Bee Network Committee

Date: Thursday 26th September 2024

Subject: Electromobility: Zero Emission Travel

Report of: Martin Lax, Transport Strategy Director, TfGM

Purpose of Report

This report provides an overview of the current situation relating to Electromobility in Greater Manchester.

Recommendations:

The Committee is requested to:

1. Note the current progress relating to electromobility in the GM region;
2. Note that forecast growth and demand for charging infrastructure will be used to inform the emerging Local Transport Plan;
3. Endorse the introduction of an indicator which will track GM's progress in facilitating charging for households without off-street parking;
4. Endorse the introduction of a zero-emission journey tracker; and
5. Note the update on the Electric Vehicle Infrastructure programmes of work.

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Equalities Impact, Carbon and Sustainability Assessment:

Recommendation - Key points for decision-makers

This report details a number of ways in which Greater Manchester is working towards decarbonising the transport system. It includes a number of ways in which this progress can be tracked.

Impacts Questionnaire

Impact Indicator	Result	Justification/Mitigation
Equality and Inclusion		
Health		
Resilience and Adaptation	G	Ensuring the future transport network assists in meeting carbon obligations
Housing		
Economy	G	
Mobility and Connectivity	G	Ensuring the future transport network assists in meeting carbon obligations
Carbon, Nature and Environment	G	Enabling transition to zero emission carbon
Consumption and Production		
Contribution to achieving the GM Carbon Neutral 2038 target		Tracking progress of carbon neutrality in transport will provide substantial benefits. Plans for charging infrastructure will provide significant carbon benefits
Further Assessment(s):		N/A

G	**Positive impacts overall, whether long or short term.**	A	**Mix of positive and negative impacts. Trade-offs to consider.**	R	**Mostly negative, with at least one positive aspect. Trade-offs to consider.**	RR	**Negative impacts overall.**

Risk Management

Local Electric Vehicle Infrastructure (LEVI) fund is a significant programme of activity to significantly increase the deployment of local, primarily low power, on-street charging infrastructure within GM. Ensuring Local Authorities have resource to aid with this programme will mitigate delivery challenges. There are currently legal issues relating to the procurement approach that authorities can use, these are being discussed with Office for Zero Emission Vehicles.

Legal Considerations

In addition to the procurement issue referenced above, there are legal considerations relating to the underpinning MoUs (between TfGM and LAs) and commercial arrangements (between the LAs and CPO). Localised permissions and consents including planning agreements, leases and/or licences with regard to land, street works licences and host agreements will be progressed and managed by the relevant LA(s).

Financial Consequences – Revenue

Commercial arrangements to be agreed with charge point operators.

Financial Consequences – Capital

90% of Local Electric Vehicle Infrastructure Fund (LEVI) received . 10% held by OZEV pending agreement of procurement submission. Proposals for LA's CRSTS allocations to LAs need finalisation.

Number of attachments to the report: None

Comments/recommendations from Overview & Scrutiny Committee

N/A

Background Papers

GMCA March 2022, Item 24 Electric Vehicle Charging Tariff

GMCA March 2023 Item 28b Electric Vehicle Charging Infrastructure

BNC March 2024, Item 8, Capital Programme

Tracking/ Process

Does this report relate to a major strategic decision, as set out in the GMCA Constitution?

No

Exemption from call in

Are there any aspects in this report which means it should be considered to be exempt from call in by the relevant Scrutiny Committee on the grounds of urgency?

N/A

Overview and Scrutiny Committee

N/A

1. Introduction

1.1. Electromobility (sometimes referred to as Electric Travel or E-Mobility) is an umbrella term covering the use of electric cars, and other modes of transport such as electric buses. The common feature of all of them is that they are driven electrically, have a means of storing energy on board, and obtain their energy mainly from the power grid.

1.2. Greater Manchester has set an ambitious target to become carbon neutral by 2038, which is 12 years ahead of the national net zero goal in 2050. To achieve this, the region needs to drastically reduce its greenhouse gas emissions from various sectors, including transport, which accounts for 30% of the total emissions in Greater Manchester. An increase of Electromobility, alongside a reduction in private car use, is important to Greater Manchester's ability to reduce transport emissions.

