

Greater Manchester's Outline Business Case to tackle Nitrogen Dioxide Exceedances at the Roadside

Project and Work Package Summary Sheets



Salford City Council



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Bus Capacity

Classification: Business as Usual (BAU) / **Cost:** Not an implementation funding ask

6. Project and Work Package Summary Sheets

6.1 Bus Capacity

Liaison with Bus Operators to agree routes with expected increase in demand for Bus Operators to plan increases to commercial services.		
Category		
The Bus Capacity measure will: <ul style="list-style-type: none"> • Help people and businesses to switch to a cleaner mode of transport • Reduce transport costs for people 		
Rationale		
There is the potential for increases in use of public transport following the introduction of a Clean Air Zone. Transport for Greater Manchester will commit to provide analysis to operators to enable network planning to be done in a timely fashion.		
Cost	Top Risks	Procurement Route
Not an implementation funding ask	1) Operators unable to meet capacity with compliant buses.	N/A
Process/Eligibility		
N/A		
Group Impacted		Distributional Analysis
Bus Operators, Bus Users		Greatest benefit will be in areas where there is a historically older fleet profile.

Component	Engagement
Component Description	This is a liaison exercise, and it will be important that operators are aware of all details in a timely fashion to allow network planning.

Phase Component	Design Phase	Implementation Phase	Operation Phase	Decommissioning Phase
Bus Capacity	TfGM	Bus Operators	Bus Operators	N/A

Bus Capacity

Classification: Business as Usual (BAU) / **Cost:** Not an implementation funding ask

Dependencies	
<p>Internal Dependencies: Success of Clean Bus Fund and retrofitting of buses; Proposed CAZ scheme; Local Authority and Greater Manchester Family Fleet Upgrades; Sustainable Journeys uptake</p> <p>Intra Dependencies: Bus Reform; Congestion Deal; Made to Move - shift to cycling and walking; New Bus Interchanges in Greater Manchester</p> <p>External Dependencies: Bus operator capability and response to GM CAP scheme</p>	
Stakeholder Engagement	
<p>We have met bus operators through OneBus (GM operator meetings) and during evening briefing sessions. We have also contacted them in order to ascertain fleet data in order to refine policy.</p>	
Benefits Register	
Benefits Evaluation Process	Not a Funding Ask
Description	As above
Service Feature	As description
Costs	None within bid
Activities Required to Secure Benefit	As component description
Responsible Officer	Head of Bus
Performance Measure	N/A
Target Improvement	N/A
Timescale	N/A

Vehicle Renewal Scheme - Clean Bus Fund

Classification: Project / Cost: £30m

6.2 Vehicle Renewal Scheme - Clean Bus Fund

The Clean Bus Fund is part of the Vehicle Renewal Scheme which would offer subsidies to retrofit the majority of existing Euro IV and V buses with flexibility for the move to an EV bus network, including financial assistance towards charging infrastructure, prioritised on Air Quality benefits and commercial contribution. The Fund, which would be managed and administered by the Operational Body would require Greater Manchester bus operators to submit applications to access funding that will provide the necessary financial support to upgrade their own fleet to be compliant. Within the application, operators would be expected to demonstrate the mechanisms that will be deployed to upgrade their fleet, associated timescales of delivery and continuity of service provision. In addition, coaches would be eligible under the Clean Freight Fund.

Category

The Clean Bus Fund would:

- Enable Greater Manchester to implement local plans that collectively impact on fewer people
- Help people and businesses to switch to a cleaner mode of transport

Rationale

Buses emit 2% of the NO_x emissions in Greater Manchester (9% on bus routes), within the 2021 Do Minimum.

Following implementation of a Clean Bus Fund, there is a prediction of 5% reduction of NO_x across Greater Manchester. The number of modelled point exceedances is reduced from 250 to approximately 160.

Buses are an essential component of the public transport offer, and in many parts of the region are the only public transport available. It is vital that action to clean up the bus fleet does not have the unintended consequences of reducing the number or frequency of bus services in the region or add costs to the service to the extent that it forces a shift to more car usage.

At present, around 2,000 of the approximately 2,200 buses operating in Greater Manchester do not comply with the emissions standards set by the proposed Clean Air Zone (CAZ).

The retrofitting of buses is a relatively inexpensive way to deliver compliance quickly, however, it does not fit with the Greater Manchester longer term strategy or ambition to have a zero emission bus fleet. Investing more in a cleaner bus fleet would both reduce emissions and improve the appeal of bus travel in Greater Manchester, facilitating a mode shift and resulting reduction in emissions.

A Clean Bus Fund is proposed in response to the imperative to act quickly to clean up the bus fleet, and to do so without damaging service provision. Buses that are not eligible for retrofit would require the market to identify the solution.

Effective behavioural change will result from both charge base and locally delivered Vehicle Renewal and Loan Finance Schemes (See Section 1.7 of the Strategic Case). The Clean Bus Fund will assist the introduction of the proposed CAZ for buses by 2021. Without funding for retrofit and upgrade of buses, it would not be possible to implement a potential GM-wide CAZ for buses in 2021 as the age and turnover of the existing fleet means that a high proportion of buses would be non-compliant and the risk of a substantial reduction in bus services would be high. Bus services in Greater Manchester are commercially operated and operators are able to reduce services provided if they are not profitable. Consequently, the Clean Bus Fund is an integral part of the package required to deliver compliance in the shortest possible time.

Vehicle Renewal Scheme - Clean Bus Fund

Classification: Project / Cost: £30m

Cost	Top Risks	Procurement Route
<p>£30m including Optimism Bias and contingency.</p> <p>Costs estimated on the basis of TfGM database of fleet size and composition.</p> <p>Costs of retrofitting a single bus is estimated to be £20,000 including a level of contingency.</p>	<ol style="list-style-type: none"> 1) Eligibility of buses to be retrofitted due to vehicle age 2) Market capacity for bus retrofitting services impacting timescales and compliance 3) Cross boundary services from neighbouring authorities not under legal direction could be impacted 	<p>There are commercial organisations providing Selective Catalyst Reduction (SCR) retrofit services that could be expected to up-scale to meet the proposed scheme requirements, however, this will need forward planning and training of operatives and companies are likely to require confirmation of the scale of works to be undertaken before being willing to make the financial commitment to staff training / recruitment and the required engineering equipment needed.</p>
Process/Eligibility		
<p>The following key points should be noted in terms of applying for the subsidy:</p> <ol style="list-style-type: none"> 1) The existing Euro I, Euro II and Euro III fleet of buses are not eligible 2) Only vehicles operating within Greater Manchester are eligible, including cross-boundary services <p>The Clean Bus Fund will build upon the Clean Bus Technology Fund principles, for example buses must be deployed within Greater Manchester, and evidence will be needed around how retrofitted buses will be deployed and maintained in the region.</p>		
Group Impacted	Distributional Analysis	
<p>It is anticipated that the following groups will be directly impacted by the introduction of a Clean Bus Fund:</p> <ul style="list-style-type: none"> • Bus Operators who are operating non-compliant buses (with engines lower than Euro 6 diesel specification) across the whole of Greater Manchester. • TfGM, specifically in relation to the routes that the organisation is responsible for subsidising the services 	<p>Low income households on average spend a greater share of their budget on transport, so are likely to be more sensitive to changes in public transport cost/availability. Where bus operators do not apply for funding assistance or meet CAZ deadlines, there is a risk that increased costs are passed down to users, resulting in negative impacts on low income households. This also applies to disabled residents who are more dependent on affordable and accessible transport.</p> <p>SMEs who work as bus operators may be able to benefit from the fund. Smaller operators on rural routes could be negatively impacted, where any increase in cost could affect the viability of maintaining a service on those routes.</p> <p>The BAME community make the highest percentage of trips by local bus compared to all other ethnic groups suggesting potential for disproportionate impacts on this group (DfT, 2017).</p> <p>There is potential for the impacts on public transport operators to be greater in Option 5 as more restrictions on car use will increase demand for public transport, increasing company revenues.</p>	

Vehicle Renewal Scheme - Clean Bus Fund

Classification: Project / Cost: £30m

Component	Policy Design	Consultation	Customer	Technology
Component Description	Confirm rationale of retrofit / renewal Identify supplier Confirm policy for compliance	Potential consultation elements for the fund depending on the outcomes from the Policy Design component.	Customer facing elements of the fund including items such as managing applications, awards and validation (if required) managing queries and complaints. The development of the Customer component during the Design phase will be essential for establishing the requirements for the Technology component.	The technology elements of the fund including the establishment of the systems to manage the customer elements.

