Greater Manchester urban platformisation case study

# 1. Greater Manchester urban platformisation summary

Over the past decade, urban platformisation in Greater Manchester has become increasingly shaped by an emerging logic of municipal control in governing arrangements and polycentricity in the spatial imaginaries of transport strategy. This represents a partial break with a ‘first wave’ of urban platformisation, characterised by the entry of numerous private platforms looking to exploit urban agglomeration and density – which was encouraged or facilitated by Transport for Greater Manchester’s (TfGM’s) entrepreneurial approach to urban innovation. Today, primacy has been given to the coordinated extension of public control over individual/modular networks (including tram, bus and bike-share, with local rail also an ambition) and the secondary layering on of platform services and infrastructures as the pathway to integration. Key drivers of this shift include: (i) a change in governance arrangements, including the growing institutional power of the Mayor and GMCA established through devolution; and (ii) high-profile failures (e.g. integrated ticketing, Mobike) and deteriorating public transport provision attributed to deregulated and unregulated domains of mobility provision. However, while the shift has been significant, urban agglomeration and growth remain the dominant logics of spatial development in Greater Manchester, with the reorientation of transport priorities perhaps best seen as a strategy for lubricating and reducing the (economic and political) costs of that model.

The most important element of this shift is the development of the Bee Network through: (i) the reregulation and franchising of the commercial bus networks; (ii) its gradual integration with the publicly owned Metrolink through publicly controlled ticketing and payment systems and Bee Network app – and through coordinated network planning; (iii) the establishment of Bee Network/Starling Cycle Hire scheme, owned by TfGM but operated by Beryl – with future integration intended with public transport networks. One way of framing this is a process of growing control of modular elements of the ‘stack’, followed by platform integration. This also appears reflected in the evolution of thinking around mobility-as-a-service, where control of key strategic elements of the stack (e.g. back-office and journey planner) are seen as key priorities.

Private forms of modular platformisation continue and coexist, with Manchester often following London as a launch site for start-ups in the UK (many of which have failed). Uber launched in 2014 and has been joined by ride-hailing rivals FreeNow and Bolt. While Mobike’s high-profile failure (2017-18) shaped the shift in approach to platformisation, the Lime e-scooter trials in Salford (2021 to present) and Rochdale (2021-22) follow a similar model – though on the margins rather than centre. Alongside Google Maps, Citymapper and Moovit, Transit and HERE We Go make up five private journey-planner/MaaS apps operating in the city. Greater Manchester has also been a site of various platform experiments, facilitated by the TfGM Innovation team, including the e-scooter trials, various MaaS pilots as well as e-cargo bike share and mobility hubs/eHUBS.

Key digital infrastructure which TfGM controls include the ‘get me there’ smart ticketing system and app, recently rebranded as the Bee Network app, which now integrates (contactless) ticketing for Metrolink and the expanding franchised bus network – contracted out to various platforms (e.g. Ticketer, Vix Technology, Corethree). Sitting beneath this is a modern back-office cloud-based data warehouse operated on a software-as-a-service model which will form the basis for its account-based ticketing system and also uses data fed in from TfGM’s ITS/UMTC infrastructure. TfGM also owns and intends to take over operation of the Bee Network/Starling Cycle Hire scheme.

The contingencies of projectification, shifting context and logic of urban platformisation have also been reflected at organisational level. The failure of TfGM’s Future Transport Zone bid has resulted in a diminished role, resources for and size of the innovation team (only one member of staff in April 2024) compared to the public transport (especially bus) and ticketing teams. The emphasis of digital strategy has primarily become about ticketing integration, and we perceived a certain degree of organisational fragmentation and siloing across innovation (emphasis on experimentation and entrepreneurialism), data/IT (emphasis on network optimisation and flow), and public transport/ticketing (emphasis on public control and patronage).

In terms of organisational capacity and capability, TfGM is a large MTA in the English context with significant resources and approximately 1,000 employees (this is an estimate) – allocated over £1.8bn between 2018 and 2023 (including CRSTS, BSIP, Active Travel Fund, BSOG, covid recovery funding, Transforming Cities Fund, ZEBRA). It has been the beneficiary of England’s first and most extensive city-regional devolution deal, beginning in 2014 (and piloting from 2009) and the longer-term stability of the city-region through AGMA since the dissolution of Greater Manchester County Council (GMCC) in 1986.

# 2. Greater Manchester governance context

The shift towards a more municipalist and coordinated approach to urban transport policy and platformisation in Greater Manchester has been strongly influenced by the devolution process and pre-existing governance arrangements. Greater Manchester Combined Authority (GMCA) was created in 2011 and is the largest of the CAs in terms of budget and responsibilities, and was the first to negotiate a major devolution deal (including transport powers) in 2014, following its piloting of city regional status from 2009. This was built not only on city regional leaders’ strong relations with central government and trusted status as a place of innovation and experimentation, but on the long-term and stable set of institutional relationships established through the Association of Greater Manchester Authorities (AGMA). AGMA was created as a voluntary association after the dissolution of the GMCC in 1986, maintaining a spatial imaginary and practices of territorial unity that other areas did not. Yet the loss of control of the bus network through deregulation and privatisation from 1986 also had profound effects on the context for platformisation in the 2010s (see below). So too did the failed Greater Manchester Transport Innovation Fund and Congestion Charge referendum held in 2008 – which contributes to the reluctance to impose clean air zone charges and the focus instead on growing public transport rather than constraining car use.