1.3. One of the key strategies to decarbonise transport is to promote the switch to electric vehicles (EVs) and the deployment of electric charge points (ECPs) across the region. EVs have the potential to reduce air pollution, improve public health, and lower fuel costs for drivers. Electric charge points (ECPs) are essential to support the growth of EVs and to ensure that drivers have convenient and reliable access to charging facilities.

1.4. Achieving zero emission journeys for all modes of transport is a challenging goal for Greater Manchester, as it aims to become carbon neutral by 2038. However, this cannot be done by local government alone. It requires a concerted effort from national government, businesses, communities and individuals to make the transition to cleaner and greener travel options.

1.5. This report provides an overview of:

- Growth and forecast demand of Electric Vehicles and Charging Infrastructure
- Progress to electrification across taxi, bus, rail, e-cargo bikes, cycle hire and scooter
- Update on EV programmes including the Local Electric Vehicle Infrastructure (LEVI) fund, and issues relating to charge point siting.
- A proposal to monitor the transition to zero emission journeys in the region, through the adoption on a Zero Emission Journey Tracker and a tracker to monitor progress towards facilitating charging infrastructure in residential areas without any, or any significant amount of, off-street parking.

2. Growth and Forecasting Demand

EV Trends and Forecasting

2.1. Within the Greater Manchester EVCI strategy, published in 2021 and when the 2030 target on phasing out new petrol and diesel engines was still in place, there is commentary on the level of EVCI charging needed. It states "*The development of the EVCI strategy needed a planning scenario to allow a plan of interventions to be developed, and this in turn needs an input level of transition to electric vehicles to aim for. National Grid's 2019 Future Energy Scenarios (FES) set out four main scenarios for EV transition. The scenario with the fastest uptake in the near-term projects that 8.18% of vehicles will be electric in 2025, rising to 75% by 2035. Using the FES 2019 scenario of 8.18% of the whole UK vehicle fleet being EVs in 2025, this projection gives a planning scenario with charger requirements of 2,700 fast, and 300 rapid public chargers in GM by 2025.*"

2.2. Transport for the North (TfN) launched the TfN EV Visualisation tool in October 2022. This is a mapping tool which outlines the scale and pace of change required across our regions to support a rapid and inclusive transition to electric vehicles. The TfN tool can be used to reforecast the levels of EV infrastructure that is needed within the 10 Greater Manchester Local Authorities.

2.3. Department for Transport datasets have been used to plot growth between 2015 and 2023. The TfN forecasting tool has been used to forecast growth of EV cars and the anticipated required amount of charging.

Electric Vehicle Uptake

- Where we are: In 2015, there were 752 electric cars registered in Greater Manchester and by 2019 this had increased to 2,000 cars. By the end of 2023, EV ownership increased to around 18,000[1] and are now circa 1.5% of the total GM vehicle fleet.
- GM Travel Diary Surveys (TRADS) 2023 survey estimated that 3% of the distance driven in a car/van by GM residents was in an EV.

[1] In Q2 2020 a national leasing company began registering vehicles to a postcode in the Stockport Council area. From this date, Stockport's figures have been excluded from these figures.

- Where we need to be: TfN's Decarbonisation tool shows that across the North, a minimum of 51% of the vehicle fleet will need to be battery electric in 2035 to support their decarbonisation trajectory.

EV Charging

2.4. The vast majority of the publicly available charging infrastructure in Greater Manchester is owned and operated by the private sector.

- Where we are: In 2019, there were around 450 publicly available chargers across Greater Manchester, providing circa 900 connection points. As of June 2024, this figure increased by circa 300% to 1,325 chargers (260 ultra, 284 rapids, 302 fast, 479 slow). This provides around 2,200 public connection points[2]. ENW also advise that there are circa 11,500 home chargers in April 2024.

- The 2021 GM EV strategy provided a planning scenario with charger requirements of 2,700 fast and 300 rapid public chargers in GM by 2025.

