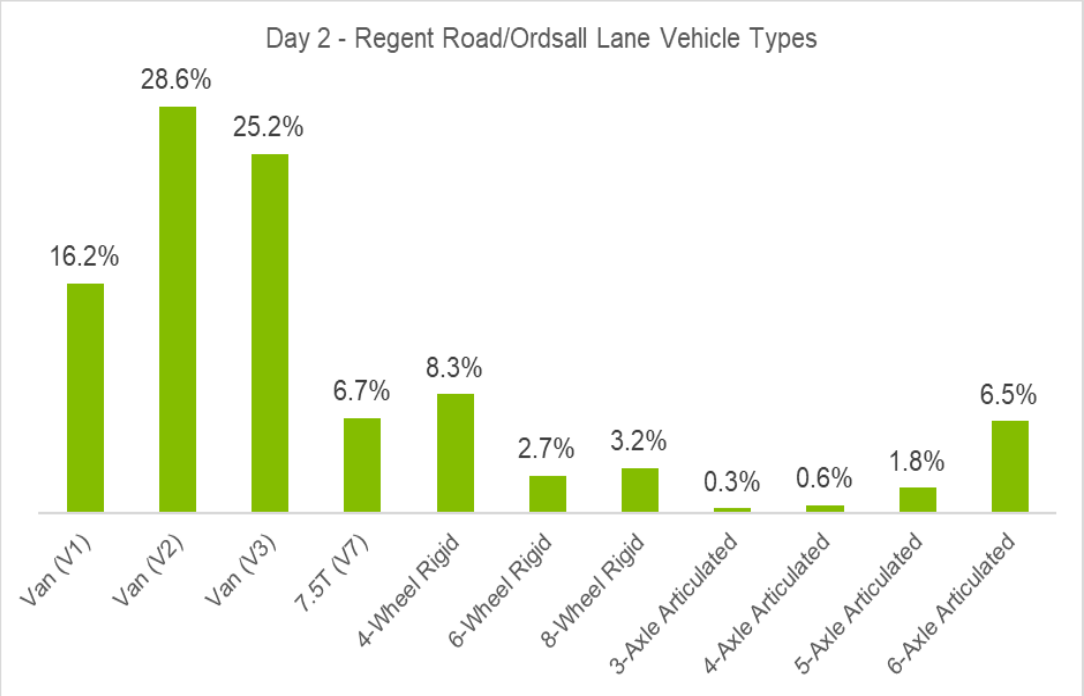
3.1.2 It should be noted that major road works are taking place along this route, and a number of the junctions along it, in order to increase capacity and improve journey times between the M602 and central Manchester. As a result of these long term works, the route was reduced to running one lane in either direction. These road works may also have had the impact of causing traffic to use other routes in order to lessen delay.

3.1.3 Regent Road is a key route to central Manchester, linking part of the Strategic Road Network (the M602) with central Manchester and the A57 (M) inner ring road. Compared to the Bridge Street site, it is a far more prominent freight route.

3.2 Analysis

3.2.1 **Figure 3-2** below shows the split of vehicle types observed at the Regent Road site.

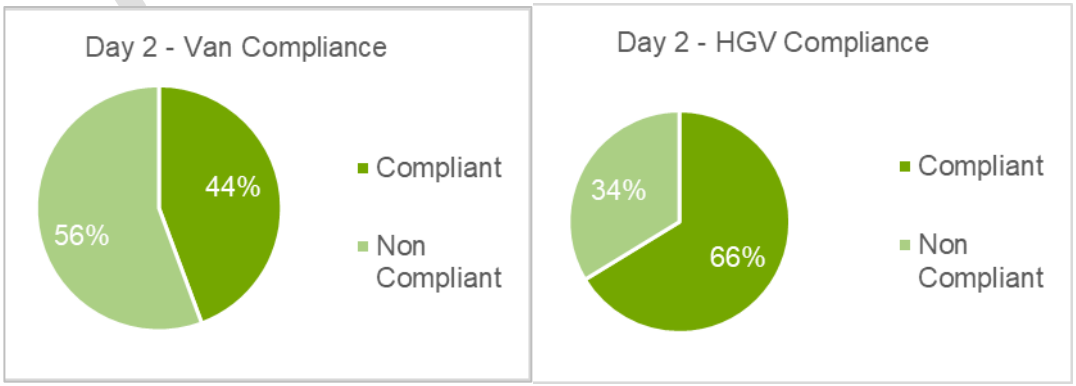
Figure 3-2 Regent Road/Ordsall Lane Vehicle Type Splits



3.2.2 While vans dominate, the proportions of HGVs are notable. There is greater use of rigid lorries than articulated lorries, with four wheel examples being the most frequently observed. This is expected as Regent Road acts as a main radial route heading to the centre of Manchester. The proportion of 6-axle articulated lorries reflects the proximity of this site to the M602 motorway – with Regent Road effectively linking this to the A57 (M) inner ring road.

3.2.3 **Figure 3-3** below shows the split of vans and HGVs separately at this location based on their compliance with clean air regulations.

Figure 3-3 Regent Road/Ordsall Lane vehicle compliance splits



3.2.4 While the majority of vans are non-compliant (56%), this is not the case for HGVs, where 66% of observations were of compliant vehicles.

3.2.5 Further, **Figure 3-4** and **Figure 3-5** below shows the total observations by year of registration at this site, where red bars represent registrations which are non-complaint, and blue bars represent registrations which are compliant.