TfGM was created in 2011 as the transport authority attached to the new Greater Manchester Combined Authority (GMCA) – replacing the old GMPTA. The first devolution deal in 2014 set a timeline for GMCA to become the UK’s first mayoral combined authority in 2017. While limited in scope, it also established local transport as the most meaningful area of devolution in England to metro mayoral areas in terms of powers and responsibilities. Transport policy therefore became central to the mayoral election, with the promise of a locally controlled ‘London-style’ integrated public transport system at the heart of Andy Burnham’s successful campaign. As well as putting transport at the centre of city regional politics, devolution and the creation of a directly elected mayor has introduced a new electoral geography – influencing a more polycentric approach to transport strategy and provision, which partly challenges the prevailing prioritisation of Manchester city centre.

Devolution deals have led to the rescaling and consolidation of transport powers both down from national government and up from local transport authorities. Most important has been the provisions of the Bus Services Act of 2017, which enabled mayoral CAs to bring local buses under public control, powers GMCA were first to use. TfGM has also obtained powers over local roads, active travel infrastructure and smart ticketing, but not over the Strategic Road Network or local rail – though governing arrangements to facilitate ticketing integration between rail and the emerging Bee Network were a key area of the most recent ‘Trailblazer’ devolution deal in 2023. Devolution deals have crucially involved the opening of new funding streams from central government to TfGM, including long-term settlements such as CRSTS. While transport governance remains fragmented at city regional level across different local, national, public and private bodies, and funding remains dependent on competitive streams of money and negotiated settlements with central government, the increasing powers and resources available to TfGM over the past 10 years have significantly shaped the trajectory of urban platformisation.

# 3. Greater Manchester transport strategy and funding context

## Greater Manchester Transport Strategy 2040

Over the past 10 years, Greater Manchester has maintained a consistent long-term transport strategy as under the consolidating devolution process. The 2040 strategy was originally published in early 2017, before the election of Andy Burnham as the region’s first metro mayor. The current version, released in 2021 during the pandemic, was badged as a ‘refresh’ rather than new strategy. While there is a noticeable tilt towards a more polycentric approach (reflecting the changing electoral geography of the region), a stronger emphasis on bus franchising as the centrepiece and fleshing out of a vision for local neighbourhoods, the text of the strategy is largely unchanged.

The primary concern of GMTS2040 is about supporting and managing projected population and economic growth over the next 20 years – the model of urban agglomeration and regional centre development which the city region has long been organised around. The key priority is to create an integrated urban transport system which helps lubricate this model and minimises the growing costs of fragmented public transport and growing congestion (estimated at £1.3bn per year). While secondary, there is growing recognition of the contradictions of the growth model as expressed through the socio-spatial, public health and climate impacts of the existing transport system, and policies (e.g. the ‘Right Mix’ goal for modal shift to sustainable travel) to tackle them – especially in light of legislation relating to clean air and ‘climate emergency’/net zero targets. There is a recognition that deregulation and market competition has undermined these goals and greater public control (gradually granted through devolution) of the public transport system is necessary to address them. The ‘municipalist’ turn in Greater Manchester is best understood in this context.

The digital strand of the overall strategy is relatively undeveloped, but its the overriding objective is to support ‘seamless’ multi-modal travel across an integrated public transport system – overcoming the historical challenges of integrated ticketing. Otherwise, digital strategy is relatively limited to continuing Greater Manchester’s status as a site of innovation and experimentation – although the view that Manchester should offer itself as a sandbox for private tech companies appears increasingly marginal within TfGM since the experience with Mobike.

## Other strategy docs

There are a number of sub/supplementary strategies produced by TfGM and feeding into GMTS2040, including:

* GM Transport Delivery Plan 2021-26
* Evidence Base (2018)
* GMTS Progress Reports (2017-18; 2022; 2023)
* Manchester City Centre Transport Strategy
* GM Streets for All Strategy
* GM Bus Service Improvement Plan (2021)
* GM Bus Strategy: Better Buses for the Bee Network
* GM Prospectus for Rail
* GM Walking and Cycling Commissioner: Made to Move
* Refreshing GM’s Active Travel Mission
* GM Bee Network: Greater Manchester’s cycling and walking infrastructure proposal
* GM Clean Air Plan and Greater Manchester Air Quality Action Plan
* GM Congestion Deal
* GM EV Charging Infrastructure Strategy

Other key documents produced by GMCA include:

* Greater Manchester Spatial Framework
* The Greater Manchester Strategy: Our People, Our Place
* GM Infrastructure Strategy
* Greater Manchester 5-Year Environment Plan
* GM Local Industrial Strategy

Previous strategic transport plans

* 2017 version of GMTS2040
* LTP1
* LTP2
* LTP3

## Funding context

Outside of London, TfGM was one of the most well-funded transport authorities in the UK during the period of study. A non-exhaustive list of funding streams includes:

* TfGM received £312.5m through the Transforming Cities Fund in 2018/19, second only to the West Midlands
* In April 2022, TfGM received £1.07bn through CRSTS for the period 2022/23 to 2026/27 – and will receive a portion of £8.8bn allocated for CRSTS 2 for the next period
* In 2022 TfGM received £95m in BSIP funding
* Over £13 million via BSOG each year, with Greater Manchester being the first authority in the country to receive this funding directly. As of 2023 GMCA will receive a fixed sum of £13m of BSOG+ funding to continue supporting services (£6.5m for each of 2023/24 and 2024/25)
* TfGM was allocated £39.7m through the Active Travel Fund in Tranches 1-4 between 2020 and 2023
* £260m (before June 2023) + £18m (June 2023) in covid support for the bus and tram network
* ZEBRA funding of £35.7m
* TfGM submitted an unsuccessful bid for Future Transport Zone funding in 2019 [link]

# 4. Greater Manchester’s geography and existing public transport system

Greater Manchester is marked by geographies of urban agglomeration built around the dense and growing urban core of Manchester city centre and parts of Salford. While there are numerous smaller town centres across the city region, transport infrastructure and mobility flows are largely organised to facilitate regional, national and global movement of people, goods and investment in, out and around the city centre. Connectivity for the region’s three million people is characterised by rising congestion due to fragmented and unreliable public transport provision (especially local rail and bus services) and heavy reliance on private car travel – a situation which both reflect and fuel growing socio-spatial inequality between the urban core and surrounding areas.

Efforts to address problems of fragmented public transport networks and deliver ‘London-style’ integration repeatedly fell down in the deregulated environment prior to devolution. These experiences and associated economic and political costs have contributed to a change in direction, GMCA/TfGM using new devolved powers and resources to extend public control over different networks (e.g. bus, bike-share) while negotiating increased powers with each phase of devolution (e.g. local rail, private hire taxis).

## Metrolink

Manchester Metrolink is the UK’s most extensive urban light rail system. The first lines opened in 1992, and today the network consists of eight lines across the conurbation after numerous phases of expansion. Metrolink is wholly owned by TfGM. While initially operated by GM Metro Limited, a full concession to operate Metrolink was awarded to Serco between 1997 and 2007. In 2007, Stagecoach became the operator under a 10-year fixed-term management contract, but the company sold the concession on to RATP Group in 2011 without warning. Since 2017, the contract has been with Keolis-Amey – with the incumbent RATP Group one of the unsuccessful bidders – and currently runs to 2027. Fares were initially set by the operator but are today set by a GMCA/TfGM committee. After being promised in 2012 as part of the ‘get me there’ smart ticketing system, zonal ticketing was eventually introduced in 2019 as part of a move to contactless ticketing. While Metrolink receives no revenue funding, it received £144.5m in emergency funding between March 2020 and October 2022 during the pandemic [link]. By April 2023, patronage had only reached 85 percent of pre-pandemic levels [link]. Since TfGM has borrowed heavily against projected ticket sales, this has created significant financial stress for TfGM and the network [link]. This presumably carries risk for future plans, including further expansion, Pathfinder North (train-tram integration) and Metrolink’s role within the cross-subsidised Bee Network.

## Bus networks and the Bee Network

The most significant change to the public transport system is the ongoing reregulation and franchising of Greater Manchester’s bus networks. In January 2025, the third phase/zone of the franchised system will begin operations, bringing the entire network under TfGM’s control as a single network.

After deregulation in 1986, private operators began competing with the publicly owned GM Buses. GM Buses was split into two separate companies for privatisation in 1993, with GM Buses North and South both bought out in 1994 and then sold to First Group and Stagecoach respectively in 1996. While these two companies accounted for nearly 75 percent of market share in 2019, a multiplicity of other operators (e.g. Arriva, Rotala/Diamond, Transdev/Rosso + Go North West from 2019) made up a highly fragmented landscape of competing commercial networks [link] – with different systems/subsystems, subcontractors, proprietary data etc. Between 1986 and 2018, the number of journeys taken by bus in Greater Manchester declined from around 350m per year to under 200m – with a vicious cycle of residualisation emerging, with reduced patronage leading to service cuts, feeding into more fragmented and less reliable provision and further decline in usage. The governance context also meant TfGM had almost no regulatory power to improve services, while having to find ways of supporting essential and ‘socially necessary’ services that were unprofitable for the commercial operators.

The 2017 Bus Services Act gave MCAs the power to bring buses back under local control through a franchising system. In late 2017, Andy Burnham announced that GMCA would be the first city region to begin the franchising process – with this preferred route confirmed in June 2019 following an audit and report of the local bus market. A public consultation ran for three months from October 2021, with the proposals supported by 83 percent of over 8,000 respondents – and backed by the ‘Better Buses for Greater Manchester’ campaign. In the changed landscape of the pandemic, a second consultation was required in late 2020/early 2021, which received similar backing. Following support from nine of GMCA’s ten constituent authorities, the rollout of a franchised network was announced in March 2021. The move was strongly opposed by the bus companies and challenged in the High Court by both Stagecoach and Rotala on the basis of GMCA’s methodology in making their recommendation. While costly for GMCA, their victory in March 2022 and the failure of Rotala’s appeal was seen as a watershed moment for franchising, after which the major operators came to accept the direction of travel.