- Where we need to be: The stated TfN EVCI visualisation tool requirement is over 23,000 public chargepoint connections in Greater Manchester by 2035. This is a 10 fold increase over the next decade. The Greater Manchester Local Area Energy Plan states that EV ownership is projected to significantly outstrip the number of homes with off-street parking.

2.5. The forthcoming Greater Manchester Local Transport Plan, currently in development, will set out GM's future ambition for EVCI, taking account of stakeholder and public engagement and the emerging priorities of the new government[3].

2.6. The table at Appendix 1 sets out the number of publicly available charging points in GM, the numbers of home chargers, and Electric Vehicles within private keepership and that are company registered by Authority.

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[2] Zap Map data acquired by TfN

[3]The Labour Manifesto of June 2024 stated, "Labour will support the transition to electric vehicles by accelerating the roll out of charge points, giving certainty to manufacturers by restoring the phase-out date of 2030 for new cars with internal combustion engines, and supporting buyers of second-hand electric cars by standardising the information supplied on the condition of batteries."

3. Progress Across Other Modes

Taxi

3.1. Taxis play a crucial role in Greater Manchester's transport offer. They provide people with the flexibility of door-to-door transport on-demand, without needing to use or own their own vehicle. Given that over a quarter of households in Greater Manchester do not have access to a car of their own, taxis provide vital options for journeys that the public transport network cannot fulfil, for example for those with a disability or for out-of-hours journeys. They support our visitor and night-time economy for safe door-to-door travel. The Greater Manchester Travel Diary Surveys[4] (TRADS) shows that in 2023 GM residents made c.100,000 trips per day (c.37m trips per year) by taxi.

3.2. GM's vision for taxis is for them to offer safe and high-quality services which integrate with the wider transport network, providing greater public confidence in this important mode of travel.

3.3. In the 2017 LTP, the stated long-term aim is to "achieve more consistency across the conurbation, in order to provide a better, more integrated service to the customer and to ensure that taxis entering the Regional Centre and main town centres meet the highest environmental standards."

3.4. By switching to electric vehicles, taxis can contribute to the region's goal of achieving carbon neutrality by 2038, and improve the air quality. The table below sets out the number of zero emission private hire and Hackney vehicles currently licensed by a Greater Manchester Authority as of August 2024.

Table: PHV/Hackney Electrics by LA

	PHV Electric	Hackney Electric	Total	Total Number of Licensed Vehicles	% of Licensed Vehicles that are EVs
Bolton	8	0	8	1544	0.52%
Bury	5	1	6	747	0.8%
Manchester	39	26	65	4,002	1.62%
Oldham	13	1	14	1,607	0.87%
Rochdale	6	0	6	1,701	0.35%
Salford	13	0	13	968	1.34%
Stockport	16	0	16	1,023	1.56%
Tameside	10	8	18	781	2.3%
Trafford	11	0	11	1,005	1.09%
Wigan	21	3	24	977	2.46%

[4] Greater Manchester Travel Diary Surveys | Bee Network | Powered by TfGM

Total	**142**	**39**	**181**	**14355**	**1.26%**

Bus

3.5. In July 2023, the GM Bus Strategy set out Greater Manchester's intention to move to a fully electrified bus fleet by 2032. The Mayor has subsequently set out an ambitious goal for this transition to be completed by 2030, supporting the city region's wider vision of carbon neutrality by 2038.

3.6. As of July 2024: There are 132 ZEBs operating in Greater Manchester. This includes 100 Bee Network buses acquired using City Region Sustainable Transport Settlements (CRSTS) funding – 50 operating from Bolton depot, and 50 from Oldham depot; And 32 ZEBs currently operated by Stagecoach from Sharston depot, Wythenshawe, which will join the Bee Network from January 2025.

3.7. By the end of 2025, further ZEBs are due to come into operation in Greater Manchester taking the total electric fleet to approx. 25%.

3.8. In terms of bus depot electrification, TfGM have delivered a major programme of works over the past 12 months, including the electrification of Bolton and Oldham depots; and work will shortly be commencing on the electrification of another 4 depots at Middleton, Hyde Road, Ashton and Queens Road, as well as charging units on Piccadilly Approach as well adding more charging units to Bolton depot. Stockport and TfGM officers continue to work closely to deliver a new Zero Emission Bus fleet depot in Stockport.