Figure 3-4 Regent Road/Ordsall Lane van registration years

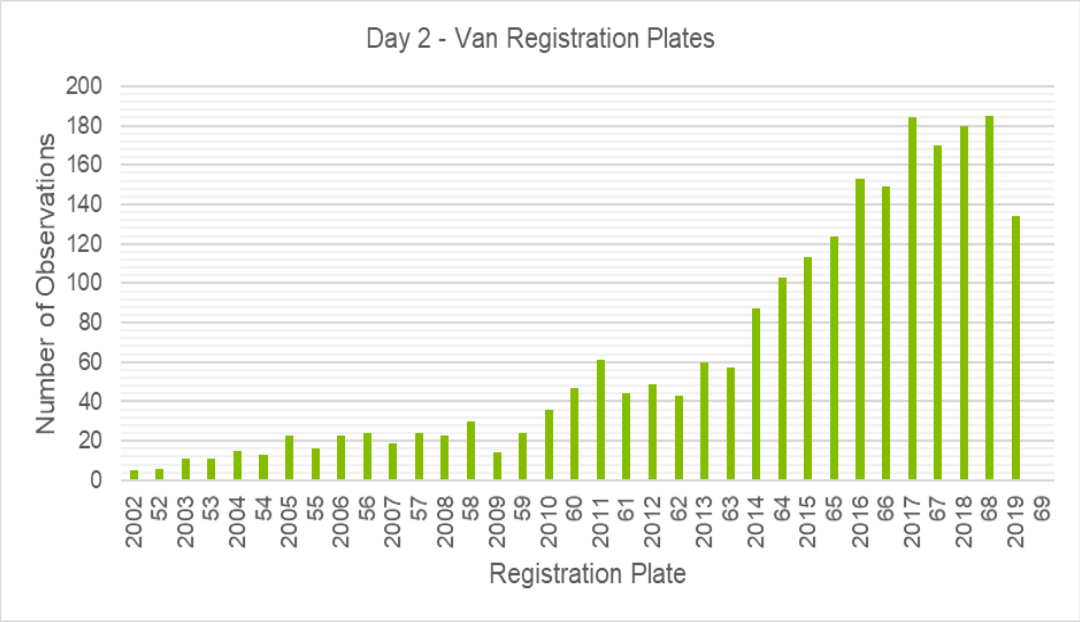
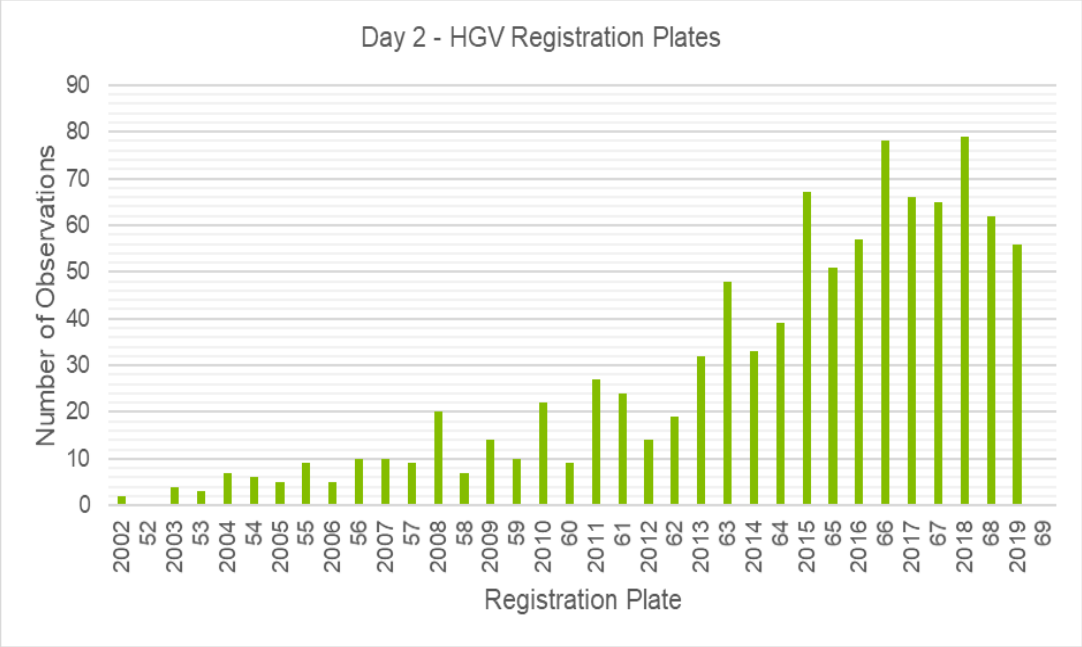


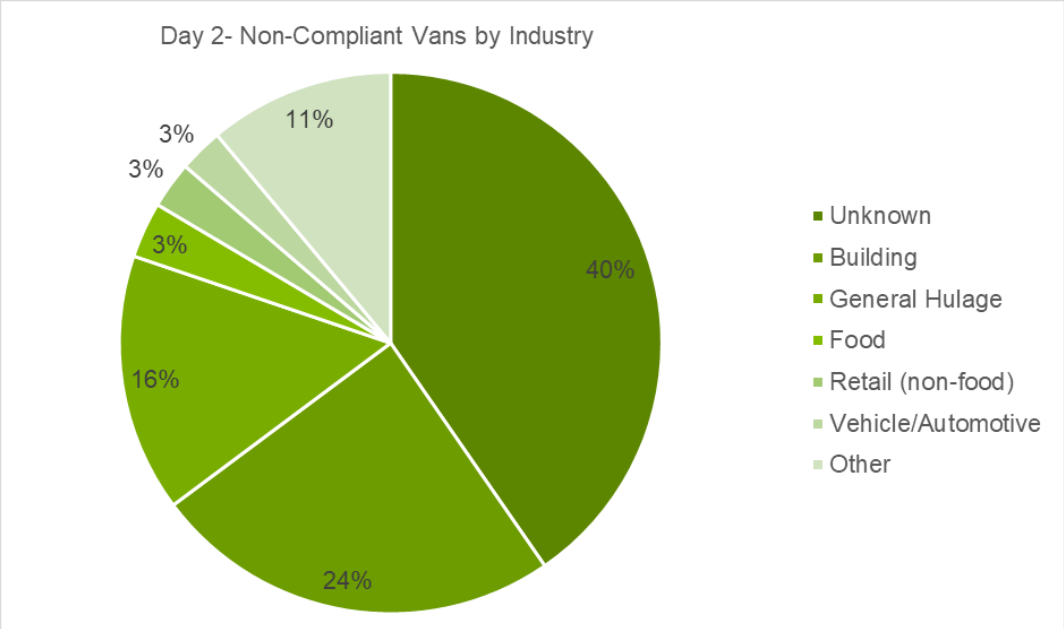
Figure 3-5 Regent Road/Ordsall Lane HGV registration years



3.2.6 It should also be noted that of the vehicles that are non-compliant, 51% of vans and 52% of HGVs were registered in the final three years of Euro V engines for their vehicle class. Given these vehicles are the newest of those that are non-compliant, they may be candidates for retrofitting if technology becomes available.

3.2.7 Of the observations that were non-complaint, the split of industry type they are attributable to is shown below for vans and HGVs separately in **Figure 3-6** and **Figure 3-7**.