Phase Component	Design	Implementation	Operation	Decommissioning
Policy Design	TfGM	N/A	N/A	N/A
Consultation	TfGM	N/A	N/A	N/A
Customer	TfGM	TfGM	TfGM	TfGM
Technology	TfGM	TfGM	TfGM	TfGM

Dependencies
<p>Internal Dependencies:</p> <ul style="list-style-type: none"> • Direction/output from Data, Evidence and Modelling workstream to identify the required shift in fleet composition to achieve compliance • Outputs from Bus capacity measures • Policy developed by Policy & Governance workstream and CAZ project • Associated cost dictated by the Finance workstream. <p>Intra Dependencies:</p> <ul style="list-style-type: none"> • Increases to Public Transport Capacity • Bus Reform Project <p>External Dependencies:</p> <ul style="list-style-type: none"> • Funding from JAQU • Public feedback during FBC and consultations • Feedback from Bus community on proposed Clean Bus Fund • Market capacity to undertake retrofits

Vehicle Renewal Scheme - Clean Bus Fund

Classification: Project / Cost: £30m

Stakeholder Engagement	
TfGM and the GM CAP Project Team have met bus operators through OneBus (GM Bus Trade Operating Body) and during evening briefing sessions. We have also contacted them in order to ascertain fleet data.	
Benefits Register	
Benefits Evaluation Process	Achievement of the Euro VI standard – evidence suggests that Selective Catalytic Reduction devices can reduce NOx emissions by 88% on older vehicles which suggests that a Euro IV vehicle’s NOx emissions could be reduced to the Euro VI requirement, but Euro III vehicles would be reduced to 0.6g/kWh which would be close to, but not within, the required limit.
Description	As above
Service Feature	Reduction in NOx from buses on Greater Manchester roads
Costs	As above
Activities Required to Secure Benefit	As per component description
Responsible Officer	Head of Bus (TfGM)
Performance Measure	% of compliant buses
Target Improvement	100% fully compliant
Timescale	As above

Sustainable Journeys
Classification: Work Package / **Cost:** £9m

6.3 Sustainable Journeys

Sustainable Journeys is a package of engagement and education measures and incentives targeted using behavioural insights techniques and data to a range of different audiences designed to influence and enable a shift to more sustainable transport options. It adds value to the overall Clean Air Plan package by providing practical and targeted assistance to facilitate behaviour change, filling the gap between the wider communications activities and infrastructure / regulatory measures in order to lower emissions.

Category

The Sustainable Journeys would

- Help people and businesses to switch to a cleaner mode of transport

Rationale

Crucial to the success of the GM CAP will be ongoing communications activity to help the residents and businesses of Greater Manchester understand the nature of the air quality challenge and what action they can take to reduce emissions. Evidence suggests that awareness of air quality issues is growing, but people are still confused as to what poor air quality means, where pollution comes from and what solutions would be effective.

Initial research, including focus groups, was carried out in summer/autumn 2018 around perceptions of air pollution in Greater Manchester. This demonstrated that there was a fundamental lack of understanding of the causes and awareness of air quality issues.

The outputs from this research highlighted the need to raise awareness and understanding of air pollution as a health issue through public campaign activities. An initial phase of activity was delivered during autumn 2018, "lets clear the air" campaign.

NICE guidance on outdoor air quality and health (NG70) recommends taking a number of actions in combination, because multiple interventions, each producing a small benefit, are likely to act cumulatively to produce significant change. Addressing fleets, driver training, increasing walking and cycling, and awareness raising are recommended by the guidance, and are all included in our package. The Sustainable Journeys element concentrates on the individual and community approaches to behaviour change, complementing the packages other elements of infrastructure, restrictions and general marketing. The guidance specifically suggests giving businesses information on how they can reduce road-traffic-related air pollution and improve fuel efficiency.

The Sustainable Journeys package is a support programme of targeted, effective education, promotional, influencing and enabling measures and incentives to help people and businesses understand how they will be affected by air quality and the GMCAP and how best they can adapt in order to reduce their NOx emissions.

Key stakeholders have been identified who either are responsible for exceedances of air quality thresholds and cost-effective to target with intensive behaviour change measures, or who are affected by poor air quality. These include:

- Major fleet operators, within and outside Greater Manchester
- Smaller fleet / SME vehicles within Greater Manchester
- Major receivers of deliveries in Greater Manchester, e.g. warehousing, hospitals
- Larger trip generators, e.g. retailers, universities / education, hospitals
- Major employers (over 500 employees), or located in city and town centres and industrial parks, e.g. Trafford Park. Includes those coming from High Peak and Cheshire
- Commuters to city and town centres, airport and industrial parks
- School pupils / parents / teachers to schools adjacent to exceedance areas
- Residents in areas of high trip generation or poor air quality such as town and city centres

Sustainable Journeys

Classification: Work Package / Cost: £9m

Sustainable Journeys have experience of applying the key measures successfully, but the Clean Air funding is necessary both to develop and include specific air quality content and focus, and to increase the scale of activities to a level we consider is necessary in order to make the necessary level of impact on air quality at areas of exceedance achieve compliance. Key measures include:

- Personal Travel Planning (PTP) is a demonstrably effective techniques for residents and employees to encourage sustainable travel choices and vehicle purchasing decisions. This will be targeted at residents and businesses in air quality hotspots, and include bespoke information and incentives relating to their particular journeys and preferences.. This is a technique that TfGM has been using successfully for five years, but increased funding would be required to increase the numbers of people receiving advice, and to incorporate air quality specific content.
 - Between March 2014 and October 2018, the PTP programme delivered over 21,000 personal travel plans to employees, students, residents, apprentices and jobseekers. The phases of the programme consistently achieved mode shift from single occupancy car use towards more sustainable modes, and that shift ranged between 2% to 14% of participants dependent upon the phase.
 - Residential PTP, which was delivered extensively between 2014 and 2016 engaged almost 20,000 residents, delivered a mode shift from single car occupancy to more sustainable modes of between 2% and 11% of trips (depending on the phase), and PTP was a significant factor in these changes in 50%-90% of cases.
- Through the Business Travel Advice service, expert advice, toolkits and incentives will be made available for workplaces to offer travel planning interventions to encourage and enable sustainable travel choices, inform vehicle purchasing decisions, purchasing, consolidation and freight practices. This will include grants to help businesses improve their sustainable travel offer, for example by providing cycle parking. Evaluation of the LSTF project demonstrated that TfGM's Travel Choices business travel behaviour change programme achieved the following outcomes at surveyed businesses:
 - a 24% reduction in staff who drive to work alone for five days a week or more (from 46% to 35% of commuters);
 - 8% of employees changed from driving to a more sustainable mode;
 - the number of employees who never drive to work alone increased by 75%, from 24% of employees to 42%;
 - Our recently appointed AQ Delivery Officer (funded for 12 months through Early Measures Bid) has recently executed an inaugural 'Experience Electric Event' at Salford University's MediaCityUK campus with over 80 people attending from 37 organisations from across the public and private sectors, 76 driving an electric vehicle and 10 organisations interested in signing up to an Energy Savings Trust fleet review;
 - Increased funding for this activity would enable an increased level of support, including specific reference to the air quality problem, to be targeted at more businesses in, or contributing to, areas of poor air quality.
- Travel planning, events, classroom activities including mapping, challenges, air quality monitoring and other engagement activities will also be targeted at schools and families in areas of poor air quality and with high car use on the journey to school, to help increase awareness of air quality impacts, increase the use of sustainable travel (particularly walking and cycling) for students, parents and staff on their journeys to and from school, and reduce exposure for children. These types of techniques have been proven to be effective, for example TfGM's Road Safety Partnership and Living Streets 2017/18 WOW achieved a 30% increase in Modal Shift and 56% decrease in car journeys. Funding would be essential to introduce a much wider programme of engagement twenty times more extensive than currently.