3.9. TfGM is currently developing a fleet and depot strategy which will provide a roadmap for the electrification (including supporting infrastructure) of the remainder of the GM bus fleet. An update on this work will be brought to the Committee later this year.

Rail

3.10. Since the early 2010’s there has been a series of projects to electrify rail lines in Greater Manchester the progress and plans of electrifying various rail lines in Greater Manchester, which allows the conversion of diesel traction to electric.

3.11. The government's deadline of 2040 for the use of diesel only trains, and the expectation that new train fleets will use alternative technologies such as battery or hydrogen, or have bi-mode capability to operate on non-electrified lines, will help the journey to zero emission travel.

3.12. Rail Operators have plans for the replacement of the old diesel trains used on local services, and both Northern and TransPennine Express are looking for new bi-mode trains. Some freight operators are introducing bi-mode and tri-mode locomotives, but the lack of full electrification is a barrier to faster adoption of sustainable traction.

3.13. More detail is set out at Appendix 2.

E Scooters, E-Bikes and E-Cargo Bikes

3.14. E-bikes, scooters and e-cargo bikes are important for the last mile for decarbonisation because they offer a low-carbon, low-cost, and convenient way to complete short trips. e-bikes and scooters can reduce greenhouse gas emissions, air pollution, and traffic congestion by replacing car trips or complementing public transport. They can also improve the accessibility and connectivity of public transport by expanding the catchment area and reducing the walking time to and from the stations. e-bikes and scooters can enhance the mobility and quality of life of urban residents by providing more options and flexibility for their daily travel.

3.15. E-cargo bikes are electrically assisted bicycles that can carry heavy loads of goods. They offer a low-carbon, low-cost, and convenient way to complete the last mile deliveries, e-cargo bikes can improve the efficiency and sustainability of urban logistics, and enhance the quality of life for city dwellers.

3.16. Both Amazon and Zedify are using e-cargo bikes for last mile deliveries within Greater Manchester. Greater Manchester was chosen for pilots of this infrastructure, in part, due to the cycling infrastructure meeting the requirements of e-cargo bikes.

3.17. To support a ‘green’ restart of local travel and help mitigate reduced public transport capacity, in July 2020, the Department for Transport (DfT) made regulations allowing trials of rental e-scooters to be fast tracked and expanded.

3.18. As a result, a trial in Salford has been developed and continues to run with the operator Lime – the latest trial extension has given a license for local authorities to continue until May 2026, when legislation is expected on the legality of this mode.

3.19. Whilst this is still in a trial phase, as of July 2024, there have been 1.2m trips on E-Scooters (as part of the Lime E-Scooter Scheme in Salford), with usage currently averaging 1,745 trips per day and 2.3 trips per vehicle per day (July 2024). Trip numbers have benefitted recently due to an increased vehicle fleet (was 550 now

800 vehicles) and an expanded trial area, which has been agreed by Salford City Council and the Department for Transport, to expand the scheme into Eccles and Patricroft. This also connects the scheme with Rail and Metrolink infrastructure.

3.20. It is estimated that approximately 1 in 4 e-scooter trips replace a car trip (either private or taxi). This contributes to a reduction in personal car use and allows for short trips to be taken via e-scooter. Around 55% of e-scooter users in Salford have stated they have used or would use e-scooters to connect with public transport.

3.21. The current Starling Bank Bike Hire scheme has 20% eBikes (~300) and these outperform standard bikes as they are ridden at least twice as often. In May 2024 there were 2.71 rides per eBike per day and 1.26 rides per standard bike per day.

3.22. There is also evidence to support eBikes enabling access to destinations that are further afield. Starling Bank eBike rides tend to be longer in duration and distance than standard bike rides. In May 2024 the average eBike ride was 17 minutes vs 15 minutes on a standard bike (or 3 kms on an eBike vs 2.5kms on a standard bike).