Figure 3-6 Regent Road/Ordsall Lane non-complaint vehicles by industry



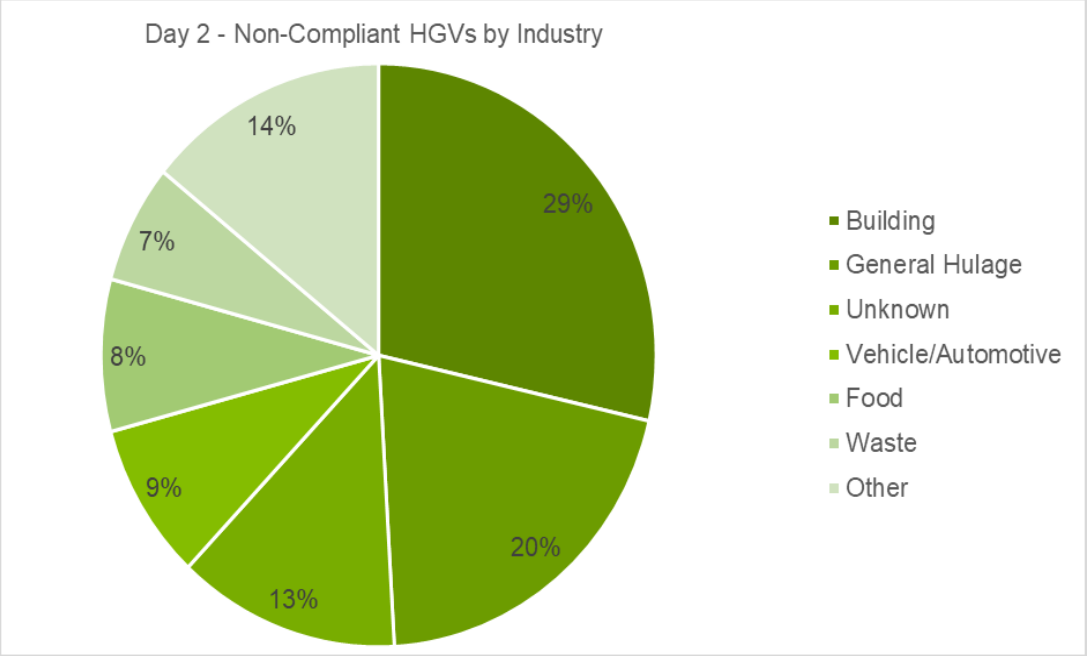
3.2.8 The highest proportion of non-compliant vans are categorised as unknown (40%), again due to the prevalence of unmarked vans that could not be assigned an industry category. The building industry presented the second highest proportion (24%), which could be accounted for given the presence and intensity of works not just on Regent Road itself, but in the immediate area surrounding it. The next highest proportion came from general haulage (16%), which is little surprise given that Regent Road is a well-used freight route, close to the strategic road network. Other industries which contributed notably to the proportions of non-compliant vehicles were food (3%), non-food retail (3%), and the vehicle and automotive industry (3%).

3.2.9 The 11% of non-compliant vehicles listed as 'other' above are made up as follows:

- 6% as 'other' - vehicles that could not be categorised into one of the industries used in this survey;
- 2% as vehicles linked to the utilities industry;
- 1% as vehicles linked to the parcel and post industry; and

- Less than 1% each linked to the drink, media and telecommunications, manufacturing, steel, waste, agricultural and fuel industries.

Figure 3-7 Regent Road/Ordsall Lane non-compliant vehicles by industry



3.2.10 Similarly to vans, the highest proportion of HGVs that are non-compliant are from the building industry (29%), followed by general haulage (20%). Unmarked lorries that could not be categorised into a particular industry make up 13% of non-compliant observations. The vehicle and automotive (9%), food (8%), and waste (7%) industries also contribute notable proportions of non-compliant vehicles.

- The 14% of non-compliant vehicles listed as 'other' above are made up as follows:
- 4% as 'other' - vehicles that could not be categorised into one of the industries used in this survey;
- 2% as vehicles linked to the drinks industry;
- 2% as vehicles linked to the non-food retail industry;
- 2% as vehicles linked to the container industry;
- 2% as vehicles linked to the parcel and post industry;
- 1% as vehicles linked to the chemical industry; and
- Less than 1% each linked to the manufacturing, agricultural, steel, scrap metal, and media and telecommunications industries.

3.2.11 **Table 3-1** shows the most frequently observed body types among the non-compliant HGVs. Curtainsided and box body types were most frequently seen, accounting for 40% of non-compliant observations.

Table 3-1 Regent Road/Ordsall Lane most seen body types of non-compliant HGVs

Body Type	Proportion of Non-Compliant HGVs
Curtainsided	20%
Box	20%
Flat	18%
Tipper Aggregate	7%

3.3 Summary

3.3.1 Regent Road is an important route for traffic entering and exiting the city centre, connecting the M602 and A57 (M) motorways. Hence, it is an important freight corridor.

3.3.2 Vans heavily outnumber HGVs, though of the HGVs observed there is a more even split between rigid and articulated vehicles than there was at the Bridge Street site – indicative of a number of vehicles headed to the city centre to make deliveries, and also of the location's proximity to the strategic road network.

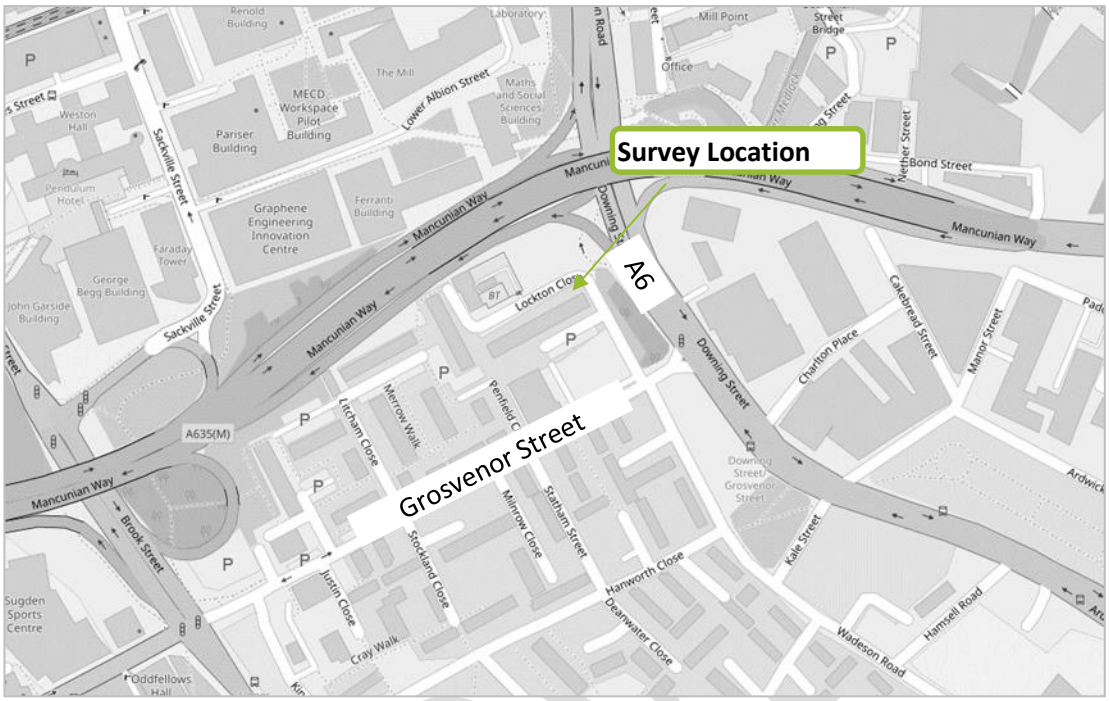
3.3.3 The compliance rate for vans is 44%. For HGVs, the compliance rate sits at 66%. The building and general haulage industries accounted for the highest proportions of non-compliant vehicles, both in van and HGV vehicle classes.

