

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

Evidence Submission for a new Greater Manchester Clean Air Plan

Appraisal Report

Appendix 1: Hackney Carriage and Private Hire Vehicle Evidence Note



Salford City Council



Oldham Council

TRAFFORD COUNCIL



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1 Introduction

1.1 Background

- 1.1.1 The government has instructed many local authorities across the UK to take quick action to reduce harmful roadside levels of Nitrogen Dioxide (NO₂) with the Secretary of State (SoS) for Environment, Food and Rural Affairs issuing Directions under the Environment Act 1995 in 2017 requiring them to undertake feasibility studies to identify measures for reducing NO₂ concentrations to within legal limit values in the “shortest possible time”. In Greater Manchester, the ten local authorities, the Greater Manchester Combined Authority (GMCA) and Transport for Greater Manchester (TfGM) are working together to develop a Clean Air Plan to tackle NO₂ exceedances at the roadside, herein known as Greater Manchester Clean Air Plan (GM CAP).
- 1.1.2 In March 2021, government directed the 10 GM Authorities to implement a Class C Clean Air Zone (CAZ) with additional measures. The GMCA – Clean Air Final Plan report on 25 June 2021 endorsed Greater Manchester’s Final CAP and policy in compliance with this direction, following a review of all of the information gathered through the GM CAP consultation and wider data, evidence and modelling work. Throughout the development of the previous Plan, the Joint Air Quality Unit (JAQU) reviewed and approved all technical and delivery submissions. The Plan was agreed by the 10 GM Authorities. Within this document, this is referred to as the Previous GM CAP.
- 1.1.3 On 8th February 2022, a new direction (the Direction) was issued by the SoS which confirmed that the March 2020 Direction had been revoked and required that by 1st July 2022 the GM Authorities should:
- review the measures specified in the local plan for NO₂ compliance and associated mitigation measures; and
 - determine whether to propose any changes to the detailed design of those measures, or any additional measures.
- 1.1.4 The Direction also states that the local plan for NO₂ compliance, with any proposed changes, must ensure the achievement of NO₂ compliance in the shortest possible time and by 2026 at the latest. It should also ensure that human exposure to concentrations of NO₂ above the legal limit is reduced as quickly as possible.
- 1.1.5 In July 2022, the 'Case for a new Greater Manchester Clean Air Plan' was submitted to the SoS. It set out that challenging economic conditions, rising vehicle prices and ongoing pandemic impacts meant that the Previous GM CAP was no longer the right solution to achieve compliance, instead proposing an investment-led, non-charging GM CAP.

- 1.1.6 The primary focus of the ‘Case for a new Greater Manchester Clean Air Plan’ was to identify a plan to achieve compliance with the legal limit value for NO₂ in a way that considered the cost-of-living crisis and associated economic challenge faced by businesses and residents. This would be achieved through an investment-led approach combined with all the wider measures that GM is implementing with the aim of reducing NO₂ emissions to within legal limits in the shortest possible time, and at the latest by 2026.
- 1.1.7 The ‘Case for a new Greater Manchester Clean Air Plan’ proposed using the remaining funding that the government had awarded to the GM Authorities for the Previous GM CAP to deliver an investment-led approach to invest in vehicle upgrades, rather than imposing daily charges, and deliver new Zero Emission Buses (ZEBs) as part of the Bee Network (a London-style integrated transport network for GM). The new plan would ensure that the reduction of harmful emissions would be at the centre of GM’s wider objectives. Within this document, this plan is referred to as the ‘Investment-led Plan’.
- 1.1.8 Having submitted the Case for a New Clean Air Plan in July 2022 GM was asked by government in January 2023 to:
- Provide modelling results for a CAZ Benchmark to address the persistent exceedances identified in central Manchester and Salford, in order for these to be compared against your proposals.
 - Identify a suitable approach to address persistent exceedances identified in your data on the A58 Bolton Road in Bury in 2025, and to propose a suitable benchmark.
 - Set out how the measures you have proposed will be modelled and evidenced overall, and to ensure that they are modelled without any unnecessary delay.
- 1.1.9 GM Authorities have been undertaking the work required to supply this further evidence and on 8th March 2023 submitted the first element, ‘Approach to Address Persistent Exceedances Identified on the A58 Bolton Road, Bury’.
- 1.1.10 In April 2023, government advised TfGM that it was to pause any new spending on bus retrofit as it had evidence that retrofitted buses have poor and highly variable performance in real-world conditions.
- 1.1.11 In the light of the government’s new evidence, JAQU issued revised general guidance to authorities producing CAPs nationwide requiring that air quality modelling should no longer assume any air quality benefits from a retrofitted bus. The government also advised that it anticipated a six-month study to quickly investigate the causes of poor bus retrofit performance and how it could be improved which would be reported in Autumn 2023.

1.1.12 To date the outputs of this study have not been made available to GM. In the absence of the government's bus retrofit study, GM has incorporated the revised guidance, as agreed with JAQU, into the modelling which underpins the development of the GM CAP to produce a report that appraises the ability of the Investment-led Plan and a CAZ Benchmark to deliver compliance with the legal limit value in the shortest possible time and by no later than 2026.

1.2 Purpose of document

1.2.1 The GM Authorities have been developing the Investment-led Plan following the submission to government in July 2022 (Case for a new GM Clean Air Plan¹). The primary focus of the 'Case for a new Greater Manchester Clean Air Plan' is to reduce NO₂ concentrations to below legal limits in the shortest possible time and by 2026 at the latest in a way that considers the current cost of living crisis and associated economic challenge faced by businesses and residents.

1.2.2 Provision of funding to taxi owners and operators to support upgrades to cleaner vehicles is one of the measures identified as part of the Investment-led Plan and represents an important mechanism for reducing exceedances.

1.2.3 This document provides an updated position on the sector operating in GM and the vehicle market. It provides information on market characteristics including vehicle types, a breakdown of owners and operators, information on the second-hand and new vehicle sales markets and details of opportunities to purchase compliant vehicles or retrofit to achieve compliance.

1.2.4 This note summarises research and engagement undertaken in 2022 to inform the Investment-led Plan and policy position. It provides an updated position to 'Technical Note 19: GM CAP Taxi and PHV Fleet Research', issued in 2019 which provided a pre-Covid-19 view of the market and supporting evidence as part of the mitigation funding in response to a charging CAZ as part of the Previous GM CAP² to implement a charging Class C GM-wide CAZ.

¹ https://assets.cffassets.net/tlpgbv1k6h2/7jtkDc5AODypDQlw0cYwsl/67091a85f26e7c503a19ec7aeb2e8137/Appendix_1_-_Case_for_a_new_Greater_Manchester_Clean_Air_Plan.pdf

² The GMCA – Clean Air Final Plan report on 25 June 2021² endorsed Greater Manchester's Final CAP and policy, following a review of the information gathered through the statutory consultation and wider data, evidence and modelling work. Throughout the development of the previous Plan, JAQU reviewed and approved all technical and delivery submissions. Within this document, this is referred to as the Previous GM CAP.

2 The Sector

2.1.1 This section provides an overview of the taxi fleet operating in GM. The current position on the sector has been informed by Department for Transport (DfT) statistics and licensing information provided by the 10 GM Authorities and deemed representative for all taxis operating in the city-region. However, there are taxis operating in GM that are not licensed to one of the 10 GM Authorities. Whilst Hackney Carriages predominately operate within their licensed authority, PHVs can operate anywhere regardless of which authority they are licensed to. This is reflected in the GM taxi population based on information provided from Driver and Vehicle Licensing Agency (DVLA) and JAQU (2023 Q2) with an estimated 41% of PHVs operating in GM that are licensed to a non-GM local authority. By comparison, 1% of Hackney Carriages are licensed to a non-GM local authority.

2.2 Taxi and PHV Definitions

2.2.1 The Taxi and PHV licensing Councillors' handbook states how taxis (also referred to as 'Hackney Carriages') and PHVs are licensed separately and highlights the difference between the two. The key difference is that PHVs cannot ply for hire, meaning that that all PHVs have to be pre-booked in advance through a licensed operator. Local authorities can regulate fares charged by taxis, whereas they have no power to do so with PHVs³. For the purposes of this note and the documentation submitted as part of the GM CAP, 'taxis' are used as the collective term covering both PHVs and Hackney Carriages as opposed to Hackney Carriages specifically.

2.2.2 Looking at the vehicle categories provided by DfT's Vehicle Certification Agency, Hackney Carriages and PHVs are classed as Category M, defining them as 'Motor vehicles with at least four wheels designed and constructed for the carriage of passengers'. As shown in **Table 2-1**, Category M is split into three sub categories with Hackney Carriages and PHVs categorised as M1. These are defined as 'vehicles designed and constructed for the carriage of passengers and comprising no more than eight seats in addition to the driver's seat'⁴.

³ Taxi and PHV licensing Councillors' handbook (England and Wales) - <https://www.local.gov.uk/publications/councillor-handbook-taxi-and-phv-licensing-2021>

⁴ Definition of vehicle categories, Vehicle Certification Agency - https://www.vehicle-certification-agency.gov.uk/vehicle-type-approval/what-is-vehicle-type-approval/type-approval-category-definitions/#22_Category_M_%E2%80%933_Power-driven_vehicles_having_at_least_four_wheels_and_used_for_the_carriage_of_passengers

Table 2-1: Categorisation of vehicles with at least four wheels and used for the carriage of passengers

Classification	Description
M1	Vehicles designed and constructed for the carriage of passengers and comprising no more than eight seats in addition to the driver's seat.
M2	Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding 5 tonnes.
M3	Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 tonnes.

Source: Vehicle Certification Agency

2.3 Data Availability

- 2.3.1 To gain access to licensed taxi data for GM, the 10 GM Authorities provided records of licensed Hackney Carriages and PHVs in June 2023. From this, the data was processed and reviewed to remove duplicate vehicles that were shown to hold a license with multiple local authorities, and to identify where records were missing. Following on from the review process, the data was then analysed to provide a clearer picture of the fleets including a breakdown of Hackney Carriages licences and PHV licences, the age of the fleet, fuel types, and the most common vehicle make used. This note also draws information from national taxi statistics from DfT, the latest data records as of April 2023. Although these two datasets do not directly align, they provide context of the taxi market in GM as well as comparisons in overall fleet against regional and national data.

2.4 Market Overview

- 2.4.1 Data provided by DfT, as shown in **Table 2-2**, illustrates that in 2023, the total number of licensed Hackney Carriages and PHVs in England stood at 289,400, a rise of 1.4% from 2018. With regard to the North West (NW), there was a total of 34,670 Hackney Carriages and PHVs registered, a decrease of 3.5%. GM has a total of 13,623, a decrease of 6.3% compared to 2018. They represent 39% of the NW fleet and 5% of the Hackney Carriages and PHV fleet in England.
- 2.4.2 There are a total of 57,200 licensed Hackney Carriages across England in 2023, nearly 20% of the combined taxi total and a decrease of 27.5% compared to 2018. For PHVs there are 232,200 vehicles registered, accounting for 80% of the combined total and an increase of 8% compared to 2018. In the NW, there are 7,414 Hackney Carriages, a 12% decrease compared to 2018, and this figure represents 13% of the Hackney Carriage market in England. In terms of PHV, there are 27,300 in the NW, a decrease of 1% compared to 2018, representing 12% of the overall figure in England. In GM, there are a total of 1,945 Hackney Carriages, 7% less than in 2018, representing 3% of the market in England. There are 11,678 licensed PHVs in GM, 6% less than in 2018, accounting for 5% of the market in England.