From this point, TfGM began rapidly preparing for the rollout of the new Bee Network – with Vernon Everitt brought in from TfL as the new Transport Commissioner. Under the new arrangements, TfGM would become network operator in charge of key infrastructure (including bus stations and vehicles), fares and ticketing, network planning, routes and timetables. Individual routes would be operated under contracts awarded to bus companies via a tendering process. Phase 1 included services running in and from Bolton and Wigan, including services running through parts of Salford and Manchester. It covered 20 percent of Greater Manchester was launched in September 2023, with contracts awarded to Go North West and Rotala/Diamond. Phase 2 was launched in early 2024, bringing the franchised area up to 50 percent of the city region, covering Bury, Rochdale and Oldham as well as the north of Manchester – with Stagecoach winning the three major contracts. Phase 3, which will mostly cover the south of the conurbation including the south of the Manchester City Council area, Stockport, Trafford, Tameside and the rest of Salford, is set to begin operating in early 2025 – completing the franchising process. Contracts are expected to be awarded in Spring 2024. Interviewees described the major organisational transition involved in becoming an operator and bringing various systems and responsibilities in-house [link].

Initial funding for the launch of the Bee Network up until 2025 has been allocated at £134.5m, including the setting up of the system, buying of depots, fare capping etc. The long-term goal is for a 30 percent increase in bus patronage by 2030. The expectation is that future funding via national settlements (and potentially local taxes) will be needed to top up revenue from fares. According to GMCA, the Bee Network overperformed in terms of ticket sales and revenue in its opening months. Prior to the national scheme, TfGM introduced £2 fares across Greater Manchester, with 20 percent discounts to those buying tickets through the Bee Network app. Intermodal tickets covering Bee Network buses and Metrolink were also introduced. The rolling out of the franchised bus network is seen as the most important first step of a physically and digitally integrated public transport network – with the long-term goal for integration with the Starling Cycle Hire scheme and local rail via tap-in, tap-out contactless ticketing.

## Local rail

While TfGM has been extending control over other aspects of the public transport system, local rail remains under the control of Network Rail and the train operating companies. GMCA has been pushing for greater influence, especially over stations. While progress in this respect has been limited, a key element of the Trailblazer Devolution Deal of 2023 was putting in place governing arrangements to facilitate ticketing integration between local rail and the Bee Network – with fully integrated local rail services with TOPO ticketing by 2030 [link]. At the national/interurban level, Greater Manchester has been impacted by the cancellation of Northern Powerhouse Rail and connections to HS2, as well as Transport for the North’s Integrated and Smart Travel programme.

# 5. Greater Manchester platformisation and public transport development over time

## Integrated ticketing

### Bolton Citizen card pilot (2007)

* Pilot scheme for residents of Bolton for smartcard with access to most buses, Metrolink and National Rail services in the TfGM area.

### Get me there (GMT) to Bee Network (2012-2023)

* TfGM metropolitan-wide ITSO smartcard badged as equivalent to Oyster Card intended to allow travel on Metrolink, buses, local rail and access to cycle hubs. However, long delays and problems with delivery led to cancellation of original contract with ATOS in 2015. GMT was taken forward by SystemOne Travel/Greater Manchester Travelcards Ltd (local company co-owned by private operators and TfGM, set up in 1994 to facilitate multi-operator ticketing).
* A GMT app is launched in 2016 and physical smartcard in summer 2017, onto which can be loaded different products. Governance challenges and various technical problems limit functionality of each, which operate as separate systems and add to service fragmentation and confusion. The scheme is increasingly seen as a failure, but also a product of deregulation – contributing to the decision to pursue franchising.
* Contactless ‘tap on tap off’ pay-as-you-go ticketing is delivered on Metrolink in 2019 (using Vix Technology and Corethree platforms for contactless and mobile ticketing), following introduction of a simplified zonal fare structure allowing price-capping – but bus (150+ ticket types) and rail ticketing remains highly complex and fragmented.
* In late 2019, GMCA/TfGM launch bus franchising consultation (see above). First phase of franchised services launch in 2023 with TfGM as operator – allowing for simplification and integration of ticketing across Bee Network services, with renewed aim of integrated fares and ticketing across bus, rail, tram and bike hire by 2030. Ticketer given contract for ETM and AVL systems across buses, with Vix Technology used for contactless payment. Ahead of this in late 2022, TfGM funds and introduces simplified £2 fares across the region – slightly before national DfT scheme – which eases transition.
* GMT smartcard and app are discontinued/rebranded/relaunched with the launch of Bee Network smartcard and app (designed by Softwire), which offer intermodal and discounted bus and tram ticketing. Real-time information/bus tracking and journey-planning were launched on the app in March 2024.