4 A6/Grosvenor Street

4.1 Location

4.1.1 This section outlines observations and findings of the SGVC undertaken on the A6 on Thursday July 18th 2019. **Figure 4-1** below shows the location of the site.

Figure 4-1 A6/Grosvenor Street Site Location



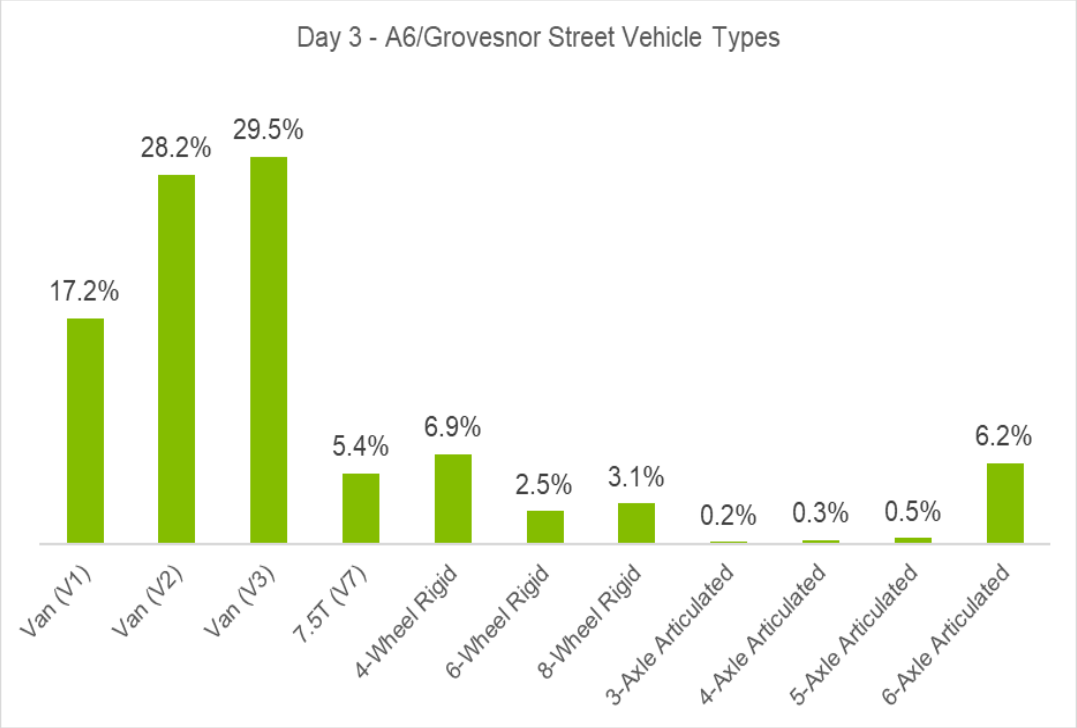
4.1.2 This area appeared to be functioning as it usually would be on the day of the survey – there were no incidents or road works that were observed that would have caused issues affecting the results of the survey.

4.1.3 At the point the survey was carried out, the road is a traditional two lane urban dual carriageway, with a right turn filter lane for the movement from the A6 outbound to Grosvenor Street. The site is adjacent to the junction with the A57 (M). It should be noted that traffic travelling westbound on the A57 (M) cannot access the A34 at the next junction – so it must leave the motorway at the A6, then turn right on to Grosvenor Street in order to access it.

4.2 Analysis

4.2.1 **Figure 4-2** below shows the split of vehicle types observed at the A6/Grosvenor Street site.

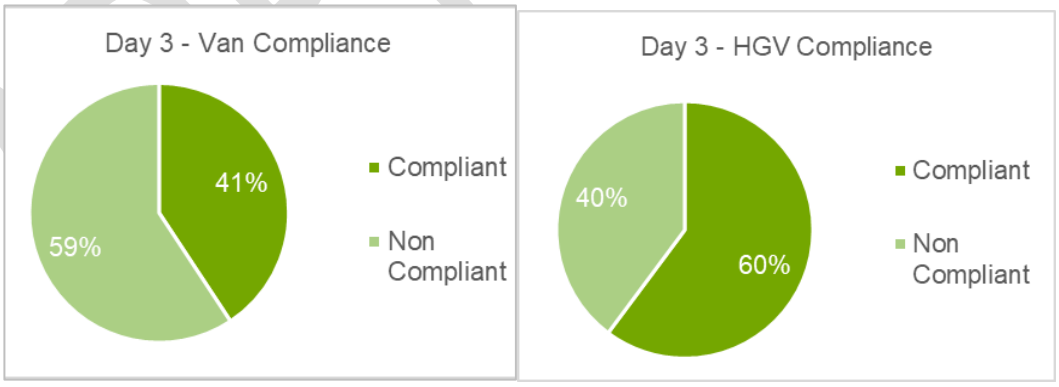
Figure 4-2 A6/Grosvenor Street Vehicle Type Split



4.2.2 The vehicle type split has similar characteristics to that of the Regent Road site, reflecting the A6's proximity to the A57 (M) inner ring road.

4.2.3 **Figure 4-3** below shows the split of vans and HGVs separately at this location based on their compliance with clean air regulations:

Figure 4-3 A6/Grosvenor Street vehicle compliance splits



4.2.4 While the majority of vans are non-compliant (59%), this is not the case for HGVs, where 60% of observations were of compliant vehicles.

4.2.5 Further, **Figure 4-4** and **Figure 4-5** below shows the total observations by year of registration at this site, where red bars represent registrations which are non-complaint, and blue bars represent registrations which are compliant.