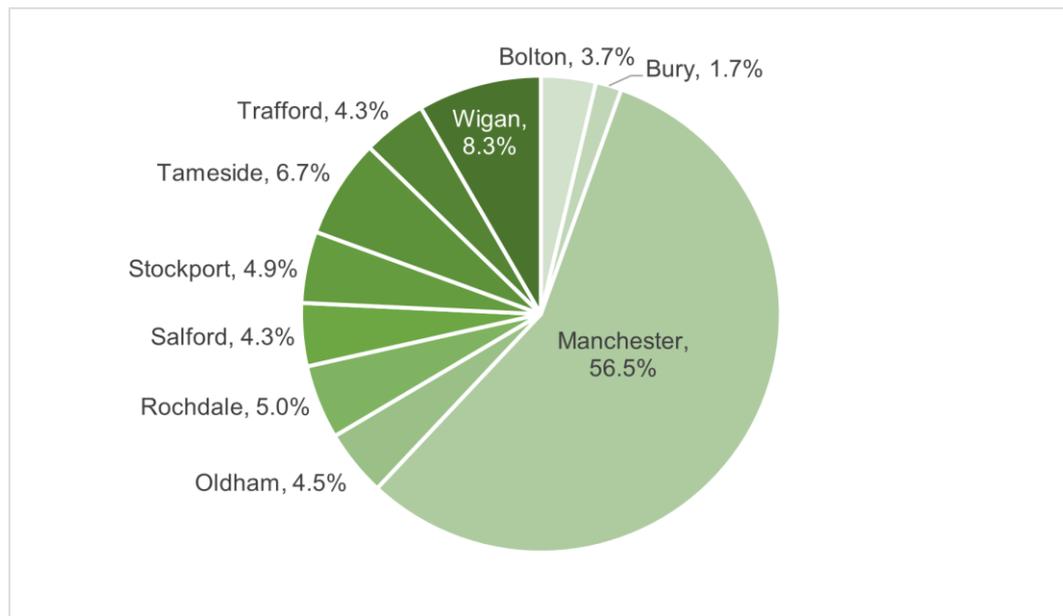
Table 2-2: Taxi licensing statistics (DfT) – 2018 & 2023

	Vehicle Type	2018	2023	Perc Change
England	Hackney Carriages	73,100	57,200	-28%
	PHV	212,300	232,200	9%
	Total	285,400	289,400	1%
NW	Hackney Carriages	8,300	7,414	-12%
	PHV	27,600	27,300	-1%
	Total	35,900	34,670	-4%
GM	Hackney Carriages	2,080	1,945	-7%
	PHV	12,401	11,678	-6%
	Total	14,481	13,623	-6%

Source: DfT

- 2.4.3 With regard to the average age of Hackney fleet, in 2023 the average age of a Hackney Carriage across England outside of London was 8 years, which is much older compared to London, where the average age was just over 6 years. In the NW the average age of a Hackney vehicle was between 9 and 10 years, which is older compared to the national average. In GM, the average age of the Hackney fleet is in line with the NW average, between 9 and 10 years.
- 2.4.4 The average age of the PHV fleet was much younger than Hackney fleet as per March 2023 data. The national average excluding London was between 6 and 7 years, whilst in London the average age of a PHV vehicle was between 4 and 5 years. In the NW, the PHV fleet was older than the national average, with an average age of a PHV over 7 years. In GM, the PHV fleet was slightly younger compared to NW average but still averaged just over 7 years.
- 2.4.5 As shown in **Figure 2-1**, Manchester has the largest number of Hackney Carriage licenses across all 10 GM Authorities, operating 1,070 out of a total 1,893 across GM. This represents a 57% share of the Hackney Carriage market in GM. The second largest figure of 158 is in Wigan, which represents an 8% share of the Hackney Carriage market in GM. These figures show a concentration of Hackney Carriages operating in Manchester City Council authority area with the trip demand of Manchester City Centre.

Figure 2-1: Total registered Hackney Carriages by local authority (June 2023)



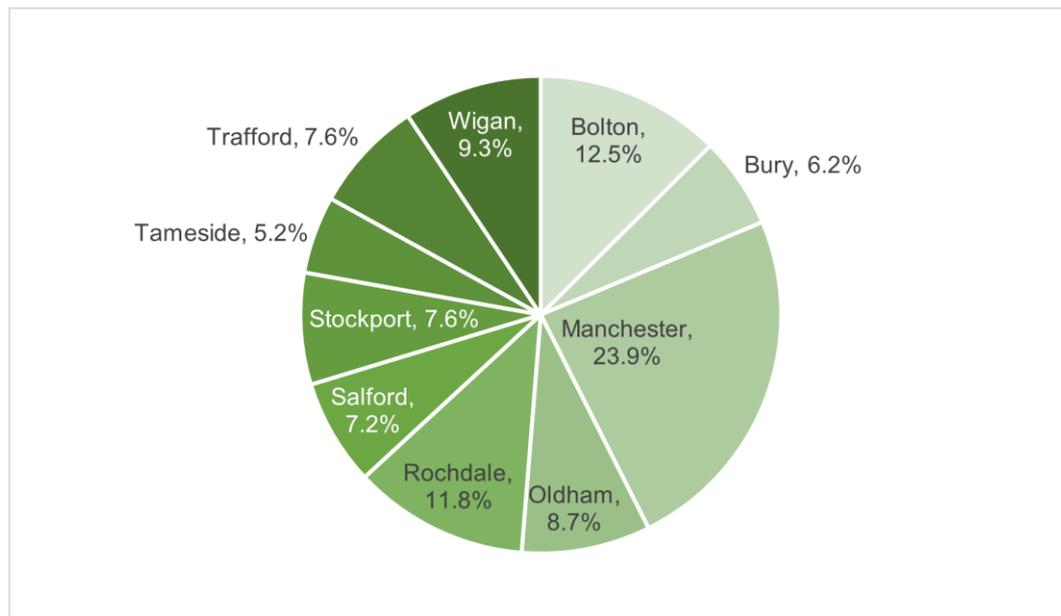
Source: GM Authorities

2.4.6 The smallest Hackney Carriage fleet is located in Bury with 33 registered vehicles, comprising 2% of the total GM fleet. The average Hackney Carriage fleet size across all 10 GM Authorities is 189.

2.4.7 **Figure 2-2** shows the proportion of registered PHVs across the 10 GM Authorities. Similar to the Hackney Carriages fleet, Manchester has the largest number of PHV licenses with 2,879, representing 24% of PHV licenses across GM. The second largest fleet of PHVs is located in Bolton with a total of 1,500, accounting for 13% of the fleet in GM. Rochdale has a marginally smaller PHV fleet than Bolton but still makes up 12% of the GM fleet.

2.4.8 The smallest fleet of PHVs is located in Tameside where there are 613 registered vehicles, representing 5% of the total GM fleet.

Figure 2-2: Total registered PHVs by local authority (June 2023)



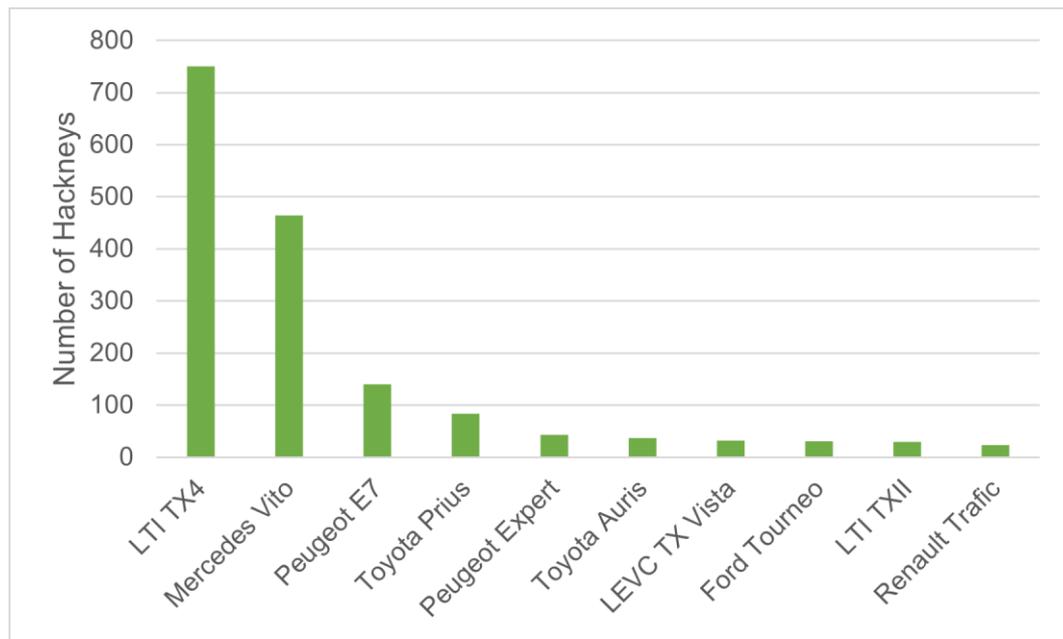
Source: GM Authorities

2.5 Vehicle Make and Models

- 2.5.1 **Figure 2-3** shows the most commonly used vehicles in the Hackney Carriage fleet across GM. The most popular vehicle is the London Taxi Company TX4 (LTI TX4) with 750 registered vehicles, representing almost half (40%) of GM's fleet. The LTI TX4 is the second newest instalment of the LTI range and was manufactured between 2007-2017 and operates off a diesel fuelled engine. LTI rebranded as the London Electric Vehicle Company (LEVC) in 2017 and no longer produce diesel variants, focusing on electric vehicles only.
- 2.5.2 The Mercedes Vito is the next most popular Hackney Carriage used in GM with 464 registered vehicles, accounting for 25% of the GM fleet. In 2008, Manchester City Council allowed the Mercedes Benz Vito Taxi to be awarded a Hackney Carriage license if slight modifications were made to those with PHV licenses. These modifications included a Hackney Carriage roof sign, a separate driver/passenger compartment and wheelchair accessibility as standard⁵.
- 2.5.3 140 registered vehicles are listed as a Peugeot E7, representing 7% of the GM fleet. The E7 is purpose built for Hackney Carriages and is an adaption to the Peugeot Expert designed in collaboration with Cab Direct.

⁵ Manchester City Council Report for Resolution, Licensing Policy Mercedes Vito Taxi - https://www.manchester.gov.uk/egov_downloads/Item_5_Licensing_Policy_Mercedes_Vito_Taxi_FINAL.pdf

Figure 2-3: Hackney Carriage vehicles used in GM



Source: GM Authorities

2.5.4 **Figure 2-4** provides images of the four most common vehicles in the GM Hackney Carriages fleet.

Figure 2-4: Most common vehicles used in Hackney Carriages fleet



LTI TX4



Mercedes Vito



Peugeot E7

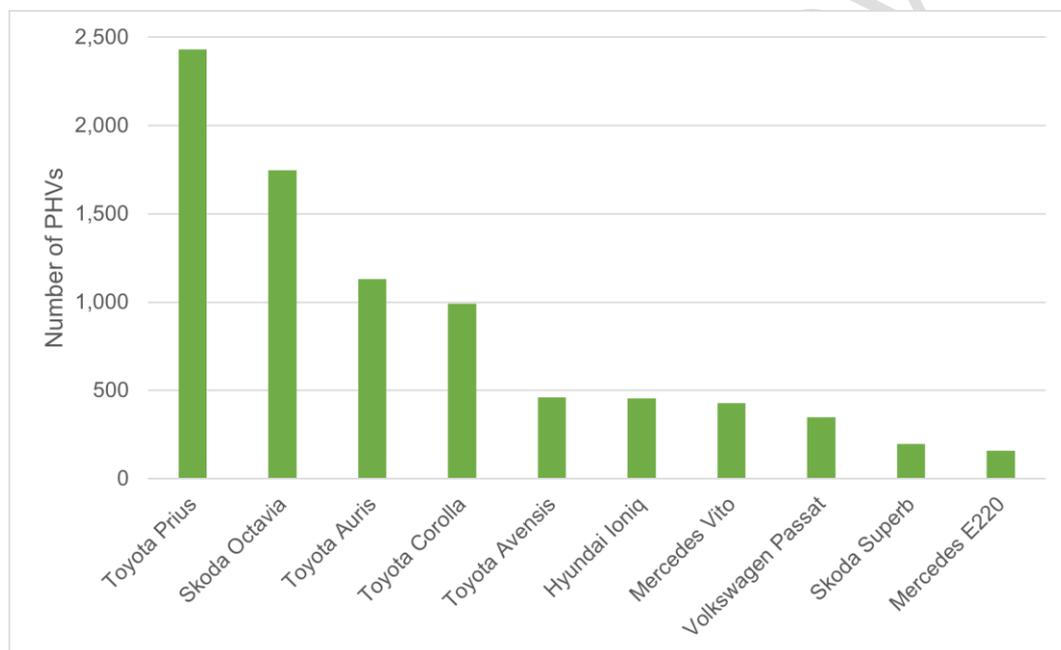


LTI TX2

2.5.5 As shown in **Figure 2-5**, due to the size of the PHV fleet in GM (12,026 vehicles), there is a large variance in vehicle makes and models. The most common PHV model used in GM is the Toyota Prius (n = 2,433), which accounts for 20% of the total GM fleet. The Toyota Prius is no longer available to buy as a new car in the UK with the manufacturer making a number of changes to the models available.

2.5.6 The second most popular vehicle model after the Toyota Prius is the Skoda Octavia (n = 1,746), followed by the Toyota Auris (n = 1,130) and the Toyota Corolla (n = 992). There are a number of different Toyota models represented as the Toyota Avensis, Auris and Prius models have been discontinued.

Figure 2-5: PHV vehicles used in GM



Source: GM Authorities

2.5.7 **Figure 2-6** provides images of the four most common vehicles used in the GM PHV fleet.