As suggested by the NICE guidance, the programme will be closely allied to other measures in the Clean Air Plan and other programmes (particularly the Made to Move cycling and walking infrastructure programme and Schools Street closures) in order to get the best value from

Sustainable Journeys
Classification: Work Package / **Cost:** £9m

synergies between measures. For example, early impacts of the Edinburgh schools Schools Streets pilot (closing streets to traffic at pick up / drop off or more permanently) demonstrated;

- daily vehicle volumes on school streets reduced by an average of 454,
- An average reduction of 74.5g/km in NO_x emissions across 21 monitoring sites on School Streets.
- Students getting to school by car reduced by an average of 6%
- Students walking to school increased by 3%, and
- 'park and stride' students also increased by 3%

Cost (including OB/Contingency)	Top Risks	Procurement Route
£9m over 10 years	1) Sustainable Journeys offerings does not receive the desired uptake following targeted communications campaign.	It is intended that this project/work package is managed by TfGM providing services in respect of business engagement, school and education engagement and community engagement, all to support communicating the message of sustainable journeys. Potential procurement route through GM Charities.
Group Impacted		Distributional Analysis
<p>The following target groups have been identified as having significant impact on air quality, affected by the CAZ, and able to be cost-effectively engaged by Sustainable Journeys behavioural change techniques:</p> <ul style="list-style-type: none"> • Major fleet operators, within and outside Greater Manchester • Smaller fleet / SME vehicles within Greater Manchester • Major receivers of deliveries in Greater Manchester, e.g. warehousing, hospitals • Town and city centre receivers of deliveries, e.g. retailers, universities / education, hospitals • Major employers, esp. those over 500 employees, or located in city and town centres, airport, Trafford Park. Includes those coming from High Peak and Cheshire • Commuters to city and town centres, airport, Trafford Park • School pupils / parents / teachers to schools adjacent to exceedance areas • Students in Manchester City Centre and other town centres • Visitors to Manchester City Centre 		<p>This measure could result in reduced costs to low income households if positive engagement results in increased uptake of sustainable transport modes which are cheaper than current transport methods.</p> <p>For SMEs and LGV operators, there is potential for increased affordability if the engagement strategy results in the consolidation of freight practices and smarter green vehicle purchasing decisions which ultimately reduce costs for the company. The impact is likely to be greater in phase 2 when LGV operators are required to comply to CAZ standards.</p> <p>There is unlikely to be any benefit for disabled people without targeted engagement to help with bespoke personal travel planning which meets the needs of the individual.</p>

Sustainable Journeys
Classification: Work Package / **Cost:** £9m

Component Description	Business Engagement (including public and third sector)
	<p>Targeted behaviour change interventions to encourage active and sustainable travel choices for commuters, business trips and deliveries. These include bespoke sustainable travel action plans to tackle a business’s unique travel problems influencing green vehicle purchasing decisions, purchasing, consolidation and freight practices enabling modal shift to cleaner modes, or retiming in order to reduce congestion responsible for higher pollutant concentrations.</p> <p>Initiatives are developed and delivered using behavioural insight techniques to maximise effectiveness, and include Personal Travel Planning with bespoke messaging and incentives, sustainable travel grants for businesses, signposting to fleet reviews and driver training, car sharing, increasing access to bikes and other supporting walking and cycling interventions and flexible working.</p> <p>Uptake of the measures will be maximised through the use of targeted incentives such as discounted/subsidised ticketing for employees, and the popular TfGM business travel accreditation scheme,</p>
	School and Education Engagement
	<p>Behaviour change interventions, tailored to the needs of pupils, their families/guardians and staff, to help reduce exposure for children, and increase active and sustainable travel modes and reducing car use. Interventions will include:</p> <ul style="list-style-type: none"> • Lessons with groups of up to 30 KS2 children covering air quality impact, mitigation, and promotion of shift to cleaner modes, particularly walking and cycling, production of clean air maps and • Campaigns to raise awareness particularly of parents and carers • Air pollution action plans in each school • Travel champions • Promotion and incentives to encourage pupils to walk and cycle to school rather than being driven • Parents focus groups • Sustainable travel grants for supporting measures such as cycle parking <p>Similar behaviour change interventions such as the Living Street WOW (promoting walking at primary schools) have delivered modal shift (see evidence in Rationale section above).</p> <p>These behaviour change measures will be complemented by activities in other programmes in order to maximise impact, including the Bee-Network, filtered neighbourhoods, ‘Schools Streets’ closures, school bus provision and Modeshift Stars (which includes monitoring and accreditation elements).</p>
	Community Engagement
	<p>Targeted behaviour change interventions to encourage sustainable travel choices, and influence greener vehicle purchasing decisions, targeted at residents in air quality hotspots who are most likely to be receptive (using ACORN profiling and ‘sales-funnel’ market analysis techniques). Initiatives including targeted advice and incentives through residents personal travel planning and working with community groups to promote low-emission modes and community led ‘Open Streets’ programmes where residents can close their streets to realise the benefits of cleaner air and a safer environment for walking and cycling. This will also be linked to the Made to Move infrastructure programme, particularly the introduction of ‘filtered neighbourhoods’ where vehicular traffic is restricted.</p>

Sustainable Journeys
Classification: Work Package / **Cost:** £9m

Phase Component	Design	Implementation	Operation	Decommissioning
Business Engagement (public and 3 rd sector)	TfGM	TfGM	TfGM	N/A
School and Education Engagement	TfGM	TfGM	TfGM	N/A
Community Engagement	TfGM	TfGM	TfGM	N/A

Dependencies
<p>Internal Dependencies: Clean Air Plan communications, stakeholder engagement and consultations</p> <p>Intra Dependencies:</p> <ul style="list-style-type: none"> • Electric Vehicles promotion and charging infrastructure Early Measures project • Public health and awareness campaigns associated with Air Quality • Congestion Deal • Made to Move - output from Greater Manchester-wide walking and cycling infrastructure proposal (Bee Network) to influence modal shift to cycling and walking <p>External Dependencies: Funding from JAQU to provide cycling and walking infrastructure</p>
Stakeholder Engagement
Ongoing engagement as part of Sustainable Journeys work.

Sustainable Journeys
Classification: Work Package / **Cost:** £9m

Benefits Register	
Benefits Evaluation Process	Not modelled
Description	As above
Service Feature	Increasing use of Sustainable Travel Options
Costs	As above
Activities Required to Secure Benefit	As per component description
Responsible Officer	Head of Sustainable Journeys TfGM
Performance Measure	<p>This is a wide ranging programme so possible indicators include:</p> <ul style="list-style-type: none"> • Number of Delivery and Servicing Plans developed with businesses • Number of fleet reviews • Changes in vehicle types over time • Changes in mode split of commuters or by EV use/awareness • Changes in flexible/home working in businesses with 500+ staff • Number of Personal Travel Plans • Change of mode and awareness following Personal Travel Plans
Target Improvement	To be developed in FBC
Timescale	As above

Electric Vehicle Infrastructure and Promotion

Classification: Project / **Cost:** £25m from implementation fund and £11m Operating costs.