Figure 4-4 A6/Grosvenor Street van registration years

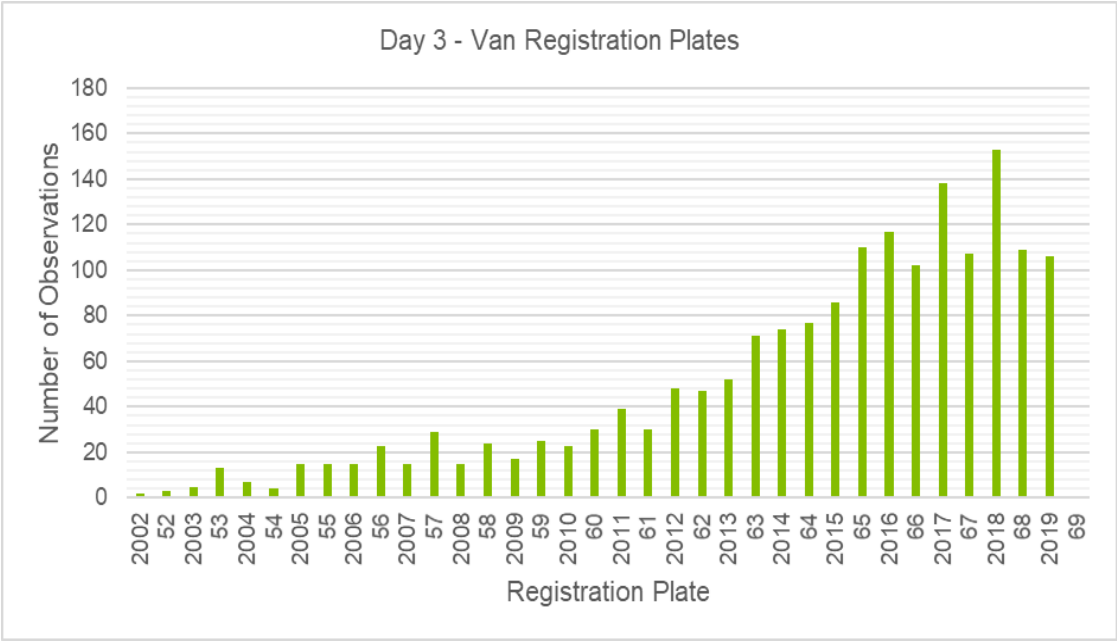
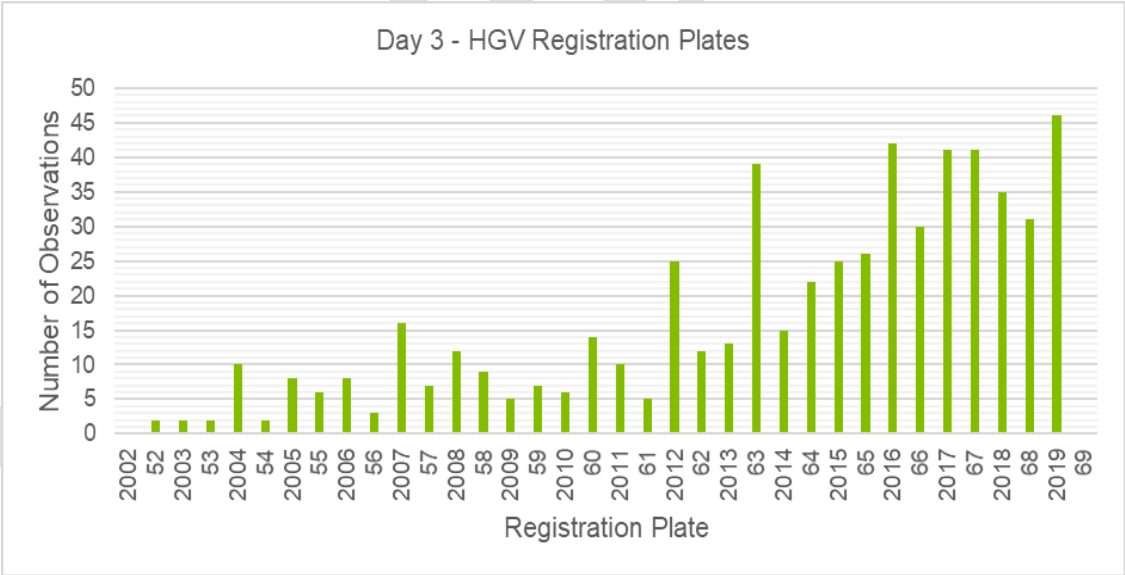


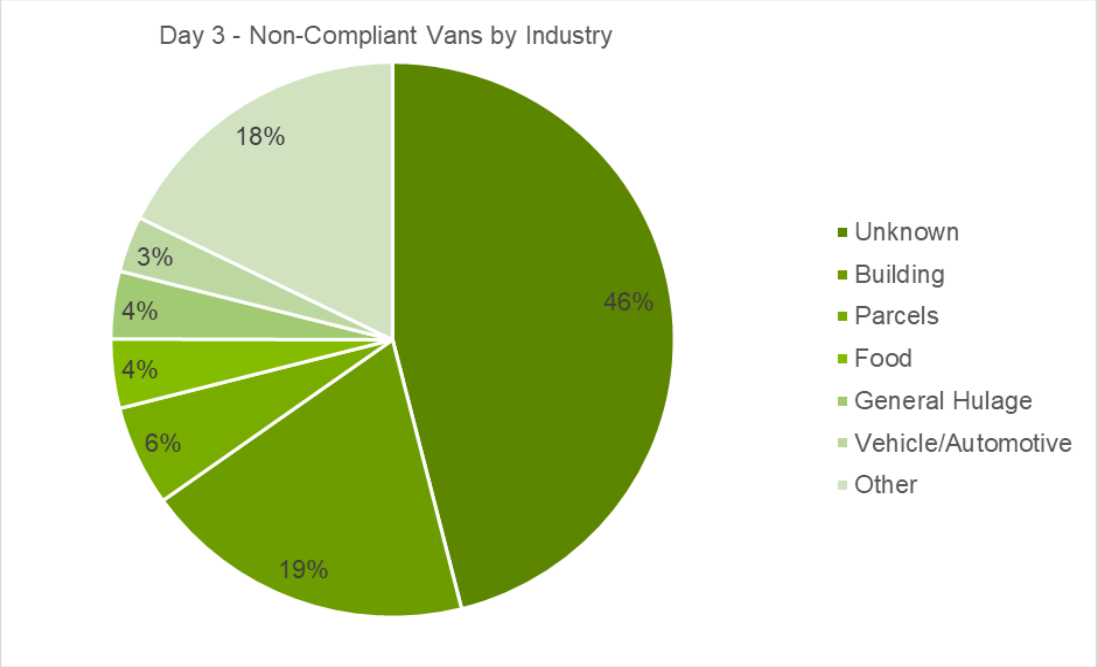
Figure 4-5 A6/Grosvenor Street HGV registration years



4.2.6 It should also be noted that of the vehicles that are non-compliant, 52% of vans and 47% of HGVs were registered in the final three years of Euro V engines for their vehicle class. Given these vehicles are the newest of those that are non-compliant, they may be candidates for retrofitting if technology becomes available.

4.2.7 Of the observations that were non-complaint, the split of industry type they are attributable to is shown below for vans and HGVs separately in **Figure 4-6** and **Figure 4-7**.