Figure 2-6: Most common vehicles used in PHV fleet



Skoda Octavia



Toyota Prius



Toyota Avensis

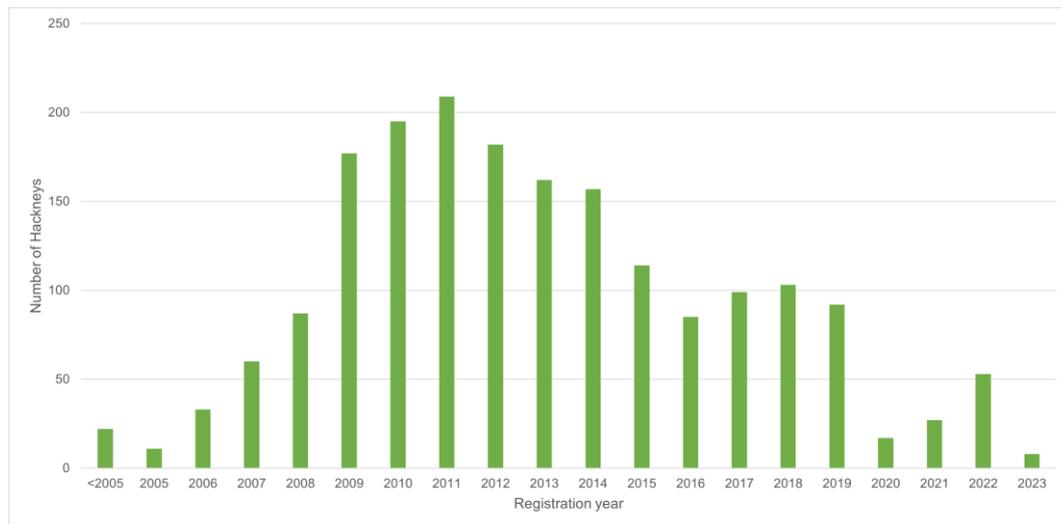


Toyota Auris

2.6 Age of Fleet

2.6.1 **Figure 2-7** provides an insight into the age of registered Hackney Carriages across GM. The most common production year for Hackney Carriages is 2011 ($n = 209$), accounting for 11% of total Hackney Carriages in GM. However, both 2010 ($n = 195$) and 2012 ($n = 182$) have a similar count to 2011. These three years combined total 586 vehicles, accounting for 31% of the GM Hackney Carriage fleet. 52% ($n = 976$) of the current GM Hackney Carriage fleet are 10 years or older. There is considerable drop-off of new Hackney Carriages from 2020 which could be associated to the impact of the Covid-19 pandemic on the industry and potentially taxi operators waiting to access the GM CAP funds.

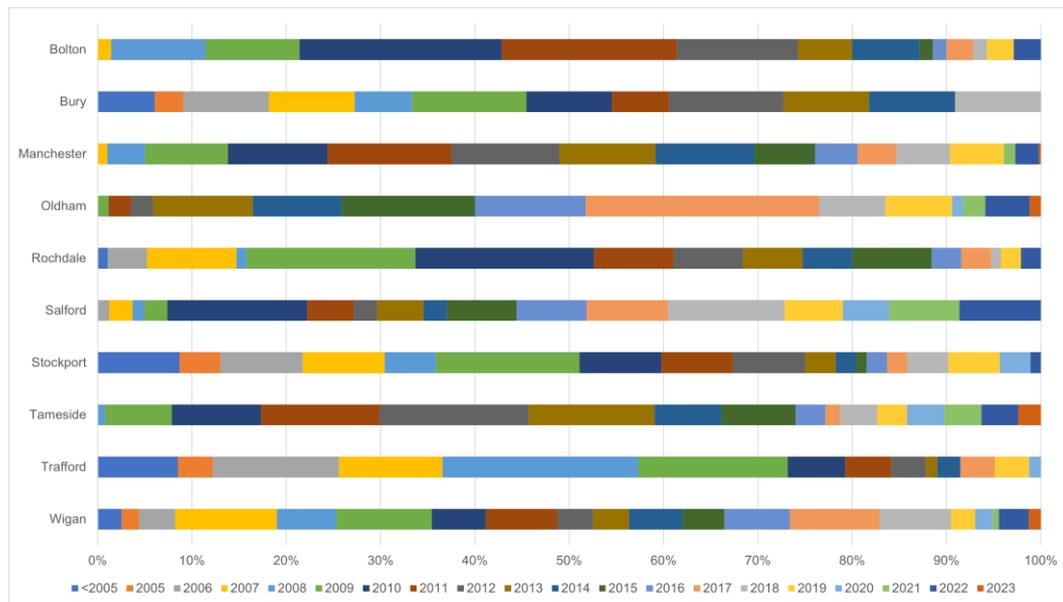
Figure 2-7: Age of Hackney Carriage fleet in GM (Jun-23)



Source: GM Authorities

- 2.6.2 **Figure 2-8** provides a breakdown of the age of the Hackney Carriage fleet by year and local authority. There is some variability in age profiles by local authority with each local authority having different age standard policies and Bolton and Rochdale having no age policies for new to fleet Hackney Carriages.
- 2.6.3 The age of Stockport’s Hackney Carriage fleet is much older when compared to the likes of Manchester, as evidenced by 72 out of a total 92 vehicles in the fleet dating back to pre-2013. This accounts for 78% of the Stockport Hackney Carriage fleet.
- 2.6.4 Similar to Stockport, Bolton’s Hackney Carriage fleet has a large majority of licensed Hackney Carriages that would be considered old vehicles. 62 out of 70 vehicles were registered before 2015, representing 89% of Bolton’s fleet.
- 2.6.5 Salford has the newest Hackney Carriage fleet. 50 out of 81 vehicles were manufactured from 2015 onwards, representing 63% of the Salford Hackney Carriage fleet.

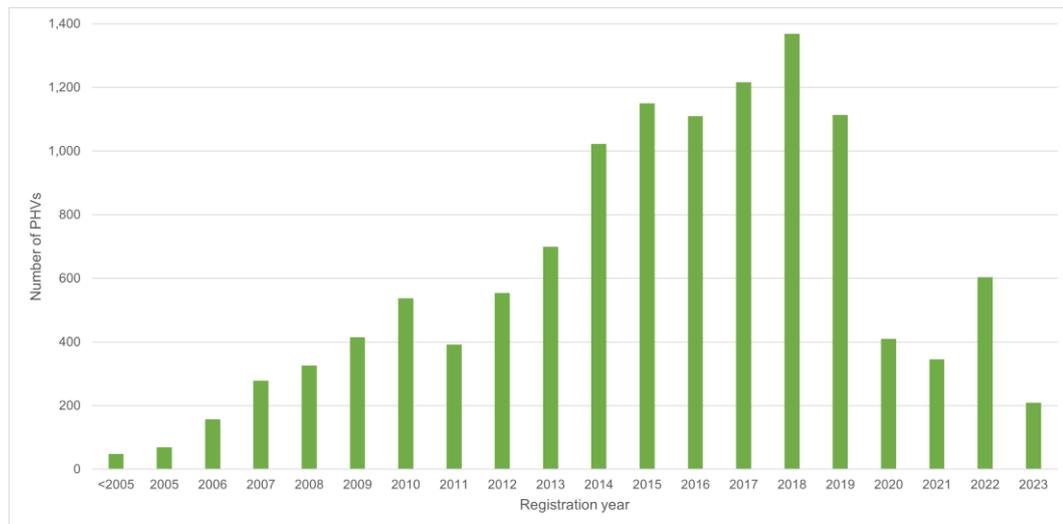
Figure 2-8: Age of Hackney Carriage fleet by local authority (Jun-23)



Source: GM Authorities

- 2.6.6 The age of the PHV fleet in GM is displayed in **Figure 2-9**. It shows that the most common registration year for a vehicle is 2018 (n = 1,369). Registration in the years from 2017 to 2019 represent a total of 3,699 out of 12,026 vehicles, equating to 31% of the total GM PHV fleet.
- 2.6.7 Combining the years from pre-2005 up to 2013, which represents vehicles 10-years or older from the present, yields a total of 2,776 PHVs, representing 23% of the GM fleet. Compared to the Hackney Carriage fleet, the PHV fleet is younger due to lower renewal costs for PHVs. Albeit the new to fleet registered vehicles have fallen significantly in 2020, consistent with Hackney Carriages and has not since recovered to pre-Covid-19 pandemic levels.

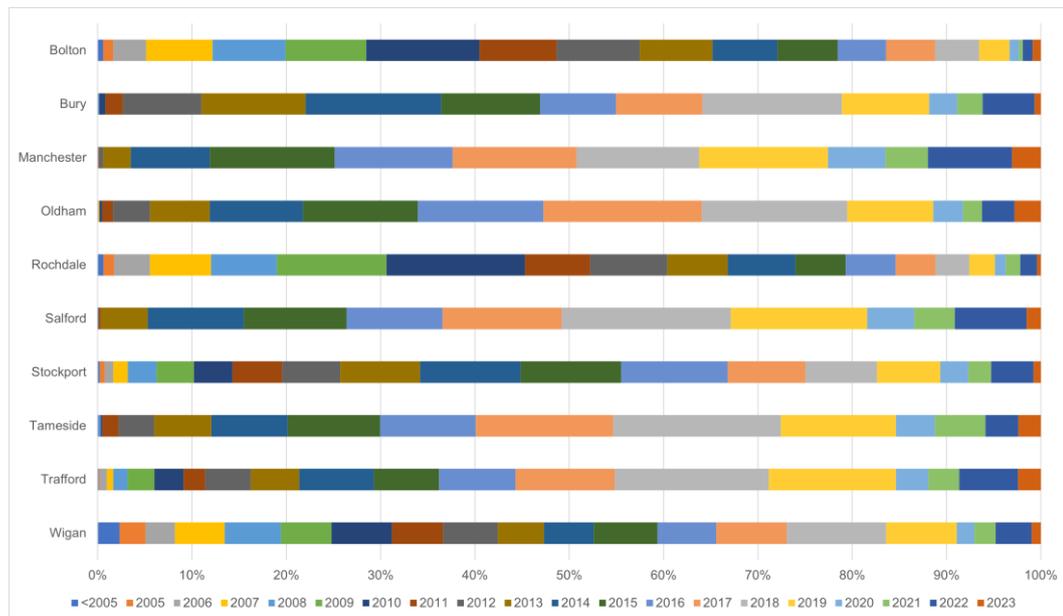
Figure 2-9: Age of PHV fleet in GM (Jun-23)



Source: GM Authorities

- 2.6.8 **Figure 2-10** provides a breakdown of the PHV fleets by year and local authority. Manchester has one of the youngest fleets compared to other local authorities in GM, with the oldest vehicle registered in 2010 and a median registration year of 2017. The authority has the most stringent age policy for all PHVs (including Wheelchair Accessible Vehicles (WAVs)) at 10 years old.
- 2.6.9 Bolton’s fleet has an older age profile than Manchester with the most common year of registration, 2010, reflecting 180 vehicles, or 12% of the total PHV fleet in Bolton. Bolton does not have a maximum age policy for existing vehicles.
- 2.6.10 Rochdale has the third largest PHV fleet in GM with a total of 1,421 registered vehicles. The most common registration year of vehicle in the fleet is 2010 (n = 209), equating to 15% of the Rochdale fleet.
- 2.6.11 By contrast, Salford has a newer fleet in relation to the other GM Authorities. Of the 864 PHVs registered, 730 were manufactured from 2015 onwards, accounting for 84% of Salford’s PHV fleet.

Figure 2-10: Age of PHV fleet by GM Authority (Jun-23)

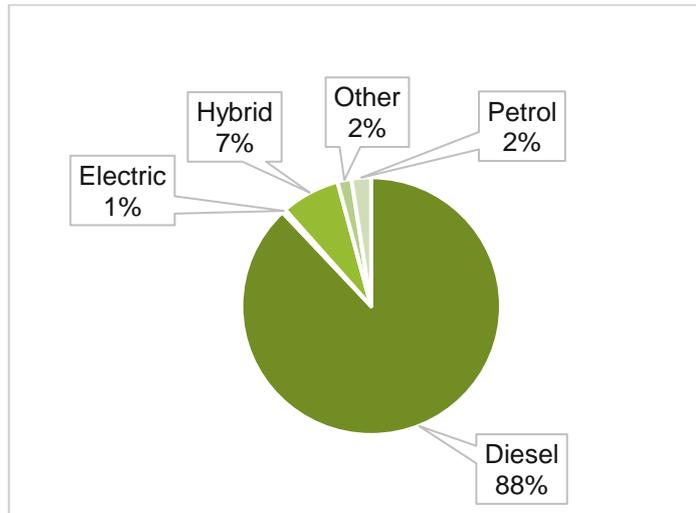


Source: GM Authorities

2.7 Fuel Type

- 2.7.1 The fuel types of all Hackney Carriages registered in GM is shown in **Figure 2-11**. The figure shows that a significant number of Hackney Carriages are fuelled by diesel (n = 1,666). This represents 88% of the GM Hackney Carriage fleet.
- 2.7.2 The second most common fuel type is hybrid, representing 139 vehicles or 7% of the GM Hackney Carriage fleet. Finally, electric powered and other fuel types each represent 2% of the Hackney Carriage fleet. Other fuel types include VPD heavy oil, bi-fuels (which allow vehicles to run on two fuels, usually petrol and a natural gas), Liquefied Petroleum Gas (LPG) and biofuels.