6.4 Electric Vehicle Infrastructure and Promotion

<p>Electric Vehicle (EV) Infrastructure and Promotion proposes to deliver 300 additional Rapid Charging Points (Dual Headed) across Greater Manchester, including a proportion ring-fenced for taxi and private hire vehicles (PHVs) only.</p> <p>In addition to the charging points, TfGM would deliver a targeted marketing and engagement campaign with Greater Manchester businesses and residents that will showcase the benefits of EVs, highlight the support that is available and provide an opportunity for EVs to be compared across a range of suppliers.</p>		
<p>Category</p>		
<p>The Electric Vehicle Infrastructure and Promotion would:</p> <ul style="list-style-type: none"> • Help people and businesses to switch to a cleaner mode of transport 		
<p>Rationale</p>		
<p>At present many potential purchasers of EVs are discouraged by concerns about the practicality of charging an EV, amongst other factors. Therefore, investing in the required infrastructure is critical in increasing the numbers of EV within Greater Manchester and reducing the 'range anxiety'.</p> <p>The EV Infrastructure and Promotion initiative proposes 300 additional rapid charging points (dual headed) across the ten Local Authorities of Greater Manchester, including some for taxis/PHVs only.</p> <p>Modelling projections conducted for the GM CAP shows that with the additional infrastructure and supporting measures being implemented would lead to approximately 68,000 EVs (passengers) and 7000 E-LGV to be registered in Greater Manchester by 2021. On the basis of the number charge points assumed below this gives a ratio of 71 EVs per each publicly available charge point.</p> <p>The supporting communications programme will deliver events such as experience days that will showcase the benefits of electric vehicles and highlight the support available. They will allow people to compare EVs from a range of suppliers, and 'try before you buy'.</p>		
<p>Cost</p>	<p>Top Risks</p>	<p>Procurement Route</p>
<p>£25m from Implementation Fund and £11m Operating costs, including OB/contingency, nominal prices, total 2021-28</p> <ul style="list-style-type: none"> • Purchase, installation, connectivity to the grid of the Electric Vehicle Rapid chargers • TROs and projects costs to manage the implementation • Communication and marketing campaigns • Annual operational costs of c.£1m per annum to cover the maintenance and repairs of the infrastructure as well as staff costs to operate. 	<ol style="list-style-type: none"> 1) EV uptake is lower than predicted 2) Sites identified don't get desired uptake or use 3) Capacity of electricity network to support proposed scheme 	<p>Design implementation and operation to follow the same contractual route as the EV early measures project, which is currently undertaken by TfGM as the GMEV EVCI Project</p> <p>Various promotional activities to be undertaken by a range of third parties.</p> <p>Legal Advisor provider to provide support for the TROs.</p>

Electric Vehicle Infrastructure and Promotion

Classification: Project / **Cost:** £25m from implementation fund and £11m Operating costs.

Group Impacted	Distributional Analysis
<ul style="list-style-type: none"> • Car and taxi/private hire • LGV users • Commuters 	<p>Low income households are less likely to be able to afford EVs and experience the direct benefit of this measure in the absence of further support measures. There could be an increased negative impact on low income households in option 5 due to the likelihood that use of EVs for personal use will be too expensive for this group.</p> <p>For SMEs, there is potential for positive affordability impacts if the cost of upgrading vehicles to meet CAZ standards is higher than the cost of EVs (including running/maintenance), further encouraging the transition to this mode.</p>

Component	Policy Design
Component Description	Roll out of a further 300 charging units to follow on from Early Measures project that aims to deliver 48 charging points. Infrastructure and deployment strategy will have already been developed as part of Early Measures project.
Component	EV Infrastructure
Component Description	<p>Delivery of 300 additional Rapid Charging Units (dual headed) across Greater Manchester. The TfGM Early Measures project is identifying a range of sites and further feasibility / design work would be conducted as part of the CAP to identify and prioritise sites for delivery.</p> <p>The deployment of chargers would be split across all 10 of the Authorities of Greater Manchester to create a comprehensive network. This would be approximately 27 dual chargers in each Authority with an additional 27 dual chargers in the regional centre to account for use by taxis and increased travel demand. Within each borough, the chargers would be delivered in a number of clusters/hubs rather than being isolated on their own. Clusters of chargers will mean that EV users are more likely to find a vacant charger rather than have to wait or drive to find another charging point.</p> <p>Although the GM CAP investment in EV charging infrastructure would be a significant contribution to the required number of charge points, further investment would be required which could potentially be provided as part of the GMEV procurement exercise which is enabling commercial investment in the network. This is in addition to the OLEV taxi fund that was secured on 5th Feb 2019.</p> <p>Number of charge points assumed:</p> <ul style="list-style-type: none"> • GM CAP proposes 300 dual headed (600) • Early measures 48 • Existing GMEV 400 • Commercial points 400 • Total charge points 1448 • Number of EVs per charge point 71

Electric Vehicle Infrastructure and Promotion

Classification: Project / **Cost:** £25m from implementation fund and £11m Operating costs.

Component	Marketing Engagement and Experience Days
Component Description	Marketing, engagement with businesses/residents and experience events to showcase the benefits of electric vehicles, highlight the support available and allow people to compare EVs from a range of suppliers.

Phase Component	Policy Design	EV Infrastructure	Traffic Regulation Order	Consultation	Experience Days
Design Phase	TfGM	TfGM	Legal Service Provider	TfGM	TfGM
Implementation	N/A	GM EV Charging Infrastructure Operator	Legal Service Provider	N/A	TfGM
Operation	N/A	GM EV Charging Infrastructure Operator	Highway Authority	N/A	TfGM
Decommissioning	N/A	GM EV Charging Infrastructure Operator	Highway Authority	N/A	TfGM

Phase Component	Design Phase	Implementation Phase	Operation Phase	Decommissioning
Policy Design	TfGM	N/A	N/A	N/A
EV Infrastructure	TfGM	Greater Manchester Electric Vehicle Electric Charging infrastructure (GMEV ECI) Operator	Greater Manchester Electric Vehicle Electric Charging infrastructure (GMEV ECI) Operator	Greater Manchester Electric Vehicle Electric Charging infrastructure (GMEV ECI) Operator
Traffic Regulation Order	Legal Service Provider	Legal Service Provider	Highway Authority	Highway Authority
Consultation	TfGM	N/A	N/A	N/A
Experience Days	TfGM	TfGM	TfGM	TfGM

Electric Vehicle Infrastructure and Promotion

Classification: Project / **Cost:** £25m from implementation fund and £11m Operating costs.

Dependencies	
<p>Internal Dependencies:</p> <ul style="list-style-type: none"> • Early Measures project - output from EV charging points site identification exercise <p>Intra Dependencies:</p> <ul style="list-style-type: none"> • Early Measures project - output from public perception and Monitored and Evaluated uptake of EV • Campaign alignment with other GMCA and LA initiatives <p>External Dependencies:</p> <ul style="list-style-type: none"> • National EV Policy and incentives Public perception of EVs, accessibility for charging and reliability of vehicle • District Network Operator (DNO) approval and availability in network to power units 	
Benefits Register	
Benefits Evaluation Process	Modelling Results
Description	As above
Service Feature	Increasing use of EVs
Costs	As above
Activities Required to Secure Benefit	As component description
Responsible Officer	Advanced Solutions Manager TfGM
Performance Measure	Additional EVs
Target Improvement	75k EV registered vehicles in Greater Manchester
Timescale	2021

Parking Standards & Local Authority Parking

Classification: Business as Usual (BAU) / **Cost:** Not an implementation funding ask

6.5 Parking Standards & Local Authority Parking

Parking Standards and Local Authority Parking encompasses two key processes that can enable a mode shift to more sustainable transport options.

A parking standards review that incorporates new developments, with the aim of replacing minimum with maximums standards in high density, accessible locations. For example:

- A review of planning conditions to prevent disused land becoming parking sites in specific areas
- Conversion of long stay to short stay parking
- Enforcing conditions for existing licensed parking to reduce low cost parking offer
- Provide additional/priority parking
- Provide additional/priority parking for EVs in Local Authority public car parks and on controlled parking zones

In terms of Local Authority staff parking a review is to be undertaken on the provision of staff car parking and usage. The effort of Local Authorities is assumed to be a significant promoting force for the public.