## Mobility-as-a-service

### MaaS experimentation in GM and evolution of TfGM thinking

* In 2015, Cubic Transportation was appointed as the system integrator for TfGM’s Optimised Public Transport Integration System (OPTIS). OPTIS was intended to provide a back-office system underpinning network optimisation and a TfGM journey-planner/MaaS app drawing on real-time data from different networks and modes. The project included partners Cloud Amber (management of static and real-time travel information), SilverRail (advanced journey planning) and MXData (app development and user interface). It was mentioned in both the 2017 version of GMTS [link] and the 2019 bus franchising assessment [link]. However, OPTIS was deemed a failure and ended around this time – although the traffic management element was retained. We do not have much information on this project, but our TfGM interviewee put this down to a lack of in-house digital capability and hinted at disagreements with the contractor and the project’s failure as a scar on TfGM’s future decision-making around digital and the role/governance of a GM journey planner.
* In 2018, TfGM carried out a MaaSEvo ‘proof of concept’ trial out Shudehill Interchange in partnership with Atkins consultants to understand how users might be encouraged to use cars less [link]. The trial involved 39 participants and ran for ‘a few weeks’ using a call centre and offering bespoke, incentivised travel plans created with taxi vouchers and public transport tickets. Involved bus operators and Metrolink (through ‘get me there’), Local Link, Enterprise Car Club and Mobike as partners.
* In 2019, TfGM was part of the IMOVE City MaaS project – a six-month trial as part of HORIZON EU-funded living lab project spanning Manchester, Berlin, Madrid, Turin, and Gothenburg. The wider project aimed at developing knowledge and capability for scaling cross-border ‘roaming’ service for MaaS users. The IMOVE app in Greater Manchester used Fleetondemand’s Mobilleo MaaS platform, and provided Manchester Airport staff with ability to plan, book and pay for journeys, with access to Enterprise car hire and car club modes, Stagecoach bus services, trains, Metrolink trams and TfGM’s Local Link minibus service. Involved c. 100 participants. Described as having fairly limited capability and reliant on back-office workarounds to simulate MaaS experience – due to limits of journey-planning functionality and challenges of integrating different operator systems (technical and political). Project evaluation reports available and material via interviewees.
* In 2019, TfGM was also involved in HORIZON funded MaaS4EU project, another living lab designed to test MaaS technologies and business models in different contexts. This is mentioned in various TfGM slide-decks as designed to test a MaaS platform (operated by TfGM) and subscription model [link] involving MediaCity in Salford. It is unclear what happened with this trial in the end, but multiple challenges are mentioned in an end of project presentation, including covid-19 disrupting the pilot [link]
* At the same time (September 2019), TfGM submitted an unsuccessful Future Mobility Zone proposal. ‘GM MaaS’ was a core element of the project, and proposed an ambitious large-scale MaaS experiment across the region [link].
* In June 2022 TfGM entered a new partnership with SkedGo. The platform’s journey planning software was integrated into TfGM’s online journey planner, badged as initiative to reduce air pollution, giving users information and options to prioritise journeys based on carbon emissions, speed, cost and convenience (following the model of the ‘Choose How You Move’ initiative between SkedGo and Leicester city council). Our interviewee described it as a trial through which TfGM were hoping to learn more about the possibilities/role of the journey planner in the wider MaaS system.

The failure of the FMZ/FTZ bid left MaaS somewhere in the background at TfGM and without a major funding source to continue its development – while organisational focus and resources were concentrated on bus franchising. During fieldwork in 2022, the view appeared to be that when funding was available, MaaS would be progressed. There was some ambivalence about how exactly the MaaS platform would be configured (e.g. who would own or control which parts of the system) – but two key elements came through: (i) it would be built around the core public transport system, and TfGM’s growing control over different networks (tram, bus, bike-share) and their APIs would provide leverage and protect against competitor MaaS apps undermining GM MaaS; (ii) data capture and use would be key to its success, built around account-based ticketing and control over the journey planner. Development of TfGM’s thinking and different organisational models for a MaaS platform can be seen in slide-decks from 2020 and 2021 – including a diagram of what the ‘stack’ might look like, which seems to suggest public control of the back end ‘GM Mobility Hive’ as the priority [link].

### Other commercial MaaS/journey-planning platforms operating in Greater Manchester

* Google Maps launched public transport links to its app in 2014, and multi-modal journey-planning app now includes partial integration of Starling bike hire (through Beryl) and Lime e-scooters, as well as Bolt, FreeNow and Gett taxis (i.e. location and journey-planning). While Uber used to be on the platform it has not been since around 2018.
* Citymapper launched around 2015 (date unverified) and offers multi-modal mapping and journey-planning available across Greater Manchester. The platform includes partial integration with Lime e-scooters.
* Moovit also launched its MaaS and multi-modal journey-planning app in 2015, which is available across GM, partial integration of Beryl bike and Lime e-scooters.
* Both Transit and HERE WeGo also provide multi-modal journey-planning app available across GM – the only city-region of the three where these platforms operate.