Figure 2-11: Fuel types of GM Hackney Carriage fleet

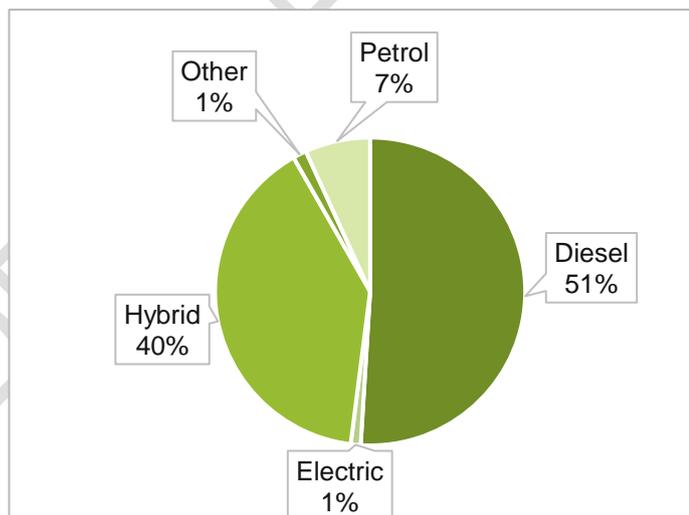


Note: Percentages have been rounded
Source: GM Authorities

2.7.3 **Figure 2-12** displays the fuel types of all PHVs registered in GM. Just over half (51%) of PHVs use diesel, 6,129 out of 12,026 vehicles.

2.7.4 However, there are a significant number of PHVs that are classed as hybrid vehicles (n = 4,783), representing 40% of the GM PHV fleet. Compared with Hackney Carriages, the PHV market is now well represented by hybrid vehicles, linking to the most popular PHV vehicles having a hybrid option such as the Toyota models and Skoda Octavia.

Figure 2-12: Fuel types of GM PHV fleet

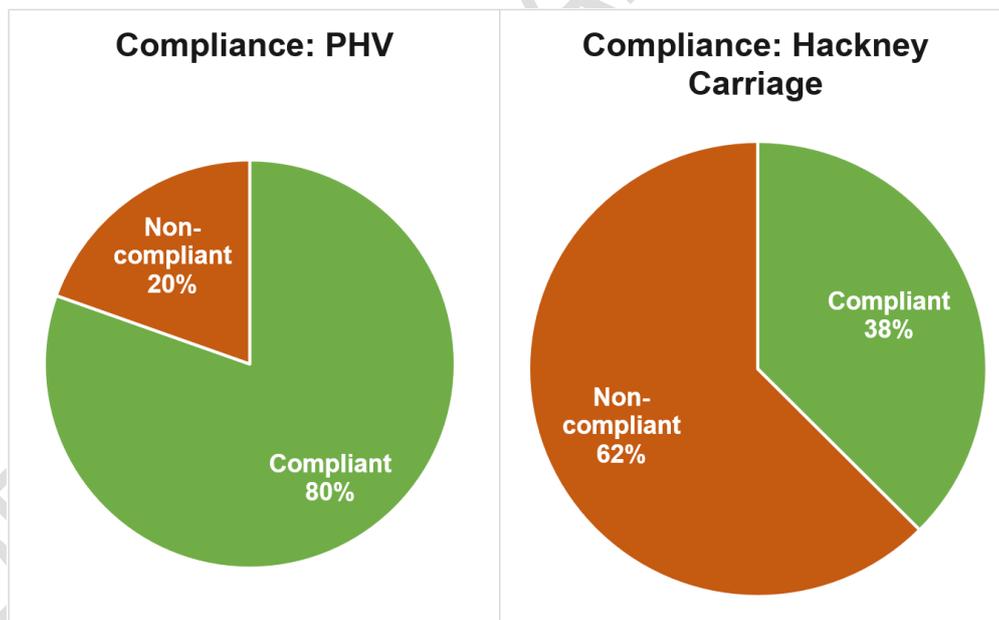


Note: Percentages have been rounded
Source: GM Authorities

2.8 Compliance

- 2.8.1 Hackney Carriages and PHVs are available in both petrol and diesel variants, in addition to hybrid and electric vehicles. To align with the requirements of the GM CAP, a vehicle will be considered compliant if it has a Euro 6 diesel engine (introduced in 2015) or a Euro 4 petrol engine (introduced in 2006).
- 2.8.2 Compliance rates have been determined by sectioning the years the Euro Standard was implemented. For example, Euro 5 covers the period from 2010 to 2014. Then, using the vehicle's registration plate ID, the year of registration was matched to the Euro Standard year, which could then be matched back to the Euro class.
- 2.8.3 **Figure 2-13** shows the compliance rate for GM-licensed Hackney Carriages and PHVs. Just under two-thirds (62%) of Hackney Carriages in GM are non-compliant vehicles, representing a significant proportion of the fleet. Meanwhile, the proportion of PHVs that are non-compliant represents one fifth (20%). It should be noted that the number of non-compliant PHVs remains higher (n = 2,352) than Hackney Carriages (n = 1,183) due to the higher volumes of PHVs operating.

Figure 2-13: Hackney Carriages and PHV compliance rate



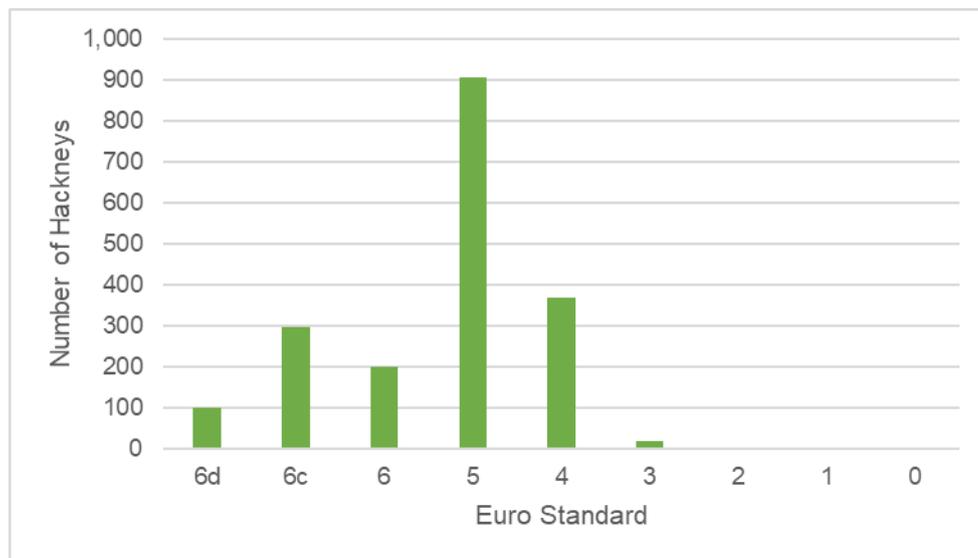
Source: GM Authorities

- 2.8.4 The Euro Standard for Hackney Carriages in the GM fleet is displayed in **Figure 2-14**. The most common Euro class is Euro 5 (n = 905), representing 47% of the GM Hackney Carriage fleet. The second most common Euro class is Euro 6 (encompassing 6, 6c and 6d).

2.8.5 A total of 598 Hackney Carriages meet the Euro 6 standard, which is equivalent to 32% of the Hackney Carriages fleet in GM. The third largest total, 368 vehicles, belongs to the Euro 4 class and represents 19% of the Hackney Carriage fleet. However, it is worth noting that 14% of GM's Hackney Carriage fleet are hybrid and 6% have alternative fuels to diesel and petrol, meaning that there are greater quantities of compliant vehicles than represented in **Figure 2-14**.

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Figure 2-14: GM Hackney fleet by Euro Standard



Source: GM Authorities

2.8.6 **Figure 2-15** displays the Euro Standard for PHVs in GM. For PHVs, the most common Euro Standard engine is Euro 6 (encompassing 6, 6c and 6d) (n = 7,527), comprising 63% of the GM fleet. Euro 5 (n = 3,205) and Euro 4 (1,244) make up 27% and 10% of the GM PHV fleet respectively. This highlights that the majority of PHVs comply with Euro Standards.

Figure 2-15: GM PHV fleet by Euro Standard



Source: GM Authorities

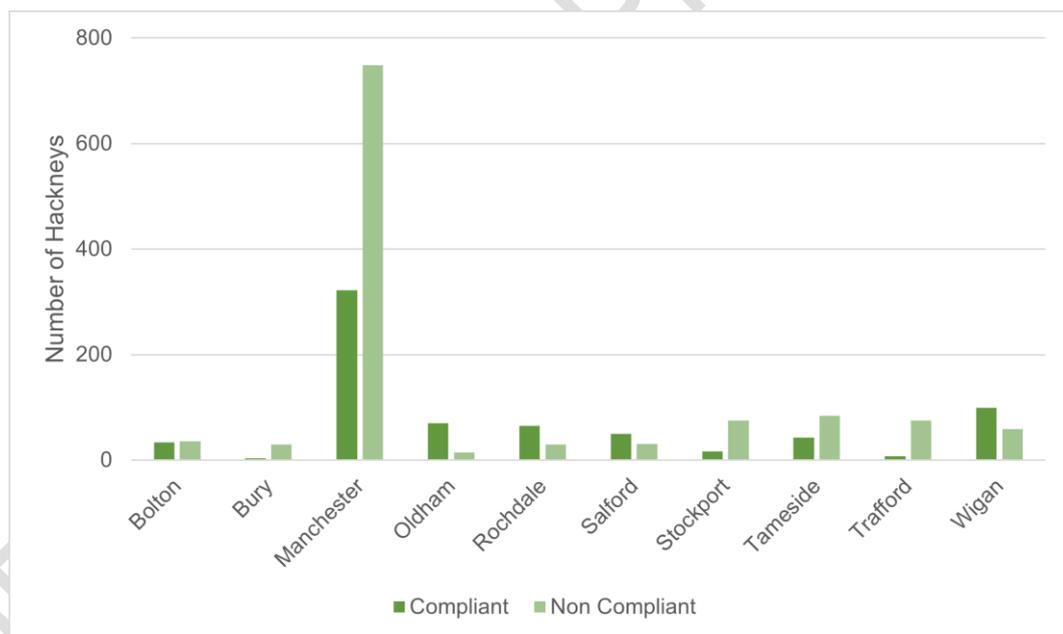
2.8.7 **Figure 2-16** shows the number of compliant and non-compliant Hackney Carriages within GM by GM Authority. The largest number of non-compliant Hackney Carriages (n = 748) is located in Manchester. Non-compliant vehicles represent 70% of the total Manchester Hackney Carriage fleet. Tameside has the second largest non-compliant fleet (n = 84), equating to 66% of total Hackney Carriages.

2.8.8 Stockport, Trafford and Bury are the three GM Authorities with the highest non-compliance rate, based on the proportion of compliant Hackney Carriages. 75 out of 92 vehicles (81%) of Stockport’s fleet are non-compliant, 75 out of 82 vehicles (91%) of Trafford’s fleet are non-compliant, and 30 out of 33 vehicles (91%) of Bury’s fleet are non-compliant. Although these three fleets are not the largest in GM, they represent a significant imbalance between compliant and non-compliant Hackney Carriage proportions within GM.

2.8.9 Although Manchester has the largest non-compliant Hackney Carriage fleet in GM, they also have the largest compliant fleet (n = 322). Oldham has one of the smaller Hackney Carriage fleets in GM but also one of the best compliance rates with 70 out of 85 vehicles meeting Euro Standards, accounting for 82% of their Hackney Carriage fleet.

2.8.10 Rochdale, Wigan and Salford also have some of the better Hackney Carriage compliance rates in GM. 65 out of 95 vehicles (68%) in Rochdale’s fleet are compliant, 99 out of 158 vehicles (63%) in Wigan’s fleet are compliant, and 50 out of 81 vehicles (62%) in Salford’s fleet are compliant.