Category

The Parking Standard and LA Parking would enable the Local Authorities to implement local plans that collectively impact on fewer people.

Rationale

These are measuring that Local Authorities can choose to undertake demonstrating their leadership and commitment to Clean Air objectives.

Cost

Not an implementation funding ask, though there will be a requirement of LAs to invest time and resource

Top Risks

- 1) Proposed parking standards are not accepted and implemented

Procurement Route

N/A – utilise existing Local Authority processes

Group Impacted

- Car drivers
- Commuters
- Visitors to Regional Centre
- Businesses
- Local Authority Workforce

Distributional Analysis

Low income groups would be affected the most.
An exception for disability parking must be included to prevent social exclusion.

Component	Design Phase	Implementation	Operation Phase	Decommissioning Phase
Policy Design	Local Authorities	Local Authorities	Local Authorities	Local Authorities
Parking Infrastructure	Local Authorities	Local Authorities	Local Authorities	Local Authorities

Parking Standards & Local Authority Parking

Classification: Business as Usual (BAU) / **Cost:** Not an implementation funding ask

Dependencies	
<p>Internal dependencies: Contributing to the GM CAP and associated measures to achieve compliance</p> <p>Intra Dependencies: Current private and public parking arrangements; planning conditions and approvals</p> <p>External Dependencies: Impact of challenge from private developers</p>	
Benefits Register	
Benefits Evaluation Process	To be developed in FBC
Description	As above
Service Feature	N/A
Costs	As above
Activities Required to Secure Benefit	As component description
Responsible Officer	Local Authority Specific
Performance Measure	N/A
Target Improvement	N/A
Timescale	N/A

Local Authority & Greater Manchester Fleet Upgrade

Classification: Work Package / Cost: £27m

6.6 Local Authority & Greater Manchester Fleet Upgrade

<p>The Local Authority Fleet Upgrade would upgrade the Local Authority and Greater Manchester family fleets to the lowest emitting vehicles. This will include all Local Authority operated cars/vans, refuse collection vehicles, HGVs, contracted services and the TfGM provided bus fleet.</p>		
Category		
<p>The Local Authority and Greater Manchester Fleet Upgrade would</p> <ul style="list-style-type: none"> • Enable the local authority to implement local plans that collectively impact on fewer people 		
Rationale		
<p>This measure is for GM Local Authorities only and based on their forecast investment from 2020 onwards to enable them to have compliant fleet by 2021 (TfGM fleet will be covered by the Clean Bus Fund measure).</p> <p>It is important that the Local Authorities demonstrate a positive example and take a leading position with regards to their own fleet and ensure that where technically possible it is fully compliant.</p> <p>Approximate 0.5% reduction in 2021 mass NO_x emissions in tonnes within the county relative to the do-minimum.</p> <p>Across the 26 crucial links (exceedances) identified and modelled, the same model run resulted in a range of reductions between 0% and 1.6%</p>		
Cost	Top Risks	Procurement Route
£27m including OB/contingency, nominal prices, total 2021-28	<ol style="list-style-type: none"> 1) Local Authority/Greater Manchester operational fleets compliancy 2) EV uptake is lower than demand analysis 3) Fleet compliance with Clean Vehicle Retrofit Accreditation Scheme (CVRAS) 	Procurement led by Local Authorities with coordination by TfGM
Process/Eligibility		
<p>Local Authority vehicles that are not compliant in 2021 would be eligible.</p> <p>Each Local Authority has a different contractual/commercial arrangement so detail on precise arrangements need to be developed within FBC.</p> <p>Need to confirm approach with blue light services.</p>		

Group Impacted	Distributional Analysis
<ul style="list-style-type: none"> • Local Authorities • TfGM • Potentially blue light vehicles 	<p>Disabled people are more likely to be reliant on community transport services (e.g. local link). There could be positive effects if this measure supports the ongoing delivery of Council-based services, meaning that this group do not need to pay for alternatives.</p> <p>Similarly, low income households are more reliant on public transport services. There will be positive effects if this measure supports the ongoing delivery of council run public transport services (buses etc.), without increased costs to the user.</p>

Local Authority & Greater Manchester Fleet Upgrade

Classification: Work Package / Cost: £27m

Phase Component	Design Phase	Implementation Phase	Operation Phase	Decommissioning Phase
Fleet Changes	Local / GM Authority	Local / GM Authority	Local / GM Authority	N/A

Dependencies	
<p>Internal Dependencies: Electric Vehicle Infrastructure and Promotion project: Clean Car Fund project; Sustainable Journeys Project</p> <p>Intra Dependencies: Early Measures Project- promotion and uptake of EVs and successful infrastructure</p> <p>External Dependencies: Funding provided by JAQU; Local Authorities/Greater Manchester Family to lead by example in their fleet.</p>	
Benefits Register	
Benefits Evaluation Process	Modelling Results
Description	Upgrade of Local Authority and Greater Manchester family fleets to lowest emission possible, including all Local Authority operated cars/vans, refuse collection vehicles, HGVs, contracted services and the TfGM operated bus fleet.
Service Feature	Change in fleet of Local Authorities and Greater Manchester family
Costs	None within bid
Activities Required to Secure Benefit	As component description
Responsible Officer	District Officer Specific
Performance Measure	% of Local Authority / Greater Manchester Family fleet compliant
Target Improvement	All Local Authority / Greater Manchester Family fleet compliant
Timescale	2021

Vehicle Renewal Scheme - Clean Freight Fund

Classification: Project / Cost: £59m

6.7 Vehicle Renewal Scheme - Clean Freight Fund

The establishment of a **Clean Freight Fund**, as part of the Vehicle Renewal Scheme, would offer local small, micro businesses, sole traders and the voluntary sector, registered in Greater Manchester, with a discount on the purchase of a compliant commercial vehicle from an approved supplier when scrapping a non-compliant vehicle or retrofitting to make compliant. Priority for funding will be based primarily on air quality impact such that the most polluting vehicles can be targeted.

Vans, minibuses, HGV, coaches would be in scope for this fund.

Category

The Clean Freight Fund would

- Help people and businesses to switch to a cleaner mode of transport

Rationale

LGV's account for 33% of the GM NO_x emissions in Greater Manchester (transport related) and HGV's 17%.

The goal of the Greater Manchester Clean Air Plan is to clean up the vehicle fleet travelling around Greater Manchester to reduce emissions from traffic. A Clean Air Zone category affecting buses, taxis, heavy and light goods vehicles across the region will provide a financial incentive to the owners of commercial vehicles to invest in cleaner vehicles. Greater Manchester believes that this process can be made more effective in terms of reducing emissions and fairer in terms of minimising socio-economic damage if it is supported by schemes offering financial support to businesses and self-employed workers based in Greater Manchester to help them upgrade their vehicles.

There are 11,000 non-compliant HGVs and 77,000 non-compliant LGVs in Greater Manchester.

Vehicle renewal schemes such as those proposed here offer a range of benefits:

- They bring forward emissions reductions prior to the introduction of CAZs:
- They ready the fleet for a CAZ, reducing the risk of unintended consequences and allowing earlier implementation:
- They mitigate the risk of damaging socio-economic impacts imposed by CAZ:

The proposed Vehicle Renewal Schemes will be delivered follows:

- **Businesses:** small and micro businesses based in Greater Manchester would have access to a Fund offering them an incentive to scrap or de-license in-scope non-compliant vehicles (a heavy or light goods vehicle, hackney cab or car registered as a private hire vehicle with one of the ten GM Local Authorities) and to replace them with a compliant vehicle, or to retrofit their vehicle to make it compliant.
- **Residents:** self-employed residents of Greater Manchester who own a heavy or light goods vehicle, hackney cab or car registered as a private hire vehicle with one of the ten Greater Manchester Local Authorities would have access to a Fund offering them an incentive to scrap or de-license in-scope non-compliant vehicles and to replace them with a compliant vehicle, or to retrofit their vehicle to make it compliant.