## Data integration and management infrastructure

During the period of research, there was some development and consolidation of in-house data capture, aggregation and processing capacity and capability – something which has become particularly important to the operations and ambitions for the Bee Network. The below is only based on a couple of interviews so is incomplete and would need some further cross-referencing/corroboration for accuracy:

* At the time of interviews, TfGM was operating its ITS/UTMC with an off-the-shelf Mott MacDonald system, with some bespoke features, within the Highways team. The original spec of was for integration of data streams from different modes, networks and data such as air quality, but this proved ‘very difficult’ and unsuccessful in the whole (possibly part of the same story as OPTIS – see above) – down to fragmentation and failure to establish strong standards regime, and cost of integration services from outside. Scope was gradually limited to road management and supporting UTMC (i.e. traffic signals, parking, pushing out journey times and disruption info), now described as something of a legacy system with its contract coming to an end (June 2022) – and needing something new (funded through CRSTS) which would integrate and function better with the aspirations of the Bee Network and integrated network management, though described as challenging as scale and complexity grows [link]. Interviewees also described their lack of resources compared to big platform data providers – e.g. Google, Waze, HERE – and challenges of: (i) competing with them in terms of data quality and accuracy; and (ii) the cost of data-as-a-service from these platforms.
* More recent developments highlight TfGM’s ambition to build the infrastructure for TfGM to capture as much data as possible from (publicly controlled) integrated public transport network (building out from Metrolink to Bee Network buses, cycle hire, and towards rail and others). This includes data on ticketing, network flow, disruptions, travel patterns, multimodal travel, user experience – for in-house use in network planning, real-time traffic/congestion management, behaviour change, etc. TfGM was described as ‘on a journey’ to developing this capability in-house to get the most value out of data. A key moment in the development of data capability in TfGM came with the contactless ticketing for Metrolink which became operational in 2019. While not that explicit in interviews, it seems that the development of infrastructure for contactless for Metrolink could become the back-office of a future MaaS/account-based ticketing system at TfGM – which seems to be hinted at in a couple of interviews [links]. It was on the back of contactless that TfGM procured a new data warehouse from Snowflake – where all the data is captured. This is provided on a SaaS basis – i.e. it is a pay-as-you-go for how much data capacity and computing power is needed which TfGM doesn’t have to maintain itself.

## Micro-mobility

### Pre-Mobike (2012-2017)

* Various small-scale bike-share schemes operated in Greater Manchester in the 2010s. Bike & Go operated 30 bikes across five train stations in Manchester between around 2013/14 and 2019, when the company ceased trading; Brompton Bike Locker (outside Piccadilly) has operated since 2012, now available from three locations through Bromptom Bike Hire platform/app; prior to the Beryl scheme, TfGM ran E-bikes for Business scheme with 22 e-bikes available with GPS tracking, which were free to loan; Manchester Bike Hire also have a range of different kinds of bikes available for hire through online platform across six locations in Manchester.
* In 2012/13, TfGM commissioned JMP and Transport Initiatives to produce the Greater Manchester Cycle Hire Study [link] – a feasibility study for a public bike-share scheme in Greater Manchester, looking at existing schemes in different cities, potential business models, etc.
* This was followed up in 2017 by a further feasibility study carried out by SYSTRA. We were unable to find copy of this report and its recommendations as TfGM looked to introduce a subsidised PBS – but these were superseded by the sudden entry of Mobike in the same year and its offer of a no-cost scheme [link].

### Mobike scheme (2017-18)

* Free-floating dockless bikeshare scheme operated by private Chinese operator Mobike, launched in Manchester and Salford in June 2017 with 1,000 bikes and the first dockless bike scheme in the UK. Separate MOUs were signed with Manchester and Salford city councils to initially operate a six-month trial – with Mobike wholly financing and operating scheme, with little coordination but agreements around GPS data-sharing and a ‘Mobike Operations Group’. Mobike were welcomed by TfGM at first as a cost-free bike-share scheme, but the unregulated scheme soon became problematic and a PR disaster due to vandalism, theft and street clutter which became synonymous with the scheme.
* The platform’s geofenced area initially encompassed the whole of Greater Manchester, but was reduced to the city centre in November 2017. Our interviewee said the platform had six or seven staff in the city. Mobike pulled out of Manchester in 2018 after losing 1/10 bikes to vandalism and theft, with scheme deemed financially unsustainable.
* Manchester was the earliest and most high-profile of Mobike’s exits from UK cities, and the experience significantly burned local councils and TfGM. Manchester City Council declined to be involved in the e-scooter trials as a result, and the experience shaped the future direction of platformisation in the city – including the e-scooter trials and the form and governance of the GM Cycle Hire/Bee Network scheme. Interviewees talked about the lack of control and even basic communication they had with Mobike as a private and non-domestic operator, in terms of contractual arrangements and processes for managing the scheme.
* There is an Atkins evaluation/lessons learned report on the Mobike scheme from 2019 or 2020, but we couldn’t find a copy. Salford University/Graeme Sherriff produced a 2018 report [link] and academic paper [link].