Commercial Vehicles

3.23. Electric vans, in particular, are increasingly attractive as their price relative to conventionally fuelled vehicles reduces; range increases; and lifecycle costs become more certain. Sales of electric vans are increasing, albeit from a low base and a lower market share than electric cars. At end December 2023, DfT data shows that there were circa 700 electric vans registered in Greater Manchester[5]. Public sector fleet transition is an on-going 'early mover' which can demonstrate benefits to the commercial fleet.

3.24. In terms of Heavy Goods Vehicles, there are a number of pilots the UK underway to demonstrate that electric HGV transportation is commercially viable. In line with Government regulation all new HGVs sold in the UK are required to be zero emission by 2040. Fuel cell technology, where hydrogen and oxygen are combined through an electrochemical reaction to generate electricity is an area of development.

[5] In Q2 2020 a national leasing company began registering vehicles to a postcode in the Stockport Council area. From this date, Stockport's figures have been excluded from these figures.

Metrolink

3.25. Metrolink is the largest light rail network in the UK and runs on 100% renewable electricity, and does not produce any tailpipe emissions.

Power Purchase Agreement

3.26. In anticipation of an increase in electricity demand for public transport, TfGM are progressing work on the procurement of a Power Purchase Agreement (PPA). A PPA is a contract between a buyer and a seller of electricity, which will be from incremental renewable sources to the national grid. The buyer agrees to pay a fixed price for a certain amount of electricity over a specified period of time, while the seller guarantees to deliver the electricity from a specific renewables project.

3.27. PPAs provide a stable and predictable cash flow allowing investors them to raise the necessary capital to fund investment in renewable energy sources; and to protect buyers from the significant 'spikes' that have occurred in energy prices in recent years

3.28. PPAs also enable buyers to reduce their greenhouse gas emissions and meet their sustainability targets by sourcing clean energy at a competitive price.

3.29. An initial PPA for Metrolink's electricity consumption, would act as a pathfinder, enabling future PPAs to address future demand growth from an electrified bus fleet and to encompass other organisations within GM.

3.30. It is anticipated that the Pathfinder PPA will be concluded in 2025 with energisation of the renewable power facility anticipated to be in 2027 / 2028, subject to the final agreement. An update will be provided to the Committee as the procurement progresses.

4. Updates on EV Programmes

4.1. The delivery and operation of Greater Manchester's publicly funded Electric Vehicle Charging Infrastructure (EVCI) has been co-ordinated by Transport for Greater Manchester (TfGM) since 2013 to ensure a consistent and co-ordinated approach across the city region.

4.2. TfGM and its local authority partners have launched various policies and initiatives to support the switch to EVs and ECPs in the region.

Dedicated Taxi Electric Vehicle Charging Instructure

4.3. The Taxi EV project includes the rollout of 60 rapid charging points across Greater Manchester dedicated for EV private hire (PHV) and hackney vehicles licensed by a Greater Manchester Authority.

4.4. 57 charging points are now live, with the remaining chargers due to go live by end of 2024.

Early Measures – EV Awareness and Infrastructure

4.5. Since the Joint Air Quality Unit Early Measures funding was awarded in March 2018 TfGM has delivered 23 out of the 25 rapid publicly accessible charging points, final sites will be live by mid-September 2024.

4.6. Additionally, through the Early Measures project TfGM have delivered 18 promotional events for business and the general public, an Electric Travel website Home | TfGM Electric Travel. TfGM have also directly engaged with over 50 businesses and Local Authorities in the Greater Manchester area around various Electric Vehicle opportunities, including fleet; and providing charging points to improve their commitment to electric vehicles.

Local Electric Vehicle Infrastructure (LEVI) fund

4.7. LEVI funding is designed by Office for Zero Emission Vehicles (OZEV) to move away from previous funding models of an owner-operator model, into that of a more commercial arrangement. This strategic direction links closely with the recommendations noted by the GMCA in March 2023.

4.8. The stated aims of OZEV's LEVI fund are to:

- Deliver a step-change in the deployment of local, primarily low power, on-street charging infrastructure across England; and to
- Accelerate the commercialisation of, and investment in, the local charging infrastructure sector.