This fund will enable fleet operators switch to a cleaner mode of transport. Effective behavioural change will result from both charge base and locally delivered Vehicle Renewal and Loan Finance Schemes (See Section 1.7 of the Strategic Case).

Vehicle Renewal Scheme - Clean Freight Fund

Classification: Project / Cost: £59m

Cost	Top Risks	Procurement Route
<p>£59m Implementation Fund including optimism bias and inflation</p>	<ol style="list-style-type: none"> 1) Availability and affordability of compliant vehicles 2) Clean Air Funding is not adequately supported by HM Government 3) Fleet mix changes 	<p>Database / IT system to register and administer grants.</p> <p>Application process by which vehicle owners can apply for the fund (paper or electronic system).</p> <p>Potential procurement exercise for a Vehicle Renewal Partner (as detailed in the Commercial Case) to support with the administration of the fund.</p> <p>Management of the Fund will potentially form part of the scope of the Operating Body which will be defined at FBC.</p>
Process/Eligibility		
<p>For both businesses and residents, the schemes would be subject to a competitive application process, with funds allocated on the basis of a series of criteria, and prioritised in terms of the likely air quality benefit and socio-economic impact. In principle, priority would be given to upgrading the oldest and dirtiest vehicles, that are most likely to travel in areas suffering from poor air quality, and owned by those least able to upgrade them without support.</p> <p>The Vehicle Renewal Scheme will offer owners of older non-compliant vehicles that are registered within Greater Manchester an affordable incentive to scrap their vehicles. The Fund will be split into three sub groups covering light goods vehicles and minibuses; heavy goods vehicles and coaches; and taxis (hackney carriages and PHVs).</p> <p>Mechanisms for Obtaining a Compliant LGV Fleet</p> <ul style="list-style-type: none"> • The LGV Upgrade Fund would be subject to a competitive application process. • The Fund would be administered and managed by TfGM. • The fund would only be available to residents, businesses, charities and other third sector organisations who reside or are registered within Greater Manchester. • The fund would be available to access up until either: <ul style="list-style-type: none"> - All GM funding allocated as part of the Clean Air Plan is spent; or - One year following when NOx compliance will be achieved (in line with the timescales for which the operation of a Clean Air Zone will be funded). • Eligible non-compliant LGV must be scrapped on awarding of the upgrade fund – a series of approved scrappage companies based in GM will be identified and it will be the responsibility of TfGM officers to work with these companies to verify that the scrappage has taken place. <p>The fund will be put in place to ensure the process is fair, robust and transparent which would mean registered vehicle owners will have to demonstrate:</p> <ul style="list-style-type: none"> • Proof of a specified period of ownership; • Proof of residence or business location; • Proof of ownership. <p>In order to ensure that there is a sufficient incentive of the fund, non-compliant vehicle owners will be able to access a maximum of £4,300 (minimum Euro VI purchase cost).</p> <p>The Fund will be administered in the following two stages:</p> <ol style="list-style-type: none"> 1) A minimum price will be guaranteed for the trade in of every non-compliant LGV 2) A contribution value that will vary by Euro standard but will ensure that the £4,300 is available. 		

Vehicle Renewal Scheme - Clean Freight Fund

Classification: Project / **Cost:** £59m

It should be noted that LGV owners can utilise the fund to purchase more expensive compliant vehicles.

Mechanisms for Obtaining a Compliant HGV Fleet

Support to the HGV sector to upgrade to a compliant fleet needs to be flexibly delivered and available rapidly.

It should be noted that at present, there are no accredited retro-fit schemes in the UK for HGVs – although the lack of accredited retrofitting schemes may be as a result of a lack of demand in the current market.

Other cities developing Clean Air Plans have assumed a retrofitting scheme for HGVs would come to the market – this assumption has been shared and agreed with JAQU.

Estimated cost of a single HGV Retrofit is £10,000

There is a viable second hand market for compliant HGVs, as the Euro VI standard vehicles came onto the market in 2013.

The criteria principles would include proof of ownership and registration, with SME's prioritised over 1st 12 months. If funding has been prioritised from another city's migration fund this must be declared.

The following factors have been taken into account when estimating the financial support required:

Retrofitting of Existing Non-Compliant HGV – Approximately £15,000

Minimum Cost for Purchasing Euro VI HGV – Approximately £19,000

- Taking into account the above, owners of non-compliant vehicles will be able to bid for a maximum of £16,000 per vehicle.
- Companies are restricted to a total of three applications.

Group Impacted	Distributional Analysis
<ul style="list-style-type: none"> • Focus is on SME's/self employed individuals who operate freight vehicles 	<p>SMEs, which often operate to tight margins, low income sole traders and self-employed residents who own heavy or light good vehicles may struggle to afford to upgrade their vehicle or pay the charge. The clean freight fund can help these groups upgrade their vehicle and avoid the charge resulting in increased affordability in the long term.</p> <p>There is a risk that since the fund is based on a competitive application scheme, businesses that do not qualify for the fund will face increased costs which are unaffordable. For businesses, these costs could be passed on to local businesses or residents, resulting in increased impacts on low income households.</p> <p>For LGV users, costs are likely to fall disproportionately on private individuals rather than companies as private individuals are more likely to own a non-compliant LGV and are also less likely to be able to afford the CAZ charges.</p>

Vehicle Renewal Scheme - Clean Freight Fund

Classification: Project / Cost: £59m

Component	Policy Design	Consultation	Customer	Technology	Estates
Component Description	Policy design of the fund including items such as research, data collection and modelling to support the design and appraisal of the scheme and impacts assessments.	Potential consultation elements for the fund depending on the outcomes from the Policy Design component.	The customer facing elements of the fund including items such as managing applications, awards and validation (if required), managing queries and complaints. The development of the Customer component during the Design Phase will be essential for establishing the requirements for the Technology component.	The technology elements of the fund including the establishment of systems to manage the Customer elements.	The buildings, offices and facilities including the equipment and hardware required for the operation of the fund.

Phase Component	Design Phase	Implementation Phase	Operation Phase	Decommissioning Phase
Policy Design	Lead Advisor	N/A	N/A	N/A
Consultation	TfGM	N/A	N/A	N/A
Customer	TfGM	Delivery Agent	Operating Agent	Operating Agent
Technology	Lead Advisor	Delivery Agent	Operating Agent	Operating Agent
Estates	Lead Advisor	Delivery Agent	Operating Agent	Operating Agent

Dependencies

Internal dependencies:

Direction/output from Data, Evidence and Modelling workstream to identify the required shift in fleet composition to achieve compliance; Policy to be developed by Governance & Policy workstream; Associated cost developed by the Finance workstream

Intra Dependencies:

n/a

External Dependencies:

Funding from JAQU; Public feedback during FBC and consultations. Feedback from Freight Community on proposed Clean Freight Fund.

Stakeholder Engagement

Engagement through GM Freight Forum over a number of years. Online questionnaires to gain an understanding on issues such as Gas to Liquid.

Vehicle Renewal Scheme - Clean Freight Fund
Classification: Project / Cost: £59m

Benefits Register	
Benefits Evaluation Process	Modelling work
Description	As above
Service Feature	Fleet Changes on GM roads
Costs	As above
Activities Required to Secure Benefit	As per component description
Responsible Officer	Head of Logistics and Environment
Performance Measure	Use of non-compliant vehicles falls
Target Improvement	To be developed in FBC
Timescale	As above

Loan Finance

Classification: Project / **Cost:** - To be developed in FBC

6.8 Loan Finance

There is a political will to further assist groups of who may be adversely affected by the implementation of Clean Air Zone (CAZ). Depending upon the variant of CAZ selected this could include:

- Private Hire Vehicle Owners to upgrade to an EV or compliant vehicle
- Hackney Carriage Owners to upgrade to an EV or compliant vehicle
- LGV operators to upgrade to new compliant vehicles from recognised / approved dealers
- HGV Operators to upgrade to new compliant vehicles from recognised / approved dealers

In addition to centrally funded swappage or scrappage schemes which would be funded by JAQU, TfGM are looking at the possibility of defining and providing a supporting measure which would be to provide loans at preferential rates for those who are taking advantage of the Vehicle Renewal Scheme-this could be through a loan for a vehicle or subsidy of a lease plan, this would have to be determined at FBC stage and via consultation with those affected.