### Greater Manchester/Bee Network Cycle Hire/Starling Bikes (2021 onwards)

* Publicly owned and branded bike-share scheme launched in November 2021 with bike system and management contract given to Beryl to operate scheme through its platform, with aspiration at TfGM is to bring the entire operation in house over the course of the five-year contract with Beryl. The cycle hire scheme is viewed as part of a longer-term vision and strategy of an integrated Bee Network (including public transport, walking and cycle infrastructure and ticketing), made simpler in the bike-share side by a single scheme controlled by the public authority. The ambition built out gradually from the urban core to other boroughs, but that is contingent on future funding availability and commercial viability. The scheme’s initial budget was £16.96m – including £12m from the Mayors Cycling and Walking Challenge Fund.
  + - * In terms of governance, our Beryl interviewee described the tender and contract as quite unique and specific at the time. Most of their UK schemes are operated as more conventional private schemes, but the large MTAs (e.g. TfGM, TfWM, TfL, WYCA) are run as contracted services. Beryl provide the bike system, infrastructure and platform for booking and payment, own the data and are paid to deliver the overall service according to various KPIs. TfGM take the revenue in bulk payments, but there is a revenue-sharing agreement as part of the contract if certain KPIs are met. TfGM interviewee described the importance of the bike-share as a ‘managed’ scheme with much greater public control compared to the Mobike operation. Interviewees described the importance of close working relationship with Beryl, the use of physical assets and infrastructure (including crucially bike stations), local stakeholder engagement and having a local team and operations centre in the city for managing the scheme.
      * Phased introduction beginning with three zones of Manchester, Salford and Trafford, including Manchester city centre, MediaCity, Salford University and Oxford Road – with 1500 bikes planned for August 2022. Phase 2 was set to begin after the initial five-year contract and funding phase and financial success of the scheme, population density and existing cycle infrastructure.
      * Limited overlap of bike-share with private Lime scooters – only in Salford University zone.
      * In May 2023, TfGM claimed it had 50,000 users and 1200-1500 rides per day, with around 1,000 bikes available. However, by June 2022 availability had become severely reduced and concentrated in the city centre, with reports of widespread vandalism and 800 bike damaged or missing [link], and 1,000 stations to be temporarily closed. The aim was to reintroduce bikes gradually with new rules and higher fines. Salford stations were to be reduced where thefts were reported to be high, and where Lime scooters were also available. TfGM and Beryl were reported to be incurring significant costs for the recovery, repair and replacement of bikes.
      * In 2024, TfGM announced a sponsorship deal with Starling Bank and a rebranding of the scheme as Starling Bikes – reported as TfGM’s biggest ever commercial deal, but no details publicly available. [link]
      * The GM Bee Network Cycle Hire/Starling Bikes represented a significant shift in the governance of shared micro-mobility after the experience with Mobike, with emphasis put on public control of the scheme and its integration with the developing Bee Network. However, while public and private investment is seen as an important element of sustaining it as a public scheme over the long-term, its prospects still depend on its commercial viability.

### Lime e-scooter trials in Salford and Rochdale (2021 onwards)

* Dockless e-scooter trials run by Lime. Separate trials launched as part of DfT e-scooter trial during COVID-19 around Salford University and Rochdale town centre. Salford and Rochdale were the only councils which volunteered to be pilot areas when asked by TfGM. Manchester City Council decided not to participate after experience with Mobike and wait on results of other trials. Various interviewees for local councils and Lime highlighted this trials’ geographical coverage and lack of connectivity as a significant limit on trial data and actual usage/demand.
* The existing schemes operate(d) as non-subsidised commercial operations, with local councils putting out tenders with support of TfGM. TfGM and local authorities invited pitches by providers to run schemes (Salford/UoS/TfGM received 15 submissions). Lime won both tenders and came out on top with operator’s size/experience/resources highlighted as key factor in Salford after the negative experience with Mobike. Schemes managed and funded privately by Lime, managed according to agreements reached between provider, local authority and TfGM – included data sharing, independent evaluation by Salford University, agreement of operational areas, max speeds.
* Rochdale trial ended after 12 months after 12,000 rides taken by 3,000 riders, with Rochdale Council deciding against extending for a further six months. Problems were highlighted around street littering and safety implications for blind/disabled residents, some scooters vandalised/in the canal, with our interviewee in Rochdale mentioning bad press around an accident early on in the trail and anti-social behaviour resulting in local councillors turning against the scheme. Our Lime interviewee viewed the service area as commercially unviable in isolation from the rest of GM.
* Salford trial began in small area around university, but significantly expanded and extended to May 2024. In Salford interviewees described a coordinated approach to locating of parking zones, but the operation is entirely run by Lime. The scheme is cost-neutral for Salford council, with Lime covering all costs and no profit-sharing agreement in place. Salford University is also a partner on the trial, providing local evaluation. The Lime interviewee claimed the scheme was breaking even financially in late 2022. In February 2024, Lime announced it would increase its Salford fleet size by 45 percent to meet growing demand, with over one million rides made in the area over the three years of the scheme.
* Key documents and data in relation to the Lime scheme in Salford can be found in the Graeme Sheriff/Salford University report [link] + slides [link], Lime [link] and TfGM [link], Salford Council Lime scheme approval.
* Lime scooters have a ‘shallow’ integration with Google Maps, Citymapper and Moovit and ‘deep’ integration with Uber – which is a major investor in Lime – meaning scooters could be accessed from within the Uber app.
* As e-scooter companies struggled in the context of the post-covid economic turbulence (supply chain issues, rising energy costs, inflation and interest rates) and the market consolidated, Lime was widely tipped as likely ‘winner’ – partly due to its deeper pockets and backing by Uber.
* Overall, the Lime scooter trials in Greater Manchester sit on the margins of TfGM strategy, both geographically and organisationally, and outside the development of the Bee Network. Could be described as contained, opportunistic experiments overseen by the TfGM innovation team and local authority officials, while the public Cycle Hire scheme (above) takes precedence. TfGM has indicated that it favours a GM-wide shared mobility strategy which will shape micro-mobility, but the Shared Mobility Strategy has yet to be published – despite being promised first for 2022 and then 2023. Questions about the status and integration of commercial shared mobility services in the Bee Network were expressed in late 2022 [link]. For scooter companies and Lime, even though the Salford trial is described as successful, it still appears to be seen as a placeholder for the main prize of Greater Manchester and especially the city centre/urban core – though this cannot happen until legislation is passed. Lime hopes to run GM-wide scheme in future – but has concerns about shared e-scooters’ place alongside and in competition with GM Cycle Hire scheme. One TfGM interviewee meanwhile noted that since Beryl also offer scooters this could be added to their contract at some point as part of an expanded publicly controlled shared micro-mobility scheme.