Figure 4-6 A6/Grosvenor Street non-compliant vans by industry

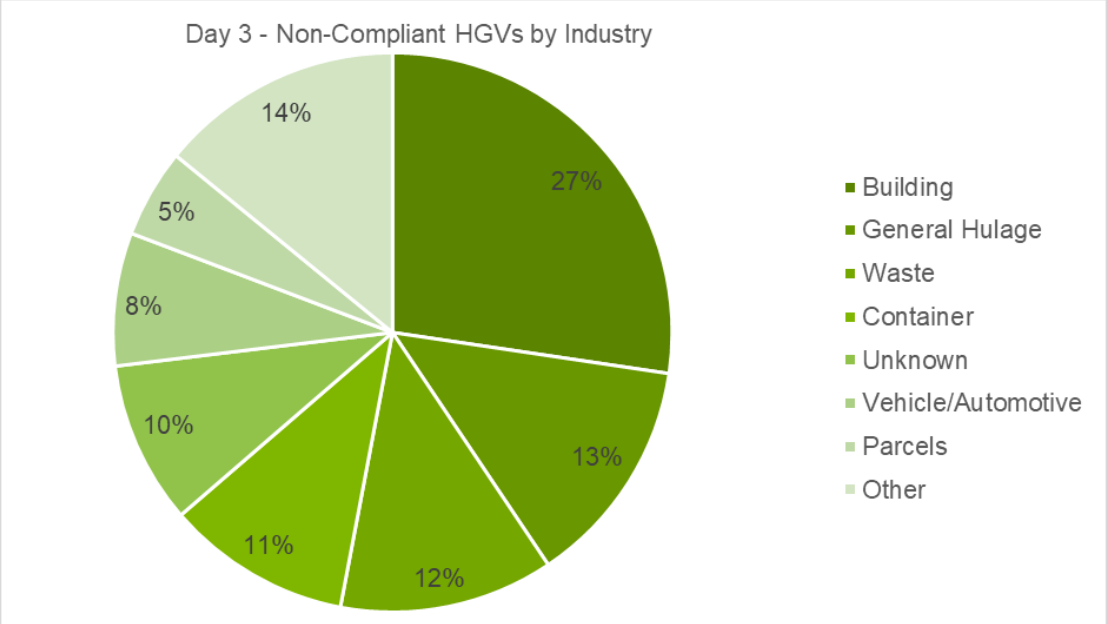


4.2.8 The high volumes of unmarked vans result in this category producing the highest proportion of non-compliant observations (46%). The building industry produces the next highest proportion (19%), followed by parcels and post (6%), food (4%), general haulage (4%) and the vehicle and automotive industry (3%).

4.2.9 The 18% of non-compliant vehicles listed as 'other' above are made up as follows:

- 10% as 'other' - vehicles that could not be categorised into one of the industries used in this survey;
- 2% as vehicles linked to the media and telecommunications industry;
- 2% as vehicles linked to the non-food retail industry;
- 2% as vehicles linked to the utilities industry; and
- Less than 1% each linked to the drink, waste, manufacturing, chemical and steel industries.

Figure 4-7 A6/Grosvenor Street non-compliant HGVs by industry



4.2.10 Building industry vehicles account for the highest proportion of HGV non-compliances (27%). General haulage accounts for the second highest proportion (13%), reflective of the significance of this route as a radial route from Manchester and its closeness to the A57 (M). The waste industry accounts for the third largest proportion of non-compliant vehicles (12%), again likely due to the extra expense incurred in having to replace highly specialised vehicles. There is also a notable proportion of non-compliant vehicles attributable to the container industry (11%) – these are likely to be on routes to and from the various container depots located on Trafford Park (travelling to and from the survey site using the A5081, A56 and A57 (M)). Vehicles for which the industry type is unknown account for 10% of non-compliant HGVs, while the vehicle and automotive industry (8%) and the parcel and post industry (5%) also make notable contributions.

4.2.11 The 14% of non-compliant vehicles listed as 'other' above are made up as follows:

- 5% as 'other' - vehicles that could not be categorised into one of the industries used in this survey;
- 5% as vehicles linked to the food industry;
- 2% as vehicles linked to the non-food retail industry; and
- Less than 1% each linked to the steel, utilities, chemical, drink and fuel industries.

4.2.12 **Table 4-1** shows the most frequently observed body types among the non-compliant HGVs. Flat bodied vehicles and box-bodied vehicles accounted for 17% each of non-compliant observations.

Table 4-1 A6/Grosvenor most seen body types of non-compliant HGVs

Body Type	Proportion of Non-compliant HGVs
Flat	17%
Box	17%
Skip	10%
Container	10%

4.3 Summary

4.3.1 The A6 is a key radial route to the South of Manchester, providing access to Stockport, the M60, and linkages to routes across the Pennines. In the area of the exceedance site it is a dual carriageway with two lanes in either direction, plus a feeder lane for traffic turning right from the southbound carriageway into Grosvenor Street, which is a one way route heading towards the universities and the A34.

4.3.2 This site has a similar mix of vehicle types to those observed on the Regent Road site, albeit with a more even split between rigid and articulated vehicles on the A6. This may be due to the site being on a main route close by to the container distribution centres on Trafford Park.

4.3.3 The compliance rate for vans is 41% at this site. The compliance rate for HGV traffic is 60%.

5 Summary and Conclusion

5.1 This report has summarised Specialised Goods Vehicle Counts performed across three different sites close to central Manchester, identified as being air quality exceedance sites even after the introduction of the Manchester clean air zone.

5.2 Each site had different characteristics, and therefore different types of vehicles using them. This was reflected in the profile of vehicles using each site – though vans dominated overall, in the city centre, smaller rigid lorries were prevalent. On the two routes that better represented freight corridors, the presence of more articulated vehicles was more noticeable. This is demonstrated in Table 7 below, showing the proportion of total observations which were vans. It is noticeably higher on the Bridge Street/Deansgate site located closer to the city centre.

Table 5-1 Vans as a percentage of total observations

Day	Site	Vans as a percentage of total observations
Day 1	Bridge Street/Deansgate	80%
Day 2	Regent Road/Ordsall Lane	69%
Day 3	A6/Grosvenor Street	75%

5.3 Over the course of the survey, a negligible number of vehicles with foreign number plates were observed.

5.4 Across all three sites and both vans and HGVs, around 50% of the non-compliant observations were registered in the final three years of Euro V engines for their vehicle class, meaning there is potential for retrofitting of their engines or exhausts to make them compliant with the Clean Air Zone.

5.5 Next steps involve further analysis of the data gathered – such as reviewing which hauliers or companies have been observed at each site with the most non-compliant vehicles, and further age profiling of specifically rigid lorries and articulated lorries observed in the survey.

A.1 Copy of Survey Record Sheet

A.1.1 Below is a sample recording sheet used by those carrying out the survey on the roadside to record their observations.