- For the purpose of this draft measure it is assumed that Bus operators would be out of scope for any preferential loans as they would be eligible for Bus Renewal scheme.

Category

The Loan Finance would

- Create an opportunity for people/businesses to borrow money at a preferential rate if they own/operate a vehicle that is affected by a CAZ and wish to upgrade the vehicle.
- Help people and businesses to switch to a cleaner vehicle.
- Running costs of vehicles should be reduced through more efficient engines and lower maintenance costs.

Rationale

Access to Capital

- GMCA can borrow money at lower rates through organisations such as PWLB/Treasury than banks accessing capital markets.
- If GMCA chooses to lend/subsidies the capital to people/businesses of Greater Manchester without adding (or keeping to a minimum) a commercial margin to the lending, it becomes a financially attractive proposition to an individual or business.
- GMCA would underwrite the loans and therefore be exposed to risk.
- An Financial Conduct Authority regulated 3rd Party would be required to administer the scheme and make the loan to customer.
- Loan secured against vehicle.
- The loan book or an alternative arrangement would need to be compliant with Islamic Finance rules to ensure equality-this can be done through ensuring loan agreement does not refer to interest rates or loans, but can have it called a rental agreement.

Issues to be Decided post OBC Submission

- Maximum term of the loan still to be determined, likelihood is it will be different across vehicle type to align with normal asset life, e.g. LGV 5 years and HGV 6 years.
- Deadline for when last loan can be approved-the scheme does not want to have an open loan book for a long period of time.

Loan Finance

Classification: Project / **Cost:** - To be developed in FBC

- Would this be a direct link to Vehicle Renewal Scheme i.e. first criteria for eligibility is application for vehicle renewal scheme.
- Criteria for creditworthiness to determine who/which businesses eligible.
- Loan could be structured to be to cover full cost of a vehicle, subsidise a lease vehicle or PCP (more likely to be attractive to small businesses).
- To access the loan finance scheme a vehicle owner must be prepared to scrap/swap their current vehicle for a pre agreed compliant type of vehicle.
- Capping number of loans to businesses and capping size of business.
- GMCA margin to be added to cost to customer to cover loan defaults and administration costs.
- Joint Air Quality Unit (JAQU) would fund the administration and arrangement fees; typical costs for this might be 1% to 1.5% of loan book value plus £100 annual admin cost per application and allocation of £200 to recover vehicle if loan defaults.

Key Decisions Required

- What is high level value of loan book GMCA will to provide?

Cost	Top Risks	Procurement Route
<p>Dependent:</p> <ul style="list-style-type: none"> • 1% to 1.5% on value of loan book; • assumed default rates; • 3rd party operational contract; • Annual admin per loan cost, • Marketing launch costs; 	<ol style="list-style-type: none"> 1) Loan Default-could be as high as 25% in some categories of loan and would need a suitable mitigation strategy 2) PHV driver potentially poor credit rating and may have limited access to loan. 3) State Aid issues. 4) GDPR-personal data breaches. 5) Arrangement would need to be Islamic Finance compliant to ensure equality of access 	<p>3rd party will be required to administer loans covering credit checks to recovering loan defaults and taking monthly payments.</p> <p>O&M contract will also potentially have to be procured.</p> <p>This will have to be competitively tendered-potentially contract will be between GMCA and third party.</p>

Process/Eligibility

Once a contract with a third party is procured to administer the loan scheme it is envisaged the 3rd party could have the scheme up and running within 3-4 months.

- 1) Eligibility criteria for credit worthiness would be completed via the 3rd party-business rules would need to be determined around what do they do with applicants rejected.
- 2) T&C within loan document need to provide insurance, including settlement figure.
- 3) Data protection will be key legal requirement for GMCA/3rd party supplier.
- 4) Type of vehicle and loan type would need to be determined in assessing credit worthiness.
- 5) Clarity on what happens at end of contract needs to be detailed i.e. hire purchase or PCP deal.
- 6) Is maintenance a compulsory part of the deal?

Loan Finance

Classification: Project / **Cost:** - To be developed in FBC

Group Impacted	Distributional Analysis
<ul style="list-style-type: none"> • Small Businesses • PHV/Taxi operators 	<ul style="list-style-type: none"> • Open to all businesses/individuals where business or vehicle is registered in GM.

Component	Policy Design	Consultation	Customer	Technology
Component Description	Confirm value of loan book and criteria for people to be approved for loans along with vehicle types and willingness of public purse to fund loan defaults.	Some form of conversation/consultation will be required to understand who will take offer up and how to structure e.g. loan for car or subsidy for lease?	Customer facing elements of the fund including items such as managing applications, approval of loans, what happens if rejected, what communications are required; who does customer think they are dealing with-3 rd party, TfGM, GMCA (i.e. branding) and validation (if required) managing queries and complaints and dealing with financial issues.	Reliant on 3 rd party systems and potentially some form of interface with GMCA/TfGM to pass over customers.

Phase Component	Design Phase	Implementation Phase	Operation Phase	Decommissioning Phase
Policy Design	TfGM / GMCA	TfGM / GMCA	TfGM / GMCA	N/A
Consultation	TfGM / GMCA	N/A	N/A	N/A
Customer	TfGM / Delivery Agent	TfGM / Delivery Agent	TfGM / Operating Body	N/A
Technology	TfGM / Delivery Agent			

Dependencies
<p>Internal Dependencies:</p> <ul style="list-style-type: none"> • Understanding from modelling the number of potential loans to be taken out; • Policy developed by Policy & Governance workstream. • Loan criteria agreed in conjunction with GMCA <p>Intra Dependencies:</p> <ul style="list-style-type: none"> • GMCA appetite for risk and loan book value • Mayoral priorities <p>External Dependencies:</p> <ul style="list-style-type: none"> • Funding from JAQU • Public feedback during FBC and consultations with HGV,LGV and PHV/Taxi owners

Loan Finance

Classification: Project / **Cost:** - To be developed in FBC

Stakeholder Engagement	
<p>None as of yet has been completed, but it is envisaged key stakeholders are:</p> <ul style="list-style-type: none"> • The Mayor • GMCA • Districts • JAQU • HGV,LGV and PHV/Taxi owners affected by CAZ • Banks providing underwriting/insurance services • 3rd party suppliers providing administration of loan scheme • Vehicle manufacturers. 	
Benefits Register	
Benefits Evaluation Process	To be decided but a key KPI would reference new/compliant vehicles swapped for non-compliant vehicles.
Description	To be developed in FBC
Service Feature	Reduction in NO2 from non-compliant vehicles.
Costs	As above
Activities Required to Secure Benefit	As above
Responsible Officer	TBC
Performance Measure	No of loans for vehicles removed from GM
Target Improvement	TBC
Timescale	TBC

Clean Air Zone

Classification: Work Package / **Cost:** £78m Implementation Fund & £163m Operating Costs

6.9 Clean Air Zone

Modelling has shown that a Clean Air Zone (CAZ) for commercial vehicles is required to deliver compliance in the shortest possible time in Greater Manchester.

The Clean Air Plan proposes a CAZ to be implemented across the Greater Manchester region in two phases as follows:

Phase 1 (assumed to be 2021): a Clean Air Zone Category B across the region, placing a daily penalty on the most polluting buses, taxis (Hackney cabs and private hire vehicles), Heavy Goods Vehicles (HGVs) and coaches if they travel into, within or through Greater Manchester.