4.9. The Capital element of GM's LEVI allocation has been confirmed as £16,158,000.

4.10. To meet OZEV's requirements for collaboration in delivery TfGM are responsible for managing the procurement and delivery of the programme, and the local authorities will be responsible for managing the operations and maintenance (with the Charge Point Operator) once the charging points are operational.

4.11. GM's initial submission to OZEV outlined GM's intention to install between 3,300 and 4,500 charging points across Greater Manchester.

4.12. TfGM are managing the procurement and delivery and Local Authorities will be responsible for managing the operations and maintenance (with the Charge Point Operator) once operational. Following GMs initial submission the preferred procurement route was stayed pending guidance being received from HMG regarding its lawfulness. GM is with other LAs exploring alternative options including running its own procurement exercise. TfGM anticipates that this programme of work will result in the installation of chargers in 2026.

4.13. The LEVI funding allocation for each authority will not be based on a predetermined formula, as this would not reflect the actual costs and needs of each area. Instead, the funding will be distributed after the competitive procurement process, where the successful bidders will have to demonstrate their costs, which will include the energy distribution costs, the type and number of charging points, and the local authority infrastructure preferences. This approach will ensure that the funding is used efficiently and effectively to meet the demand and the objectives of the scheme.

4.14. The key considerations in installing infrastructure include;

- Finding suitable locations for the chargers that are accessible, convenient, and safe for EV drivers, as well as compatible with the existing electricity network, Streets for all Design Guide[6] and planning regulations.
- Individual Local Authority appetite for on-street charging (compared to off street charging, in for example, Local authority car parks)
- Local Authority interest in different types of chargers for example flush fitting chargers or pedestal chargers and the potential, and the mechanism, for charging from street lighting columns which has been implemented successfully elsewhere in the country but not, to date, in Greater Manchester.
- Securing the cooperation and consent of landowners, and other stakeholders who are involved in the installation and maintenance of the chargers.

[6] any public on-street EV charging facilities and equipment such as feeder pillars should not compromise footway width

4.15. An alternative to the installation of electric charge points are cable channels. A cable channel for a house without off street parking is installed in the pavement that allows the vehicle owner to charge their electric vehicle from their home without leaving a cable across the pavement, an offence under the Highways Act 1980 if they do not have the consent of the highway authority. The channel typically has a lid that can be opened and closed to store and access the cable when needed. The channel connects to a socket in the home and runs under the pavement to a point near the vehicle. This way, the cable does not create a trip hazard or an obstruction for pedestrians or other road users.

4.16. LEVI funding could be allocated to support the installation of these channels. However, Local Authorities, as the highway authorities, must evaluate liability and maintenance concerns prior to approving their installation. There is currently no agreement across the metropolitan area regarding the implementation of cable channels. Officers are working together to evaluate the options to come to a clear position in the New Year.

CRSTS Funding

4.17. £8.5m of CRSTS[1] funding was allocated for the roll-out of EVCI. In March 2023, GMCA endorsed a funding distribution model for CRSTS funds based on population, the proportion of rural areas in a Local Authority area (as these are often less likely to be served by the commercial market) and the level of housing stock which has neither off-street parking nor access to charging within five minutes' walk.

4.18. The Bee Network Committee, on 21 March 2024, approved the drawdown of a further £1.086m CRSTS funding, to be allocated across the 10 GM local authorities to support LA capability requirements in progressing the commercialisation and investment in on-street charging infrastructure across GM through OZEV's LEVI capital fund.

4.19. The remainder, using a formula agreed at the GMCA in March 2023, allows authorities to bring forward proposals of their own or to include their allocation in LEVI procurement.

5. Monitoring Electric Travel

5.1. Zero Emission travel is a term that refers to the use of transport modes that do not emit any greenhouse gases or air pollutants from their operation. Zero emission journeys will help to reduce the environmental impact of transport and contribute to ambition for the city region to be carbon neutral by 2038.