Figure 2-16: Hackney Carriages compliance by GM Authority



Source: GM Authorities

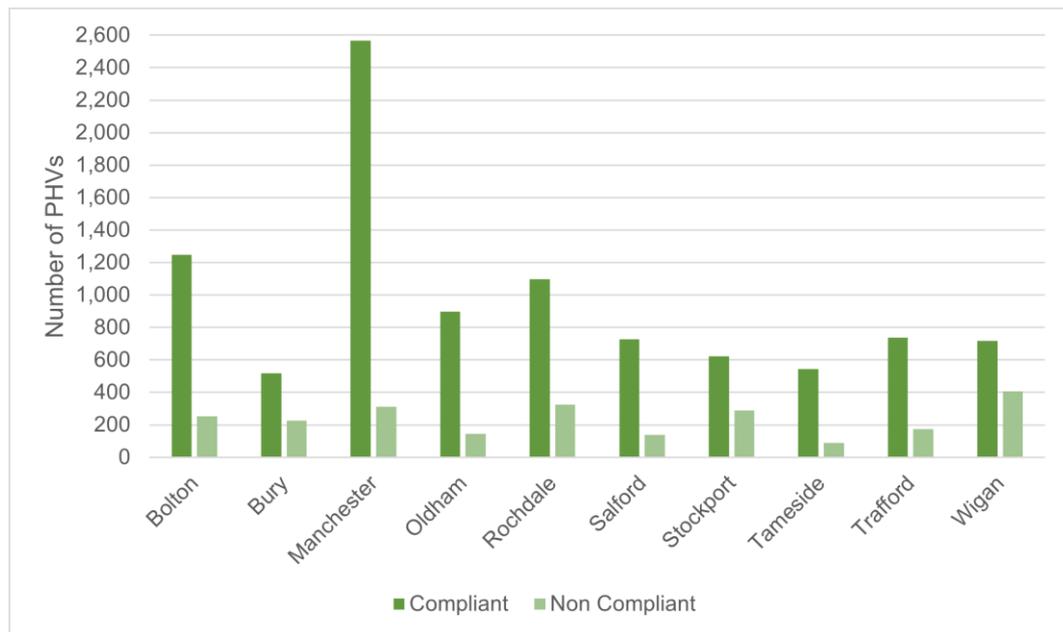
2.8.11 **Figure 2-17** shows that Manchester has the largest compliant PHV fleet in GM (n = 2,566), accounting for 89% of PHVs in Manchester. With 1,249 (83%) compliant PHVs, Bolton has the second largest compliant PHV fleet in GM in terms of the number of compliant vehicles.

2.8.12 Tameside, Oldham and Salford have comparable proportions of compliant PHVs across their fleets, with proportions of compliance ranging from 84% to 86%.

2.8.13 Wigan has the largest non-compliant fleet in GM (n = 406), representing 36% of Wigan's total PHVs. Rochdale has the second largest number of non-compliant PHVs (n = 323), accounting for 23% of their fleet.

2.8.14 Unlike their Hackney Carriage fleet, Trafford has one of the highest proportions of compliant PHVs (n = 738) with 81% of their fleet comprising compliant vehicles.

Figure 2-17: PHV compliance by local authority



Source: GM Authorities

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3 Purchasing, Leasing and Retrofitting

3.1.1 This section aims to provide an update of the Hackney Carriages and PHV market price in context of vehicle grant funding made available as part of the GM CAP. As there is no information provided by DfT or any other external body, a search of price ranges from online websites has been carried out⁶.

3.1.2 It is important to note that due to the nature of purchasing a vehicle from various sites and companies, there are no set prices for vehicles, even of the same make/model and manufacturing year. This means that prices can vary depending on the condition of the vehicle such as the mileage. The figures provided are simply estimates and guides of potential costs for purchasing a new or used vehicle.

3.2 New Hackney Carriages and PHVs

3.2.1 With regard to the Hackney Carriage fleet, LTI TX4s remain the most common vehicle used in GM in 2023 (n = 726), down from 844 registered in 2019. However, as highlighted earlier in the note, the TX4 is no longer in production in the UK as LTI was relaunched as LEVC, limiting the sale to electric only. New petrol and diesel Hackney Carriages continue to be available from the non-London-style fleet, including vehicles such as the Mercedes Vito. The switch from petrol/diesel to zero emission vehicles has limited the new and second-hand market for purpose-built Hackney Carriages as generally, if a taxi operator wanted to upgrade to a new LTI, they would have to purchase a zero emission LEVC vehicle.

3.2.2 Due to the variety of Hackney Carriages and PHVs on offer, prices across the most common vehicle makes and models have been collated. **Table 3-1** provides a summary of costing estimates for the most common Hackney Carriage vehicles licensed to one of the 10 GM Authorities.

3.2.3 The Peugeot E7 model has been discontinued so the closest alternative, the Peugeot E-Rifter, has been presented instead.

3.2.4 On average, the price of the most popular Hackney Carriage models has risen between 2019 to 2023. The price of a new LTI has increased by over £5,000, the price of a Mercedes Vito has risen by over £13,000 and the price of a Peugeot increasing by over £4,000 (albeit comparing a different model).

⁶ For example, CabDirect <https://www.cabdirect.com/>

Table 3-1 Estimated cost for most common Hackney Carriage vehicles

Vehicle Make	Upgrade	2019 Estimate Cost for Vehicle	October 2023 Estimate Cost for Vehicle
LTI TX4	LEVC TX Electric Taxi Icon	Prices starting from £55,599	£60,103
LTI TX4	LEVC TX Electric Taxi Vista		£63,049
LTI TX4	LEVC TX Electric Taxi Comfort		£65,689
LTI TX4	LEVC TX Electric Taxi Comfort Plus		£67,189
Mercedes Vito	Euro 6 Upgrade	£41,995	£55,612
Peugeot E7	Peugeot E-Rifter Electric Taxi	£30,000	£34,595

Source: Desktop Research from Online Sources

- 3.2.5 For new vehicles, some vehicle manufacturers do not release their prices online and require individual enquiries to gain a quote. For this reason, alternative websites (e.g., AutoTrader) were used to obtain vehicle prices.
- 3.2.6 Like the Hackney Carriages fleet, there are a large variety of vehicle makes/models used as PHVs, meaning that only the top five most common PHVs in GM were selected for analysis. **Table 3-2** provides a summary of the costing.
- 3.2.7 The Toyota Avensis, Auris and Prius models have been discontinued so the Toyota Corolla has been used as the closest alternative.

Table 3-2: Estimated cost for most common PHVs

Vehicle Make	Upgrade	2019 Estimate Cost for Vehicle	October 2023 Estimate Cost for Vehicle
Toyota Prius	Toyota Corolla Petrol Hybrid Upgrade	£19,500 - £27,600	£27,777 - £34,655
Skoda Octavia	Euro 6 Upgrade	£18,600 - £31,400	£24,900 - £45,315
Toyota Auris	Toyota Corolla Petrol Hybrid Upgrade	£19,500 - £27,600	£27,777 - £34,655
Toyota Corolla	Toyota Corolla Petrol Hybrid Upgrade	£19,500 - £27,600	£27,777 - £34,655
Toyota Avensis	Toyota Corolla Petrol Hybrid Upgrade	£19,500 - £27,600	£27,777 - £34,655

Source: Desktop Research from Online Sources

3.3 Second-hand Compliant Taxis

- 3.3.1 Since research was conducted into taxi vehicle prices to support the Previous GM CAP, three years have elapsed, leading to vehicle depreciation. In theory, a vehicle owner could operate a 17-year-old petrol vehicle and still be compliant with a CAZ or emission standards (Euro 4 petrol compliant).

3.3.2 During the desktop search for second-hand compliant LTI TX4, it was discovered that there was only one GM CAP-compliant vehicle listed. The vehicle had a 2017 registration plate and was listed for £31,495 in 2019, which decreased to £23,749 by 2023. Given the vehicle availability limitations for a TX4, a review of second-hand compliant Mercedes Vitos was conducted as they are the second most common vehicle model used. It was apparent during the price search that in general, there is no large variance in price across vehicles. All vehicles had a similar sized diesel engine of 2000cc.

3.3.3 **Table 3-3** provides a simple price range of all Mercedes Vitos listed with no variance in specifications or year of manufacture. The price range increased from between £15,500 to £43,000 in 2019, to between £18,500 and £69,995 in 2023. However, it is worth noting that the recorded £43,000 vehicle was manufactured in 2019, whilst the rest of the models ranged from 2015 to 2018. The £69,995 vehicle was manufactured in 2023 whilst the rest of the models ranged from 2018 to 2021. In 2019 most of the vehicles were priced around £15,000, which had increased to around £38,000 in 2023.

Table 3-3: Second-hand compliant Mercedes Vito

Year of Manufacture	Price Range	Review Date
2015-2019	£15,500 - £43,000	2019
2018-2022	£18,500 - £69,995	October 2023

Source: Desktop Research from Online Sources

3.3.4 **Table 3-4** displays the price range for the Skoda Octavia due to its popularity among PHV drivers. Unlike the Mercedes Vito, the Skoda Octavia is available with diesel or petrol engines. A hybrid model also became available in November 2020⁷. As there are different manufacturing years for the compliance of diesel engines (Euro 6) and petrol engines (Euro 4), the table provides the price ranges for both in order to give a clearer picture on the difference in the second-hand market. There has been an increase in both petrol and diesel Skoda Octavias between 2019 and 2023.

3.3.5 Both engine types had roughly the same maximum price of just over £32,000 when reviewed in 2019. However, there were cheaper vehicles available with petrol engines, with the cheapest viable option being priced at £1,450 compared to the cheapest diesel option of £5,490. Notably, the Euro Standard of petrol cars dates back to 2005 so these vehicles are likely to be in worse condition and have a higher mileage than the older compliant diesel vehicles.

⁷ <https://www.autoexpress.co.uk/skoda/octavia/104231/plug-hybrid-skoda-octavia-iv-set-uk-launch-next-month#:~:text=It%27ll%20be%20available%20to.choice%20of%20four%20trim%20levels.>

Table 3-4: Second-hand compliant Skoda Octavia

Year of Manufacture	Fuel Type	Price Range	Review Date
2015 – 2019	Diesel	£5,500 - £32,100	2019
2005 – 2019	Petrol	£1,500 - £32,700	2019
2018 – 2022	Diesel	£6,499 - £38,175*	October 2023
2018 – 2022	Petrol	£4,690 - £36,950*	October 2023

Source: Desktop Research from Online Sources

*2018-2022 price ranges include diesel and petrol hybrids

3.4 Second-hand Non-Compliant Taxis

3.4.1 Using the LTI TX4 as an example, **Table 3-5** highlights the cost of a non-compliant vehicle. Due to the differences in engine size and mileage, there were clear variances in prices and therefore a range of these has been provided.

3.4.2 The TX4 model was manufactured between 2007 to 2017. This has informed the provision of a range of 5-9 years and 9-12 years for 2019 price comparisons. This process has subsequently been performed for 2023 with vehicle manufacture years ranging from 2011 to 2017 instead.

Table 3-5: Second-hand non-compliant LTI TX4

Age (Years)	2019 Price	October 2023 Price
5-9	£3,800 - £20,995	£15,800
9-12	£1,000 - £5,000	£1,450 - £15,995

Source: Desktop Research from Online Sources

3.4.3 For vehicles aged between 5-9 years, there were a minimal amount of TX4 models for sale which limited the depth of the search and price variety. The cheapest vehicle found in 2019 was £3,800 with the most expensive vehicle priced at £20,995. The median price was £6,350. These values have increased in 2023 with the cheapest vehicle now valued at £15,800.

3.4.4 There was much greater choice for vehicles aged between 9-12 years which facilitated greater variety in prices. The cheapest TX4 model of that age range was £1,000 with the most expensive priced at £5,000 in 2019, split by a median price of £1,900. These values have increased in 2023, with **Table 3-5** showing it is much cheaper for a driver or operator to buy an older vehicle of 9 to 12 years old than one that is 5 to 9 years old.

3.4.5 The Skoda Octavia was used as an example for PHVs as it is the single most popular vehicle of choice for PHV drivers and will therefore be the most affected. **Table 3-6** provides a summary of the costs for a Skoda Octavia.

Table 3-6: Second-hand non-compliant Skoda Octavia

Age (Years)	2019 Price	October 2023 Price
5-9	£990 - £13,990	£4,750 - £15,995
9-12	£595 - £7,988	£2,295 - £9,495

Source: Desktop Research from Online Sources

3.4.6 There is large variance in the price for a Skoda Octavia due to differences in mileage, age and general condition of the vehicle. As expected, the new cars aged between 5 and 9 years were more expensive. The most expensive Skoda Octavia was £13,990 in 2019, rising to £15,995 in 2023, whilst for vehicles aged between 9 and 12 years, the most expensive price in 2019 was £7,988, rising to £9,495 in 2023. The cheapest vehicle aged 5 to 9 years was £990 in 2019, rising to £4,750 in 2023. This was slightly more expensive than vehicles aged 9 to 12 years, priced at £595 in 2019 and rising to £2,295 in 2023.