### Other micro-mobility schemes

* As part of TfGM’s year-long eHUBS project in 2021-2022 [link], 25 e-cargo bikes were available through the Dutch platform Cargoroo, managed by Manchester Bikes, located across four mobility hubs.

## Other modular mobility platforms in Greater Manchester

### Ride-hailing (2014 onwards)

* Uber entered the city region in 2014, followed by competitors FreeNow in central Manchester 2018 and Bolt in Manchester and Salford in 2022. Other platforms including Gett, Ola, Kabx and xooox all appear to have tried to enter GM market at moments between 2014 and 2020, but either never launched, folded or remained marginal. In 2022 Uber launches Local Cab using Autocab, which enables users to book taxis with other local operators through the Uber app – extending Uber’s influence over the local private hire market and bringing more local firms into its own ecosystem [link].
* Shapes wider platformisation of taxi market – sees new software companies such as iCabbi, Manchester-based Autocab (acquired by Uber in 2020) and Karhoo providing similar platform-based booking and comparison services for and across traditional taxi firms.
* Governed with limited oversight, but licensed through local authorities. In 2019, Manchester City Council called Uber in and threatened to remove its license over concerns about safety standards, regulatory control and flooding of local market – following similar actions by TfL and others [link]. In late 2023 the mayor and local drivers complained about private hire license standards being undermined by Wolverhampton Council – where 1/3 of private hire drivers are licensed [link].

### Car-share and car clubs (mid-2010s onwards)

* Enterprise has a number of car clubs across Greater Manchester, especially in central and south Manchester, as well as Trafford and Stockport. Enterprise Car Club launched in Manchester since 2015, but previously operated as City Car Club. Enterprise has been a key and enthusiastic partner in TfGM’s various MaaS experiments [link]. The other major car club Co-Wheels has operated in the region since 2015 – but is limited to areas of Salford.
* Car-share platform Turo has also operated across Greater Manchester since 2018, and the region has seen the entry and exit of several short-lived car-share/car rental start-ups (e.g. Karshare, Forestcar, Virtuo) in recent years.
* Prior to covid-19, TfGM ran its own lift-sharing service call CarShare GM. Various carpooling/lift-sharing platforms (e.g. BlaBlaCar, Liftshare, Jambusters) are also available, but very marginal.

### Public transport platforms

* Existing public transport networks have also been gradually digitised/platformised since the late 2000s – but in a fragmented way across different operators. As the Bee Network is fully rolled out however, this landscape will become increasingly simplified under TfGM as a unified operator and data controller. The below is from the online-based platform mapping work in early 2022 and may not all be accurate/up to date – some cross-referencing with bus company interviews could be helpful.
* Vix Technology has provided ticketing machines and systems for Stagecoach Manchester since 1998, including contactless since 2016 – until the phasing out of Stagecoach routes with the Bee Network. Since 2019, it has been used as the provider for contactless ticketing on Metrolink – and across the rest of the Bee Network since 2023. Ticketer was the ticketing machine provider for First and Arriva buses, including contactless and ‘tap on, tap off’ (with Littlepay), and was given the Bee Network contract for ETM and AVL systems. We did not have the data of which ticketing systems and platforms were used by the smaller commercial operators.
* Other platforms and software companies have provided a range of services and products, including mobile ticketing, journey-planning and maps, real-time info and timetabling, network planning and mobile apps – including Corethree (First, Arriva, get me there), OnTrack Retail (Go North West), Rise Digital Media (Diamond/Rotala), Transdev (Transdev/Rosso), HaCon (Arriva) MxData/Mapway (Metrolink), CitySwift (Go North West) Optibus (Stagecoach), Trapeze (Arriva, Stagecoach, TfGM) – while others have been developed in-house (e.g. First [link]).
* Interestingly, despite being an area of platform experimentation, there were no DDRT trials or proposals during the period of study – although there was some digitisation of community services.