5.2. It is proposed that GM adopts two new indicators:

- The percentage of residential properties (without access to off-street parking) that are within 300m) of charging infrastructure. The percentage of residential properties (without access to off-street parking) that are within 300m[7] of a charging point. This allow Greater Manchester to track progress towards facilitating charging infrastructure in residential areas without a significant amount of off-street parking.

  The methodology is developed based on data provided by Transport for the North. This data employs artificial intelligence and satellite imagery to determine the number of houses without off-street parking. Using Zap Map data to monitor the number of charge points, TfGM can calculate the number of residential properties (without access to off-street parking) that are within 300m[8] of a charging point. The current baseline for Greater Manchester is 22%. To be reported quarterly.

  This Greater Manchester figure can be disaggregated by Local Authority and can be seen at Appendix 3

- A Zero Emission Journey Tracker to allow GM to monitor the progress of journeys by mode that do not emit any greenhouse gases or air pollutants from their use, which supports the ambition for the city region to be carbon neutral by 2038. This recognises that we need to see a switch to transport modes that do not emit any greenhouse gases or air pollutants from their use. The current baseline for Greater Manchester is 36%. To be reported annually.

  The table at Appendix 4 outlines the journey types the tracker will monitor along with the zero emission positions for each of them, along with the

[7] This distance is approximately 5 minutes' walk
[8] This distance is approximately 5 minutes' walk

baseline data for each journey type, such as the current percentage of zero emission journeys and the ambition for electrification.

5.3. Both these indicators will be reported as outcomes in GM’s 5 Year Environment Plan.

BEE NETWORK

Appendix 1 Publicly accessible devices, home chargers & vehicles

The table below sets out the number of publicly available charging in GM, the numbers of home chargers, and Electric Vehicles within private keepership and that are company registered by Authority.

	Charge Points								Battery Electric Vehicles[9]		
	Publicly Available Devices[10]							Home Chargers[11]	Car Private Keepership	Car Company Registered	Light Goods Vehicles
Authority	Locations	Devices	Connectors	Ultra	Rapid	Fast	Slow				
Bolton	28	71	116	8	19	27	17	1,112	1,082	662	32
Bury	34	58	117	19	14	12	13	974	866	746	43
Manchester	98	400	557	54	27	79	240	1,173	1,240	2,237	275
Oldham	48	110	190	34	31	18	27	652	741	501	32
Rochdale	28	67	140	9	25	18	15	750	802	478	67
Salford	60	141	258	10	24	53	54	820	827	567	112
Stockport	40	86	169	13	44	14	15	1,999	1,715	81,656[12]	3829[10]
Tameside	26	47	93	8	15	11	13	769	704	394	38
Trafford	54	218	347	89	49	29	51	1,895	1,644	882	47
Wigan	41	127	189	16	36	41	34	1,394	1,356	569	43
Total	457	1325	2176	260	284	302	479	11,538	10,988	88,694	4518

[9] DfT Statistics end Q4 2023
[10] Data supplied by TfN/Zap Map July 2024 data
[11] Supplied by ENW April 2024
[12] In Q2 2020 a national leasing company began registering vehicles to a postcode in the Stockport Council area.

Appendix 2 – Rail Decarbonisation

Since the early 2010's there has been a series of projects to electrify rail lines in Greater Manchester, allowing the conversion of diesel traction to electric traction. The lines which have been electrified are Manchester – Newton-le-Willows – Liverpool, Manchester – Bolton – Preston – Blackpool and Wigan – Liverpool. Ongoing projects are electrifying Wigan – Bolton and Manchester – Stalybridge, with plans to convert more services to electric traction in 2026, while the TransPennine Route Upgrade will electrify the full Manchester – Huddersfield – Leeds – York route by the early 2030's.

In addition, the Manchester Task Force are progressing designs and Business Case for the modernisation of the CLC line (Manchester – Warrington – Widnes – Liverpool), which includes electrification and there remain aspirations for further electrification of key routes, such as Hope Valley (mentioned in Network North), Calder Valley and Atherton lines.