3.5 Leasing

3.5.1 Leasing entails agreeing a contract with a provider to use an asset for a particular period of time. The user never owns the asset and typically pays the provider a monthly fee until the asset is returned at the end of the contract. There are alternative methods of leasing. These include:

- Hire purchase – This usually includes paying a deposit and fixed monthly instalments typically ranging between 12-72 months. When the contract is finished the vehicle is owned by the lessee.
- Lease Finance – A contract whereby the lessee pays for the use of the asset but never owns the asset. The lessee is responsible for maintenance, repairs and running costs.
- Operating Lease – Similar to lease financing, the lessee pays to use the asset for a fixed period of time. However, the leasing party are responsible for maintenance and repairs.

3.5.2 It is considered that leasing may be a feasible option for operators or drivers that need to upgrade their vehicles but may not have the immediate capital to do so.

3.5.3 Accurate pricing was limited at this stage as many companies required a personal enquiry into prices and contract conditions, and due to the number of variables that are specific to the leaser and lessees, which makes accurate pricing difficult.

3.6 Retrofitting

3.6.1 Following feedback received during the Participatory Policy Development (PPD) undertaken with the taxi trade in 2022 and the poor and highly variable performance of bus retrofits, no retrofit option is to be offered as part of the Investment-led Plan or the CAZ Benchmark.

3.7 GM Licensing – Minimum Licensing Standards and Emission Standards

- 3.7.1 In 2018, the 10 GM Authorities agreed to collectively develop, approve and implement a common set of minimum licensing standards (MLS) for Hackney Carriages and PHV services. The proposed MLS, together with funding from the GM CAP, was sought to help deliver improved safety, customer focus, higher environmental standards and accessibility. MLS covered a suite of different standards on the taxi driver and vehicle, ranging from vehicle colour and livery to vehicle age and emission standards.
- 3.7.2 The GM Authorities undertook a parallel consultation (in 2020) on the implementation of MLS across the ten GM local authorities. However, MLS did not progress to implementation as a consistent set of standards across the GM Authorities. This was due to trade concerns arising from the additional financial burden placed on taxi drivers to upgrade their vehicles to compliance, coupled with the GM CAP funding not yet being available.
- 3.7.3 Two of the main vehicle standards associated with the MLS were on vehicle age and emissions:
- Emissions: To require licensed vehicles to be compliant with the minimum emission standards as set out in the CAZ Framework, detailed as follows:
 - For all new to licence vehicles – from the date policy is determined in district.⁸
 - For existing fleets – to begin transitioning as soon as the policy is in place and to complete transitioning by 1 April 2024.
 - To note the strong ambition to move existing fleets to Zero Emissions Capable (ZEC) as soon as possible.
 - Vehicle Age: Due to existing standards for vehicle emissions, the age of the vehicle dictates what the maximum emissions are at date of manufacture. Therefore, the following vehicles age policies will be implemented:
 - PHV – under 5 years coming on to fleet and a maximum age limit of 10 years off.
 - PHV WAV – under 7 years coming on to fleet and a maximum age limit of 15 years off.
 - Purpose built Hackney Vehicle Carriage (HVC) – under 7 coming on to fleet and a maximum age limit of 15 years off.
 - Air quality metrics and impacts and testing data to be reviewed over the next 2-3 years by the Licensing Network and risks or proposed amendments brought back to Members as necessary.

⁸ Vehicles that have not been licensed with that local authority in the current year prior to renewal.

- That the above policy be implemented for new to licence vehicles as soon as the policy takes effect. That existing fleets begin transitioning and are compliant with the policy by 1st April 2024.

3.7.4 Whilst both standards would bring forward vehicle upgrades, the emission standard provides strong alignment with the GM CAP whilst also providing vehicle owners flexibility in the second-hand market.

3.7.5 Although the suite of licensing standards has not been taken forward (in the form of MLS), GM Authorities have adopted their own vehicle age and emission standards, albeit not uniformly and on different timescales across the ten authorities. The delays to implementation dates of emission standards reflects the passage of time since the MLS consultation and are in response to taxi trade financial pressures from the Covid-19 pandemic and continuing pressures post-pandemic. **Table 3-7** sets out the position of GM Authorities on emission standards for existing vehicles. The 10 GM Authorities also have standards for new-to-fleet vehicles which are often more stringent.

Table 3-7: Position of GM Authorities on emission standards

GM Authority	Existing (Nov-23) Position on existing vehicles
Bolton	No agreement
Bury	Approved for Apr 2026
Manchester	Approved for Apr 2026
Oldham	Approved for Dec 2025
Rochdale	No agreement
Salford	Approved for Apr 2026
Stockport	No agreement
Tameside	Apr 2024 – being revised to Dec 25
Trafford	Approved for Apr 2026
Wigan	Approved for Apr 2026

Source: GM Authorities

4 Vehicle Availability

4.1 Context

- 4.1.1 A desktop exercise was undertaken to understand vehicle availability for those wishing to upgrade their vehicles to meet Euro Standards. The review focused on the availability of second-hand taxis given that new vehicles can be sourced from the vehicle manufacturer.
- 4.1.2 Popular vehicle models for Hackney Carriages and PHVs were identified based on GM Taxi Licensing data for June 2023 and are shown in **Table 4-1**. Whilst there are some data input discrepancies within the taxi licensing database, vehicle makes and models which appear across both Hackney Carriages and PHV categories have been removed for the purpose of this analysis. It should be stated that the vehicle availability figures in this exercise do not reflect the total available compliant vehicles in the market. The table does however identify the most popular vehicle types used by Hackney Carriage and PHV drivers in GM.

Table 4-1: Popular taxi models

Hackney Carriages	PHV
LTI TX or LEVC Vista	Toyota Prius
Mercedes Vito	Skoda Octavia
Peugeot Expert and E-Rifter	Toyota Auris
Ford Tourneo	Toyota Corolla
Nissan Dynamo	Toyota Avensis

Source: GM Authorities

- 4.1.3 A search for the quantum of compliant vehicles was conducted based on information sourced from Autotrader in November 2023. The vehicle compliance status was derived by filtering vehicle fuel type and year of first registration.
- 4.1.4 A conservative assumption was applied to extract the number of compliant vehicles by selecting the full calendar year after the first compliant month. Euro 4 petrol vehicles are compliant if registered during or after September 2005. Diesel vehicles are compliant if registered during or after January 2016. Therefore, an assumption of 2006 for petrol and 2016 for diesel was used as date range criteria⁹.
- 4.1.5 This exercise has been produced based on two scenarios:
- **Unconstrained vehicle availability** – No restrictions from other GM Authority requirements placed upon compliant vehicles.
 - **Constrained vehicle availability** – Applies the most stringent GM Authority age standards for Hackney Carriages and PHVs.

⁹ <https://www.rac.co.uk/drive/advice/emissions/euro-emissions-standards/>

- 4.1.6 No other constraint has been placed on other purchasing considerations such as location, mileage, vehicle colour or condition.
- 4.1.7 **Table 4-2** shows the vehicle age standards of each GM Authority. Similar to emission standards, there is not a consistent age policy across the 10 GM Authorities and therefore the most stringent age standards have been used to constrain vehicle availability to prevent non-viable upgrades and vehicles becoming susceptible to individual local authority age policies. As shown in the table, Bolton and Rochdale currently do not have any age standards for new to fleet Hackney Carriages. Bolton also does not have any age standards for PHVs.

Table 4-2: Licensing standards in GM

GM Authority	Hackney Carriages		PHVs	
	Maximum age for new to fleet	Maximum age for existing vehicles	Maximum age for new to fleet	Maximum age for existing vehicles
Bolton	NIL	15	NIL	NIL
Bury	7	15	5 (7 for WAVs)	10 (15 for WAVs)
Manchester	NIL	15	NIL	10 (15 for WAVs)
Oldham	NIL	10 (15 for WAVs)	NIL	10 (15 for WAVs)
Rochdale	NIL	NIL	NIL	NIL
Salford	7	15	5 (7 for WAVs)	10 (15 if WAVs)
Stockport	5 (7 for WAVs)	10 (15 for WAVs)	5 (7 for WAVs)	10 (15 for WAVs)
Tameside	7	15	5 (7 for WAVs)	12 (15 for WAVs)
Trafford	7	15	5 (7 for WAVs)	10 (15 for WAVs)
Wigan	NIL	15	NIL	10 (15 for WAVs)

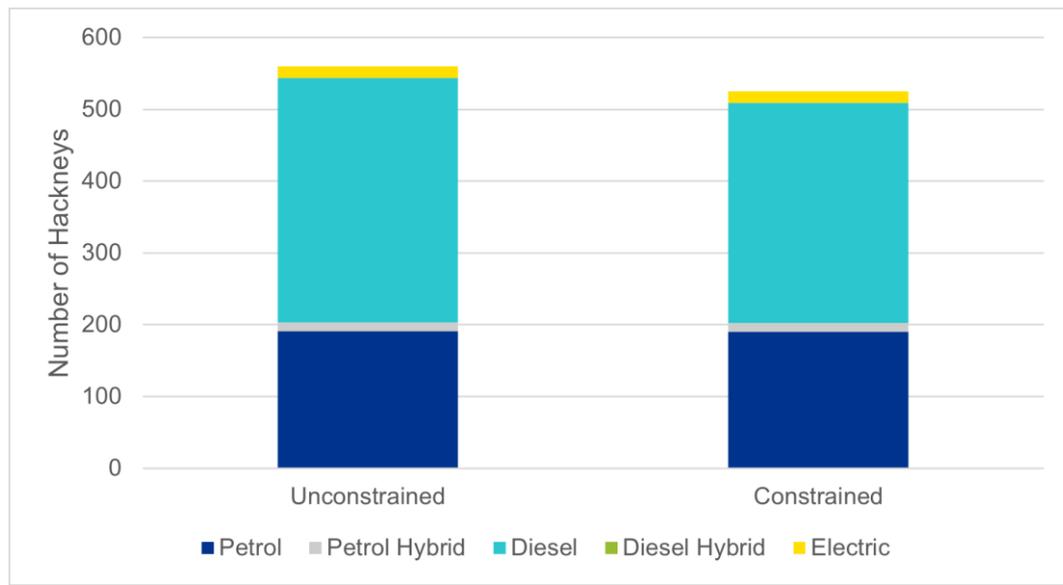
Source: GM Authorities

4.2 Vehicle Availability – Hackney Carriages

- 4.2.1 **Figure 4-1** shows the total number of available second-hand compliant Hackney Carriages for replacement purchase in November 2023. Whilst this analysis only covers the most popular vehicles, it does provide an indication of the scale of capacity available within the market.
- 4.2.2 The results show that there are a limited number of second-hand vehicles and the number of eligible Hackney Carriage owners exceeds the available supply. This means that some vehicle owners will be required to purchase more expensive, new vehicles. Whilst some vehicle owners will prefer to purchase new vehicles, there is a risk that there is insufficient supply in the market to meet demand from the GM Authorities' existing emission standards.

- 4.2.3 There is limited variance (6%) between the constrained and unconstrained vehicle supply for Hackney Carriages, meaning that there are a limited number of available second-hand vehicles that would be non-compliant with local authority age policies.
- 4.2.4 The split of fuel type is approximately one third petrol to two thirds diesel, with only 16 vehicles identified as electric.

Figure 4-1: Second-hand Hackney Carriage availability by fuel type

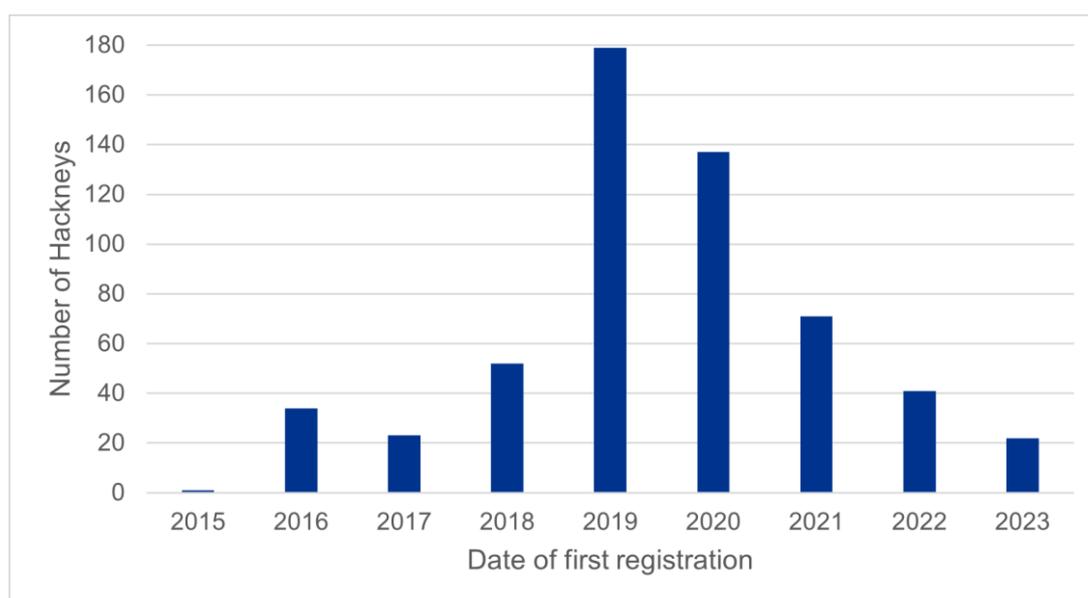


Source: Autotrader, November 2023

- 4.2.5 As shown in **Figure 4-2**, the majority of the vehicles' date of first registration identified are from 2019 or 2020, comprising 32% and 24% of the total respectively. This is likely to be an attractive opportunity for those seeking to purchase a second-hand vehicle as vehicles that have been operated as a taxi are likely to have accumulated a higher mileage than the average car.