SPECIALISED GOODS VEHICLE COUNT		Sheet number			
Date	Sheet Start Time	Sheet End Time	Direction	Initials	Location
HGV	**13** or **63** plate or older (less) = **Non-compliant**		Vans	**65** or **16** plate or older (less) = **Non-compliant**	

Reg Number					
Company Name					
Vehicle Type					
Body Type					
Industry Type					
Additional Info					

Reg Number					
Company Name					
Vehicle Type					
Body Type					
Industry Type					
Additional Info					

Reg Number					
Company Name					
Vehicle Type					
Body Type					
Industry Type					
Additional Info					

Reg Number					
Company Name					
Vehicle Type					
Body Type					
Industry Type					
Additional Info					

A.2 Technical Note – SGVC Observations

A.2.1 This technical note details some observations from the Specialised Goods Vehicle Count (SGVC) carried out by AECOM on behalf of Transport for Greater Manchester (TfGM), related to TfGM's Clean Air Zone proposals.

A.2.2 In investigating movements of HGVs and LGVs it was decided to conduct some on-site traffic counts for a standard 12 hour period on a midweek working day during a normal school term. The count sites were chosen based on being busy city centre locations that are also areas of air quality exceedance even after the introduction of the Clean Air Zone. The records taken are being entered into a spreadsheet and analysis will follow. But in the meantime this note is a collection of comment made by the eight staff who were on-site at the three locations. Where possible we have recorded the issue and then where appropriate have made some possible suggestions on solutions. The observations cover a wide range of issues observed as follows;

- Safety concerns or near misses observed?
- Traffic Flow
- Congestion (e.g.where traffic on the other side of the junction backed up preventing forward movement)
- Yellow box
- Traffic Lights and timing
- Road Surface quality
- Pedestrian issues
- Bus issues
- Taxi issues
- Parking Issues
- Noticeable poor air quality?
- Most polluting vehicle(s) that day?

Day 1 – Bridge Street/Deansgate

A.2.3 The following observations were made with regard to this site:

- Safety concerns or near misses observed: There were some illegal right turns from Deansgate southbound, to Bridge Street outbound – the turning lane was marked as bus and taxi only.
- Traffic Flow: Deansgate had the dominant flow, but Bridge Street had a significant amount of bus and taxi traffic. There were relatively few HGVs but more LGVs.

- Congestion: There were regular instances in the morning with inbound traffic on the other side of the junction backed up preventing forward movement through the junction. This could have been due to traffic on John Dalton Street being held for tram movements etc. This is shown in A.2.1**.**

A.2.1 Backed up traffic from John Dalton Street

- On the southern arm of Deansgate, there are works taking place that encroach on to the road. To allow the southbound flow of traffic to continue, the northbound right turn filter lane had been shortened. This could block back and impede the flow of traffic going straight and left, particularly if there was a large vehicle turning right.
- Yellow box: The junction was regularly being blocked by turning vehicles assuming they could successfully travel through but finding they ended up blocking part of the junction.

- Traffic Lights and timing: The lights seemed to have regular timings which didn't reflect directional traffic flow. There were numerous occasions where three to four double decker buses were sitting in the queue for the lights and the time setting would not allow the queue to clear even if the receiving arm had the capacity to accommodate the vehicles.
- Road Surface quality: The road surface at the Deansgate junction is starting to crack. It is already uneven and has rutting lines running along Deansgate. This means traffic, especially buses, using Bridge Street have to slow down for the junction to give the passenger a smoother ride. This reduces the capacity of the junction. This is shown in **A.2. 2** below.

A.2. 2 Poor quality road surface at Bridge Street/Deansgate junction

- Pedestrian issues: There is a high flow of pedestrians on Deansgate and at times this could cause some safety near-misses. The poor road surface meant pedestrians were having to deviate from the crossings to avoid potholes.
- Bus issues: It is understood that this is an important bus corridor into the city for multiple routes and Stagecoach & First have multiple routes plus National Express Coaches to Liverpool. A number of buses appeared to be pre-2013 and therefore non-compliant. A large number of these also appeared to be carrying very few passengers. There were frequently buses queued at the traffic signals, and others at a bus stop further down Bridge Street, all idling as they were queuing or waiting.

- Taxi issues: There was a lot of taxis on Bridge St and due to congestion several people got out and settled their fares on the inbound route. There was a big increase in taxis post 5pm, possibly connected to university graduation ceremonies taking place in the city that day, and particularly in larger people carrier and van-style taxis. Uber-branded vehicles tended to be more modern. There were also observations of taxis registered from Bury, Bolton, Stockport and even Sefton as well as local cabs.
- Parking Issues: Some delivery vans were parking on Bridge Street, blocking either part of the road or the pavement, thus restricting the width of the road and impeding flow. Bus stops caused a similar issue. Another problem mentioned by a local traffic warden, is that blue badge holders are allowed to park in the area and this, in her opinion, is one of the worst causes of congestion.
- Noticeable poor air quality: Bridge Street is a typical traditional city centre road which is single carriageway, fronted by quite tall buildings meaning it acts a bit like a canyon for emissions. When there is standing traffic and regular acceleration from stationary there is inevitably pulses of emissions.
- Most polluting vehicle(s) that day: A black cab with a 09 registration plate was observed.

A.2.4 Potential suggestions/solutions:

- Improvements to the road surface could be made.
- While noting that the site is very constrained due to the close proximity of buildings, where space permitted, loading bays or bus stops could be looked into, to allow buses and vans to stop away from the main flow of traffic and thus allow it to flow more freely.
- Having more of the bus fleet becoming clean air compliant would have a positive impact. There were hybrid buses operating on this route, and where they were queued up, it was noticeable that pollution ‘pulses’ as vehicles accelerated away from a signal were less than compared to the older diesel buses that were most prominent at this location.
- There could be some re-timing of signals to reduce queuing time, particularly on Bridge Street where there was a tendency for the more polluting buses to be queued up.

Day 2 – Regent Road/Ordsall Lane

A.2.5 The following observations were made with regard to this site:

- Safety concerns or near misses observed: There was lots of near misses involving cars that had driven through the lights when the exit route was not free, so they were effectively blocking traffic flow. This was despite yellow boxes being painted on the road. **A.2. 3** below shows an example of this – here, inbound traffic is blocking movements out of Ordsall Lane.