In the meantime, the Government have set a deadline of 2040 for the use of diesel only trains, with the expectation that new train fleets will make use of alternative technology (battery or hydrogen) or have bi-mode capability to operate on the non-electrified lines. TransPennine Express currently have a fleet of 19 bi-mode (diesel / electric) trains on the North TransPennine route and one of these is currently being trialled with battery technology with a view to future replacement of the diesel engines with battery capability. Avanti West Coast are also replacing their remaining diesel trains with electric or bi-mode trains in order to eliminate operation of diesel trains under the wires on the West Coast Main Line.

The majority of diesel trains used on local services are between 30 and 40 years old and plans are underway for the replacement of these, with Northern recently issuing a Prior Indication Notice to the market. In addition, TransPennine Express have also commenced expressions of interest for new trains as part of the TransPennine Route Upgrade. It is expected that both train fleets will make use of bi-mode technology.

Rail Freight currently remains largely reliant on diesel technology, with extensive use of class 66 locomotives purchased in the early 2000's, which are considered to be mid-life. However, as thoughts turn to future replacement of these locomotives,

bi-mode and tri-mode freight locomotives are currently in development. Rail Operations Group are introducing a class 93 tri-mode (electric / diesel / battery) locomotive, with 10 on order, while GBRF have ordered 30 more powerful class 99 dual mode (electric / diesel) locomotives. While there are benefits to electric traction in terms of haulage capability and speed, the lack of full electrification on many lines, along with a lack of Government commitment for further electrification is proving a barrier to speedier adoption of sustainable traction within the rail freight sector.

Appendix 3- Percentage of Residential Properties (without access to off-street parking) that are within 300m of Charging Infrastructure

The table below show the percentage of residential properties without access to off-street parking that are within 300m of Electric Vehicle Charging Infrastructure. This distance is approximately 5 minutes' walk.

Local Authority	**% of residential properties without access to off-street parking that are within 300m of charging infrastructure**
Bolton	11%
Bury	14%
Manchester	30%
Oldham	19%
Rochdale	13%
Salford	35%
Stockport	16%
Tameside	17%
Trafford	25%
Wigan	13%
GM Total	**22%**

Appendix 4 – Zero Emission Journey Tracker

The table below outlines the journey types the tracker will monitor along with the zero emission positions for each of them, along with the baseline data for each journey type, such as the current percentage of zero emission journeys and the ambition for electrification.

Journey Type	Zero emission positions	Baseline annual trips – 2023	GM Ambition
Walking	100%	630,400,000	To connect all communities in Greater Manchester with a comprehensive walking, wheeling and cycling network of safe and attractive routes that connect people to the places they want to go to make active travel the natural choice for short journeys– see Home | TfGM Bee Active
Cycling	100%	44,500,000	
Bus	5%	83,000,000	The full electrification of Greater Manchester's bus fleets (and supporting infrastructure) by 2032, with 50% of the fleet to be zero emission by 2027 – see Greater Manchester Bus Strategy | Bee Network | Powered by TfGM
Metrolink	100%	28,000,000	To extend the Metrolink network to new areas and to increase the frequency and capacity of the existing lines – see The future of rapid transit | Bee Network | Powered by TfGM
Local Rail	35%	21,300,000	To work with the wider rail industry to maximise decarbonisation through extending electrification, replacing diesel trains through bi- or tri-mode trains and removing diesel operation under electrified lines.
Cars	1%	1,180,100,000	To promote the shift to electric vehicles as well as plan for growth in a way that reduces dependency on the car by ensuring that communities have easy and local access to amenities while encouraging sustainable modes of transportation.
Taxi	1%	38,600,000	To enable the transition to Low Emission Vehicles for the GM taxi fleet.
All Trips Considered	36%	2,025,900,000	An integrated London-style transport system which will join together buses, trams, cycling and walking and rail.

The table above used TRADS data which only considers trips made by GM residents, and as such a freight baseline cannot be set using the methodology. TRADS data is based upon an annual survey of the travel of members of 2,000 households in GM over a 24-hour period. The study is designed to proportionally represent each GM district based upon the demographics of the resident population. The forthcoming Local Transport Plan will set out the issues and opportunities for zero carbon logistics.