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Figure 4-2: Second-hand Hackney Carriage availability by date of first registration

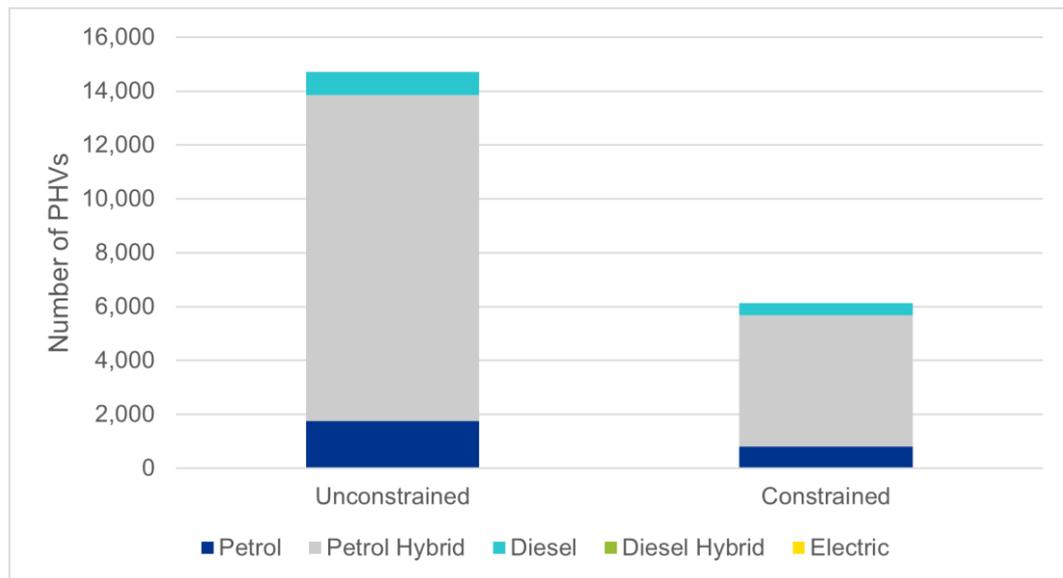


Source: Autotrader, November 2023

4.3 Vehicle Availability – PHV

- 4.3.1 Compared to Hackney Carriages, there is a significantly greater supply of compliant second-hand PHVs available to purchase.
- 4.3.2 Implementation of GM Authority age policies have a material impact on the number of second-hand PHVs available for purchase that would also be compliant with emission standards (based on the most stringent age policies), reducing by 58% from the 14,714 vehicles identified.
- 4.3.3 The most common fuel type is petrol hybrid, comprising approximately 80% of the vehicles identified. Roughly 12% of the unconstrained vehicles are fuelled by petrol.
- 4.3.4 **Figure 4-3** shows the total number of available second-hand compliant PHVs for replacement purchase in November 2023. Whilst this analysis only covers the most popular vehicles, it does provide an indication of the scale of capacity available within the market.
- 4.3.5 Compared to Hackney Carriages, the results show there is a significantly greater supply of compliant second-hand PHVs available to purchase. However, there is a large variance (58%) between the constrained and unconstrained PHV market. From review of the most popular vehicle modes, there are 8,585 PHVs which are compliant but would be deemed non-compliant under the most stringent local authority age policies. It should be noted that older vehicles are likely to be less attractive to prospective buyers due to reliability issues, fuel efficiency and other factors.
- 4.3.6 Whilst the constrained second-hand PHV market is considerably below the unconstrained market, there is available capacity within the market for PHV owners.

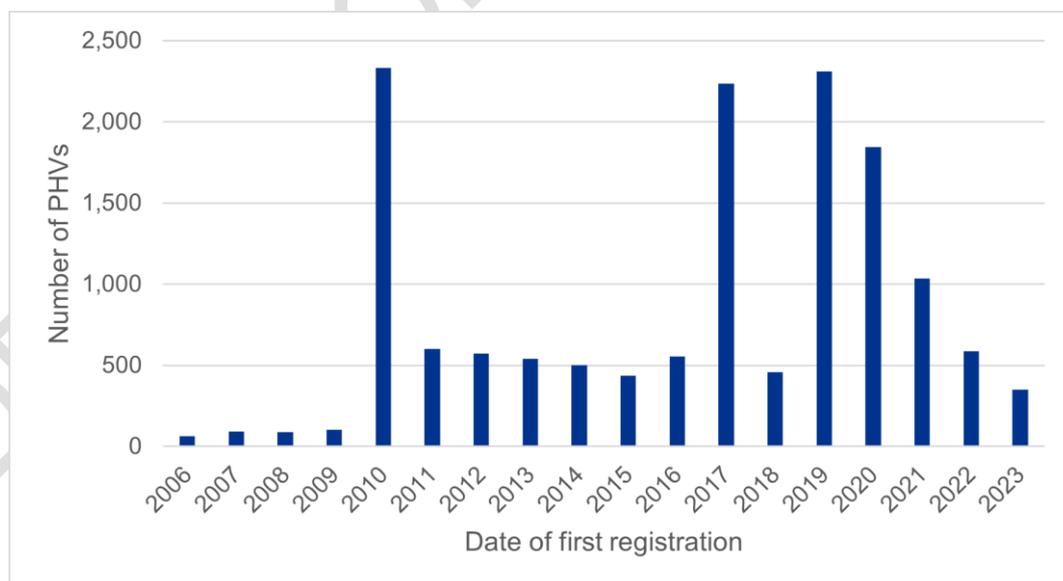
Figure 4-3: Second-hand PHV availability by fuel type



Source: Autotrader, November 2023

4.3.7 As shown in **Figure 4-4**, the majority of the vehicles' date of first registration identified are from 2010, 2017, 2019 or 2020 with each of these years contributing to around 15% of total vehicles identified. Whilst the market has a high proportion of newer vehicles, there are still large volumes of vehicles that are over 10 years old which would not comply with the more stringent local age policies.

Figure 4-4: Second-hand PHV availability by date of first registration



Source: Autotrader, November 2023

5 Owner and Operators

5.1.1 This section provides personas of the major types of Hackney Carriages and PHV operators operating within GM. The purpose of the persona is to outline the characteristics of the operator to better inform the risk and effect analysis.

5.2 Operator Personas

5.2.1 Unlike other fleet-based transport industries, the majority of Hackney Carriages and PHV drivers are self-employed (84%) and own or rent the vehicles they use¹⁰. Often drivers will work for a firm who have an established customer base and will send out jobs to the nearest available driver. As most drivers own or rent their vehicles and cover the costs of fuel, drivers prefer a vehicle with good fuel economy, but are equally restricted by the substantial initial cost of a vehicle.

5.2.2 The Hackney Carriages and PHV profession is predominantly male, with males accounting for 93% of the workforce. Over 50% of taxi drivers in England are from non-white ethnic groups. This is consistent with trends in GM as a substantial response to the GM CAP consultation was received from Asian taxi drivers. The average age of a driver is 51 years, with 21% of drivers aged under 40¹¹. As the majority of drivers are self-employed, the hours and shifts worked are flexible and often determined by the individual, with one in six drivers reporting that they work part-time. In 2021, a high proportion of drivers usually worked five days a week (46%), however it was also common for drivers to work seven days a week (23%)¹².

5.2.3 Hackney Carriages and PHV drivers operate on a 24-hour basis working in shifts, with Friday and Saturday evenings being the busiest period for custom. In 2022, the majority (42%) of Hackney Carriage or PHV trips were between 2 and 5 miles, and 24% were less than 2 miles. Comparable proportion (20%) of Hackney Carriage and PHV journeys are made between 5 and 10 miles. Fewer trips are made over longer distances, with approximately 10% of journeys between 10 and 25 miles. Due to the reduced cost efficiency of long-distance Hackney Carriages and PHV travel to the customer, only 4% of total trips are further than 25 miles¹³.

¹⁰ Taxi and Private Hire Vehicle Statistics, England: 2023 (DfT, 2023)

¹¹ Taxi and Private Hire Vehicle Statistics, England: 2023 (DfT, 2023)

¹² Taxi and Private Hire Vehicle Statistics, England: 2022 (DfT, 2022)

¹³ Trips, stages, distance and time spent travelling: NTS0308: Average number of trips and distance travelled by trip length and main mode; England, 2002 onwards (DfT, 2023)

- 5.2.4 Whilst many of the Hackney Carriages and PHVs that operate in GM are licensed from one of its boroughs, it is common for vehicles licensed in other areas to operate within the region. There are many reasons why this would be necessary, for instance if a driver from outside GM accepts a fare to travel into the region, or travels through the GM boundary to access a destination. Although PHV drivers and their vehicles have a right to roam in different licensing areas, Hackney Carriage operators may only accept a booking in the area for which they are licensed. 'Cross-border hiring' of vehicles has attracted increased attention in recent years, due to the emergence and prominence of ride-hailing and ride-sharing platforms such as Uber.
- 5.2.5 Due to the individual and flexible manner in which the taxi industry functions, operators have been categorised into three personas which broadly cover the different types of operator: Hackney Carriage, PHV and ride-sharing platforms. For the purposes of this persona description, the example of Uber has been used in reference to ride-sharing platforms. Whilst Uber vehicles are technically PHVs, they are distinguished from other traditional PHV operations by their use of a digital platform used to connect driver and customer.

5.3 Hackney Carriages

- There is a total of 7,414 Hackney Carriages registered in the NW, of which 1,945 are licensed in GM from DfT data.
- May own or lease a vehicle from an operator or other third party.
- Hackney Carriages can be hailed from the streets, collect fares from Hackney Carriages ranks or take pre-bookings.
- Rates are regulated by local council.
- Permitted to drive in bus lanes.
- More likely to be found in urban areas where Hackney Carriages ranks or passing fares are more frequent.
- Authorised vehicle types may be specified by the licensing authority. The most common Hackney Carriage vehicle used in GM is the LTI TX4.
- As a specialist vehicle, new Hackney Carriages generally cost more to purchase than a vehicle that could be used as a PHV.
- Drivers may work for Hackney Carriage companies or be self-employed.
- Some authorities require drivers to pass a test before a licence is awarded.

5.4 PHV

- There are 27,300 PHVs registered in the NW of which 13,623 are licensed in GM from DfT data. There may be additional PHVs operating in the region under 'cross-border hiring'.
- May own or lease a vehicle from an operator or other third party.
- PHV bookings must be made in advance of travel and vehicles cannot be hailed in the street or from Hackney Carriage ranks.
- Traditionally, PHV bookings are made by phone or by entering the office of a taxi company.
- GM Authorities do not have the jurisdiction to regulate PHV fares but may authorise the fares used by licensees.
- More likely to be found in urban areas but also provide a vital service to more rural areas of GM with less public transport connectivity.
- The most common PHV vehicle used in GM is the Toyota Prius.
- Drivers may work for taxi companies or be self-employed.
- Drivers may own their vehicle or rent from a taxi company or a vehicle renting company.

5.5 Uber

- Whilst technically a PHV, Uber drivers operate using an app to connect to a customer, accept a fare and receive payment.
- The platform uses a dynamic pricing model based on the supply and demand for the service at the time it is requested. 'Surge prices' are enforced during busy periods.
- Drivers are only able to use the app within the region in which they are licensed (e.g. NW, Yorkshire, Midlands); however, there may be a significant number of drivers operating from outside GM under 'cross-border hiring'.
- Compliance of vehicles operating in GM is unknown as drivers may be licensed from an external authority but is likely to be similar to PHVs Uber's vehicle requirements state that vehicle model year must be 10 years or newer.
- More likely to be found in urban areas where there is a higher density of customers to connect to.
- Drivers may own their vehicle or lease from a vehicle renting company.