A.2. 3 Trapped traffic on Ordsall Lane

- Traffic Flow: Heavier freight route, serving some of the local major construction projects including new tower blocks and highway improvements. Regent Road was by far the dominant traffic flow. There was a relatively modest flow of traffic on the minor road despite having a retail park nearby.
- Congestion: The whole area was congested as it was reduced to one lane in each direction, significantly increasing journey times and likely to result in drivers (of all vehicles) taking alternative routes. As Regent Road was reduced to one lane in either direction it was causing traffic to build on the side roads, as demonstrated in A.2. 4

A.2. 4 Traffic queuing on Ordsall Lane

- Yellow box: The junction was regularly being blocked by turning vehicles which prevented some through movements on the side roads. See safety concerns above.
- Traffic Lights and timing: The side road spurs had around 15 seconds each as part of a 3-way rotation with much more time given to Regent Road. This generally worked well unless the receiving arm of the junction was congested. More traffic on the side roads were destined for the city centre than going straight over or heading out of the city.
    - Due to lengthy queues for vehicles turning left from southbound on Ordsall Lane to inbound on Regent Road, a number of vehicles chose instead to drive straight through the junction and then complete a U-turn on Ordsall Lane, before turning right from northbound on Orsdall Lane to inbound on Regent Road, thus skipping the queue.
    - With blocking back due to the roadworks, there was often insufficient time for cars to go through traffic lights before they were changing back to red again. This meant people were getting frustrated and angry with other road users, which exacerbated the whole situation and caused some to drive impatiently or aggressively – leading to some of the congestion and yellow box issues detailed above.

- Road Surface quality: This is in the process of being improved and hence is good quality where it has been replaced. That said, inbound from the Regent Road/Ordsall Lane junction, vehicles were moving onto a surface that was in the process of being resurfaced, which was therefore very rough and bumpy.
- Pedestrian issues: There is some pedestrian movement which have green man assisted crossings but less footfall than in the city centre.
- Bus issues: Despite having some housing in the vicinity and having a retail parks based on Sainsburys there was only 1 bus route, Service 33, a FIRST Bus route from Manchester to Worsley which was operated mostly by quite old 05 and 06 registration single deckers, running to a 30 minute frequency.
- Taxi issues: There were few specific comments related to these at this site.
- Parking Issues: Due to the retail park having a 3 hour parking restrictions there was some random parking on other side streets for site workers. It didn't appear to be a major problem however.
- Noticeable poor air quality: As a pulse of traffic accelerates away from the lights there is a perceivable increase in emissions. The air also felt noticeably dusty due to roadworks taking place in close proximity. There was also construction vehicles such as diggers operating in the vicinity and using the road to get to various points of the site which seemed to be highly polluting. On the day of the survey, Jacobs were on site installing air quality monitoring equipment in the vicinity.
- Most polluting vehicle(s) that day: there were a number of highly polluting vehicles observed - there was an old X registration, 4 wheeler spotted (highways maintenance), an X registration tipper (Hopkins haulage), an S registration 4 wheeled flatbed truck, and an M registration van.

A.2.6 Potential suggestions/solutions:

- It is clear that once the roadworks in this area are complete then conditions will be vastly improved – the road and junctions will operate at a higher capacity, journey times will be faster, polluting construction traffic will be removed, and drivers will be less frustrated and aggressive in their driving. The removal of roadworks may well have positive air quality impacts in other areas too as there will be less rerouting to other routes.
- In the interim, giving some consideration to opening up more sections of the road not being worked on might help to ease some congestion issues – it was clear that there were some coned off areas which were not being worked on, that could possibly have been used by traffic. Indeed, on one occasion where an ambulance with blue lights on was attempting to pass through the area, drivers were turning into vacant coned off areas to allow space for it to pass through.

Day 3 – A6/Grovesnor Street

A.2.7 The following observations were made with regard to this site:

- Safety concerns or near misses observed: There were some cyclist manoeuvres that appeared dangerous on what is a busy route. When cyclists travelling outbound came to turn right into Grovesnor Street, they had to move across two lanes of traffic to get to a cycle lane running between the two straight ahead lanes and the right filter lane.
- Traffic Flow: there was a strong flow of traffic on the A6 corridor, as well as on the elevated section of the A57 (M) Mancunian Way which did not form part of the data collection - although it should be noted that due to roadworks on the A57 there was very slow moving traffic on just one lane of this road for much of the day. The A57 (M) is down to single lane from two due to roadworks.
    - When exiting the A57 (M) Mancunian Way westbound, there is no option to turn right at the end of the sliproad to head in to town on the A6. This resulted in some traffic leaving the A57 (M), going into the Grovesnor Street right filter lane and performing a U-turn back on to the A6 towards Piccadilly.
    - There is no exit from the A57 (M) Mancunian Way westbound to the A34, another radial route from the city centre. Traffic from the A57 (M) westbound for the A34 is therefore leaving at the A6 and using Grovesnor Street to access the A34 – this included some large HGVs.
- Congestion: See traffic light line for a comment on forward movement. Secondly, during the afternoon rush hour from around 4.30pm going outbound there was a tail back as two lanes of traffic feed into one on Ardwick Green South, to accommodate a bus lane. At this point the queue is on an incline, and hence slow moving traffic uphill tends to emit more fumes.
    - Traffic Lights and timing: At peak times, the right turn filter to Grovesnor Street was full to capacity and blocked back onto the second lane of the A6. This caused some traffic going straight to have to slow down/stop and take avoiding action.
- Road Surface quality: The surface was generally alright, but patchy in places.
- Pedestrian issues: There was a light but steady flow of pedestrians. There was little jaywalking and the pedestrian crossing was occasionally used.
- Bus issues: This is a busy bus corridor featuring several Stagecoach services including the 192 (around 15 buses an hour) and 201-206. The Stagecoach depot is nearby and there was a steady flow of ‘not in service’ (NIS) buses moving between the city centre and the depot. Indeed during certain hours 50% of the buses were NIS e.g. between 3pm and 4pm there were 36 NIS going into town and 26 going the other way.

- Taxi issues: Like buses this is a busy taxi route both on the A6 and also those turning to use Grosvenor Street. There could be several reasons for this, the proximity of the taxi ranks near Piccadilly Station, the fact that Grosvenor Street is a one-way street leading towards the main universities and there is a taxi base in the unit behind Grosvenor Street.
- Parking Issues: There were no noticeable issues observed.
- Noticeable poor air quality: When the vehicles were backed for the right filter lane some of them were under the flyover and this may retain some of the emissions.
- Most polluting vehicle(s) that day: A 2010 registration black cab was observed.

A.2.8 Potential suggestions/solutions:

- Traffic signals for the right turn into Grosvenor Street could be retimed at peak to allow the queue in the filter lane to clear more easily. Inbound traffic at times where there was a queue here was light, so there would be scope to increase waiting times.
- Some element of traffic calming outbound to slow vehicles down and reduce emissions could be implemented. The road widens and slopes gently downwards from Piccadilly, a contributing factor to the excess speed.
- Discussions could be had with Stagecoach to understand the routing of 'Not in Service' buses along this road, to establish if there is a need for them to take this particular route, or if the buses could come in to service in the time that they are running to or from a depot.

A.2.9 There may be merit in considering the value of the bus lane on Ardwick Green South, versus the air quality issues caused upstream by having a merge point to accommodate it which causes occasional queuing and runs uphill.