6 Engagement and Research

6.1 Background

6.1.1 GM undertook targeted engagement between August and November 2022 with key stakeholders – vehicle-owning groups and other impacted individuals such as community, business, environment and equality-based groups. This was captured as part of the PPD approach. The approach sought to ensure that the GM Authorities' proposals are well-grounded in evidence in terms of the circumstances of affected groups and the possible impacts of the GM CAP on them, and therefore maximise the deliverability and effectiveness of the GM CAP.

6.1.2 GM gathered engagement and research intelligence from key stakeholders via the following three methods:

- **Stakeholder Engagement Sessions:** GM undertook targeted engagement between August and November 2022 with key stakeholders. This engagement was targeted at key representative stakeholders to obtain their input and feedback as part of evidence gathering to inform the proposed policy measures. These stakeholders included vehicle-owning groups and representatives of other impacted individuals, such as community, business, environment, health and equality-based groups. The targeted nature of this initial engagement ensured that the policy measures have been designed in collaboration and informed by feedback from representatives of those affected by the scheme, recognising that public consultation on the Investment-led Plan will follow.
- **Online Survey:** An online survey was launched for businesses and organisations including taxis. The details and survey links were promoted through a variety of contacts and networks. In addition, the survey aimed at the Hackney Carriage and PHV trade was shared by GM Licensing Managers to their licensed trade. The survey ran concurrently with engagement activity, from Monday 5th September – Monday 10th October, receiving 1,141 responses across all businesses and organisations. 79% of responses (n = 904) were from taxi owners and operators.
- **In-depth interviews:** The research work also included a series of in-depth interviews with vehicle-owning groups. These ran concurrently with the online survey, between Monday 5th September – Monday 10th October. In-depth interviews took place with owners and financial decision makers of each of the three types of vehicles. All respondents were required to own at least one non-compliant vehicle.

6.2 Summary of engagement and research

6.2.1 Upon receiving stakeholder feedback and research insights, common issue themes were considered for integration into the Investment-led Plan. A summary of issue themes relevant for Hackney Carriages and PHVs has been extracted and provided below. This has been used to inform the Investment-led Plan.

Issue Theme: Affordability of compliant vehicles, including the impact of the pandemic on credit ratings

6.2.2 Both vehicle and non-vehicle groups expressed concerns about the affordability of compliant vehicles. Operators of Hackney Carriages and PHVs commented that purchasing a vehicle is becoming increasingly expensive, with the supply shortages of new vehicles making second-hand market prices increase considerably.

6.2.3 A number of trade representatives from the Hackney Carriage and PHV sectors, as well as business representative organisations, reported that the adverse financial impacts of the pandemic are still being felt and posed a risk to their ability to invest in upgrading their vehicle, even with the offer of funding.

6.2.4 Participants in the in-depth interviews with the taxi trade felt that trading conditions in the past 12 months had been difficult. The taxi industry raised the issue of rising costs of living and fuel costs, with many feeling they are still recovering from the impact of the pandemic on their business and livelihood.

6.2.5 Feedback from the survey evidenced that a significant proportion (50%) of Hackney Carriage and PHV drivers said they were making fewer bookings each day compared to before the pandemic.

Issue Theme: Funding amounts to be offered to upgrade

6.2.6 Vehicle and non-vehicle owning groups commented that the amount of funding offered per vehicle should be reviewed due to the rising costs of compliant vehicles.

6.2.7 Some Hackney Carriage trade representatives stated that the funding amount should be a percentage of the vehicle price rather than a set amount.

6.2.8 Business Representative Organisations (BROs) stated that inflation must be considered and that there should be an awareness that businesses may experience higher price rises than the Bank of England inflation rate would suggest. BROs raised concerns about not allocating enough funding to each vehicle type, as this risks the GM CAP becoming unsuccessful.

6.2.9 Generally, all respondents supported the idea of funding but felt that the funding offered in the Clean Taxi Fund was not high enough. Most felt that the previous funding amounts agreed for the Previous GM CAP were low and would not attract many drivers to upgrade sooner than they feel is necessary, particularly if applicants were looking to purchase a new vehicle as opposed to a used one. Nevertheless, the majority (82% for Hackney Carriages and 74% for PHVs) of those who responded to the survey indicated that if funding became available under the Investment-led Plan, they would apply.

Issue Theme: Number of vehicles that can be upgraded through funding – Coach, Hackney Carriage & PHVs

6.2.10 Hackney Carriage and PHV trade representatives raised concerns that capping funds to five vehicles (as proposed under the Previous GM CAP) would damage the effort to upgrade vehicles, as well as limit larger operators in upgrading vehicles. These trade representatives expressed a belief that funding should be based on the number of non-compliant vehicles operating in GM.

6.2.11 PHV trade representatives also raised concerns that funding should help individuals to upgrade, not large fleet operators, given the pandemic has had a huge financial impact on individuals. Participants from the depth interviews had mixed views about the cap of funding for up to five vehicles per business. Some respondents felt it would be unfair to those with larger fleets, whereas others felt that there needed to be a cap to ensure the funding was fair, distributed evenly and not taken by only larger businesses.

Issue Theme: Taxi Funding using Previous GM CAP policy principles to support GM's smallest businesses

6.2.12 The PHV trade representatives stated that funding should be targeted to help individuals to upgrade, rather than large fleet operators, which is in line with the use of the existing CAP.

6.2.13 Comments from participants from the depth interviews echoed that they felt funding should be targeted at drivers rather than businesses as individuals are more likely to need more financial support.

Issue Theme: Hackney Carriage & Private Hire Licensing

6.2.14 During the research and engagement with the Hackney Carriage and PHV trade, participants were informed of GM's ambition to request new regulatory powers from DfT to restrict out-of-area operation by PHV licensed by local authorities outside of GM. Such an approach would ensure greater consistency in standards such as safety and emissions.

- 6.2.15 Representatives of the trade welcomed this approach whilst suggesting that if approved, GM would have to ensure that a significant transition period be put in place, so as not to disrupt the availability of licensed drivers in the city-region. In addition, queries were raised over why GM could not become one licensing district to bring about consistency across the 10 GM Authorities' licensing standards.
- 6.2.16 Some in-depth interview participants suggested that taxi licensing standards need to be consistent across all of the 10 GM Authorities.

Issue Theme: EVs and EV infrastructure

- 6.2.17 Some participants, largely from the taxi trade, gave feedback on EVs and the current provision and plans for EV Charging Infrastructure (EVCI) in GM, with taxi drivers largely suggesting that neither are currently adequate to reliably support significant transition to EV. There was a general perception that there are not enough charging points, that those charging points are not the right type or high quality, and that the cost of using these charging points is not economical. Some taxi drivers pointed out that the time they would spend charging the vehicle would be time without accepting bookings, and that this contributed to EVs being considered poor value for money for this sector.

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7 Summary

7.1 Registered Hackney Carriages and PHVs

- 7.1.1 The analysis has shown that in total there are 13,623 registered Hackney Carriages and PHVs in GM, representing 39% of the NW market and 5% of the fleet in England. Of the GM fleets, Manchester has the largest fleet for Hackney Carriages and PHVs with 57% and 24% respectively, whilst Bury has the smallest Hackney Carriage fleet in GM with 2% and Tameside has the smallest PHV fleet with 5%.
- 7.1.2 With regard to the most common vehicle make and model, the LTI TX4 is used the most for Hackney Carriages and represents 40% of the GM fleet, whilst the Mercedes Vito is the second most common model, representing 25% of the fleet. For PHVs, the Toyota Prius is the most common vehicle model and accounts for 20% of the GM fleet, followed by the Skoda Octavia and Toyota Auris.
- 7.1.3 The majority of Hackney Carriages and PHVs use diesel engines with 1,666 Hackney Carriages, or 88% of the GM fleet, using diesel, compared to 6,129 PHVs, or 51% of the GM fleet.
- 7.1.4 The most common production year for Hackney Carriage vehicles is 2011 (n = 209), accounting for 11% of the total GM fleet. The most common production year for PHVs is 2018 (n = 1,369) which represents 11% of the GM fleet. Another finding was that 62% of Hackney Carriages and 20% of PHVs are considered non-compliant by Euro Standards. Despite the low proportion of non-compliant PHVs, there are higher volumes of PHVs operating in GM so the number of non-compliant PHVs (n = 2,352) exceeds Hackney Carriages (n = 1,183).
- 7.1.5 Stockport and Bolton had the highest proportions of Hackney Carriages that are unlikely to comply with Euro Standards. 78% of Stockport's fleet dates back to pre-2013 whilst 89% of Bolton's fleet was registered before 2015. Proportionally, Salford has the newest fleet with 63% of Hackney Carriages manufactured from 2015 onwards.
- 7.1.6 Bolton and Rochdale have two of the oldest PHV fleets in GM, with 12% of Bolton's fleet and 15% of Rochdale's fleet manufactured in 2010. Like the taxi fleet, Salford has the newest PHV fleet in GM, as evidenced by 84% of the fleet having been manufactured post 2015.

7.2 Purchasing and retrofitting

- 7.2.1 In a general review via a desktop search, the following assumptions were found:
- For new purchases that would comply with Euro Standards, drivers and operators could expect to pay from £34,595 to £67,189 for Hackney Carriages and from £24,900 to £45,315 for PHVs.

- Second-hand compliant Hackney Carriages, using the Mercedes Vito as an example, would cost drivers and operators between £15,500 and £43,000 if manufactured between 2015-2019, and between £18,500 and £69,995 if manufactured between 2018-2022.
- Second-hand compliant PHVs, using the Skoda Octavia as an example, would cost drivers and operators between £5,500 and £32,100 for diesel vehicles manufactured between 2015-2019, or between £1,500 and £32,700 for petrol vehicles manufactured between 2005-2019. For vehicles manufactured between 2018-2022, diesel Octavias would cost between £6,499 and £38,175, compared to petrol Octavias costing between £4,690 and £36,950.

7.3 Vehicle Availability

7.3.1 Concerns over vehicle availability have arisen within the taxi industry, as demonstrated in feedback received during the PPD approach undertaken by GM in 2022 and accompanying information received from local authority taxi licensing managers. However, the vehicle availability of Hackney Carriages and PHVs differs significantly.

7.3.2 Whilst second-hand compliant Hackney Carriage vehicles are likely to be fully compliant with even the most stringent local authority vehicle age policies, there is insufficient supply to meet demand from the GM Hackney Carriage population to upgrade via a second-hand vehicle only. It should be noted that the figures applied in this research only take account of the most popular vehicle types and it is likely to underrepresent the supply within the market. Therefore, the restrictions in the second-hand market will result in forcing some vehicle owners to purchase new vehicles.

7.3.3 There is a sufficient volume of second-hand compliant PHVs in the market for owners to upgrade their vehicles. However, the age of the available PHV stock varies significantly with a large volume of vehicles aged over ten years old and still available to purchase. These vehicles would not be compliant with most GM Authorities and therefore are not considered a viable upgrade option. Considering the vehicle age limiting factor, there is still a sufficient supply of PHVs for vehicle owners to access.

7.4 Owners and Operators

7.4.1 Informed by desktop research and previous studies, three typical market segments were found across the market sector. These include:

- Hackney Carriage Drivers: Self-employed, often driving Hackney Carriage-style vehicles that are able to pick up passengers without a booking. This can be from anywhere, although most frequently from taxi ranks at busy locations such as train stations or the airport.

- PHV drivers: Working for a taxi operator, who provides the means for taking bookings via in-car technology in return for a fee (e.g. monthly). Passengers can only be carried if a booking is made in advance.
- Uber-style driver: Quasi-self-employed, driver takes bookings via an app and pays a percentage to the operator.

7.5 Engagement and Research

- 7.5.1 GM has continued to progress with policy development work for the Investment-led Plan. The primary focus of the Case for a new GM Clean Air Plan¹⁴ is to identify a plan to reduce NO₂ concentrations to below legal limits in the shortest possible time and by 2026 at the latest whilst considering the current cost of living crisis and associated economic challenges faced by businesses including Hackney and PHV operators. The ability for the engagement and research process to inform policy has not concluded and the iterative process will continue through the next round of engagement, which will be conducted as part of a public consultation exercise.
- 7.5.2 The key findings from the engagement and research process have informed the development of the GM CAP. The level of funding proposed by vehicle type (as set out in the Appraisal Report) and the funding upgrade options by grant or vehicle finance has been informed by the research and engagement, in addition to evidence relating to inflation and the cost to upgrade new and second-hand vehicles. This recognises that the previous funding amounts would not be sufficient to achieve upgrades at the level required to meet compliance in the shortest possible time and by 2026 at the latest. The engagement and research process has supported the proposal for more funding per vehicle and the need for a more targeted approach.

¹⁴ https://assets.ctfassets.net/tlpqbyv1k6h2/7jtkDc5AODypDQlw0cYwsl/67091a85f26e7c503a19ec7aeb2e8137/Appendix_1_-_Case_for_a_new_Greater_Manchester_Clean_Air_Plan.pdf