Phase 2 (assumed to be 2023): expansion to a Clean Air Zone Category C across the region, placing a daily penalty on the most polluting Light Goods Vehicles (LGVs) and minibuses if they travel into, within or through Greater Manchester, in addition to those vehicles placed in scope under Phase 1.

No private cars would be affected by this proposal.

Vehicles travelling exclusively on the Highways England Strategic Road Network (SRN), travelling through the region without entering Greater Manchester, would also be unaffected by this proposal. This is because Greater Manchester's Authorities do not have the power to impose a scheme on the SRN.

Category

The Clean Air Zone will:

- Enable the local authority to implement local plans that collectively impact on fewer people

Rationale

Following implementation of a CAZ B (initial phases of CAZ C) in 2020, these are predicted to result in a 20% reduction of NO_x across Greater Manchester. The number of modelled point exceedances is reduced from 250 to approx. 70.

There is a predicted 75% reduction of NO_x by 2023 for the CAZ C scenario, and reduces the number of modelled point exceedances from 68 to 3.

The Economic Case details this in much greater detail.

Cost	Top Risks	Procurement Route
£78m Implementation Fund and £163m on Operating Fund	<ol style="list-style-type: none"> 1) Responses from the scheme design consultation(s) and through stakeholder/political engagement significantly impacting design, costs and schedule 2) Interface between local system and Defra's Central Charging System (CCS) is unclear and currently limited detailed scope 3) The scale of the proposed CAZ Information Systems infrastructure is significant and may cause unforeseen delays and additional costs associated with implementation 4) Availability and affordability of compliant vehicles 5) Drivers seek out alternative routes to avoid ANPR cameras 6) Liaising with other local authorities outside of Greater Manchester to put up CAZ signage in advance of entering a CAZ 7) Implementation of CAZ signage on Motorway Infrastructure - Strategic Road Network (SRN)" 	The Procurement Route is detailed in the Commercial Case of the OBC.

Clean Air Zone

Classification: Work Package / **Cost:** £78m Implementation Fund & £163m Operating Costs

Process/Eligibility

The boundary of the CAZ is subject to further technical review as part of the FBC, however at present it is proposed as the Local Authority boundary of Greater Manchester.

It is proposed that the CAZ will operate 24 hours a day, seven days a week, and will apply to trips made by in-scope vehicles into, within and through Greater Manchester (excluding trips made wholly on the SRN).

The level of the penalty will be confirmed subject to public and stakeholder engagement and further technical work. The indicative penalty levels that have been assumed for the purposes of modelling the impacts of the scheme are £7.50 per day for vans and minibuses; Hackney cabs and PHVs; and £100 per day for HGVs, coaches and buses.

If the penalty charge is not paid within the required time period – as an example, the London scheme allows payment in advance, on the day or until midnight the day after travel – a penalty charge notice would be incurred.

It is assumed that vehicle owners would be able to register their vehicle to simplify the payment process, but drivers will be required to proactively pay for each day they travel; an auto-pay system (where a charge is automatically applied to an account if a vehicle is detected by an enforcement camera) cannot be supplied by JAQU and is therefore not available for Greater Manchester.

Vehicles will never be required to pay more than once per day regardless of how many trips they make within the CAZ boundary. However, if a vehicle enters the GM-wide CAZ and also enters a CAZ or Low Emission Zone elsewhere in the UK they will be required to pay the local penalty charges for each CAZ. So, for example, if a non-compliant in-scope vehicle travelled from London to Greater Manchester on the same day, they would be required to pay all charges incurred in both regions.

As part of the detailed scheme design phase, Greater Manchester will be considering alternative payment options that could be more beneficial and efficient to customers without risking the principle of the scheme. Further work will be required as part of the engagement and consultation process with stakeholders to understand their needs and subsequent options.

Group Impacted	Distributional Analysis
Freight and servicing industries, taxi and private hire industry, bus and coach operators.	Impact on businesses, but potential to have large impact on small businesses and operators with older fleets. May result in costs being passed to customers in some industries, without effecting change.

Clean Air Zone

Classification: Work Package / **Cost:** £78m Implementation Fund & £163m Operating Costs

Component	Policy Design	Highway Infrastructure	Customer	Technology	Estates	Charging Scheme Order and TRO	Consultation
Component Description	<p>Scheme and policy design of the CAZ including discounts and exemptions. Including items such as research, data collection and modelling to support design and appraisal, and impacts assessments (socio-economic, equalities, environment).</p>	<p>The highway infrastructure elements of a CAZ including items such as signage, road markings, changes to highway layout (including statutory undertakers information and diversions, if required).</p> <p>The infrastructure elements of the ANPR cameras will also be covered in this component including items such as detailing exact locations of ANPR cameras, poles, camera installation, power and data ducting.</p>	<p>The customer facing elements of a CAZ including items such as managing discounts and exemptions, maintenance of the white list, managing queries and complaints, issuing of penalty charges. The development of the Customer component during the Design Phase will be essential for the development of the Technology component.</p>	<p>The technology elements of a CAZ including items such as the ANPR cameras, the systems to manage the Customer elements, including the interface with the Government payment portal.</p> <p>The technology elements of the ANPR cameras covered in this component including items such as specifying ANPR cameras, power and data cabling and connections.</p> <p>The technology elements of the equipment and hardware required for the operation of a CAZ are included in this component</p>	<p>The buildings, offices and facilities including the provision of equipment required for the operation of a CAZ.</p>	<p>The Charging Scheme Order (CSO) and any Traffic Regulation Order(s) (TROs) required for the implementation and operation of a CAZ.</p>	<p>Consultation related to the TROs</p>

Clean Air Zone

Classification: Work Package / **Cost:** £78m Implementation Fund & £163m Operating Costs

Phase Component	Design	Implementation	Operation	Decommissioning
Policy Design	Lead Advisor	N/A	N/A	N/A
Highway Infrastructure	Lead Advisor	Delivery Agent	Operating Agent	Operating Agent
Customer	Lead Advisor	Delivery Agent	Operating Agent	Operating Agent
Technology	Lead Advisor	Delivery Agent	Operating Agent	Operating Agent
Estates	Lead Advisor	TfGM	Operating Agent	Operating Agent
Charging Scheme & TRO	Legal Service Provider	Legal Service Provider	Operating Agent	Operating Agent
Consultation	TfGM	N/A	N/A	N/A

Dependencies	
<p>Internal Dependencies: Vehicle Renewal Schemes (Clean Bus/Freight/Taxi Funds), Electric Vehicle (EV) Infrastructure and Promotion</p> <p>Intra Dependencies: Impact on air quality from other Greater Manchester schemes/initiatives</p> <p>External Dependencies: JAQU CCS for processing and payment</p>	
Stakeholder Engagement	
<p>There have been a number of focus groups conducted with the public which introduced the themes of air quality and the benefits and constraints of the CAZ principles.</p> <p>We have also conducted wider stakeholder engagement where the CAZ principles have been discussed.</p>	
Benefits Register	
Benefits Evaluation Process	To be developed in FBC
Description	As above
Costs	As above
Activities Required to Secure Benefit	As component description
Responsible Officer	Head of Logistics and Environment TfGM
Performance Measure	Reduction in non-compliant vehicles
Target Improvement	To be developed in FBC
Timescale	To be developed in FBC

Vehicle Renewal Scheme - Clean Taxi Fund

Classification: Project / Cost: £28m

6.10 Vehicle Renewal Scheme - Clean Taxi Fund

The **Clean Taxi Fund** would offer Greater Manchester registered taxi and private hire drivers support to upgrade their non-compliant vehicles

The establishment of a Clean Taxi Fund would offer taxi and private hire drivers a discount on the purchase of a compliant vehicle from an approved supplier when trading in a non-compliant taxi. It will also provide funding for the retrofitting of taxis.

It should be noted that the scheme would only be open to vehicles and drivers licensed within Greater Manchester. Over the past three years, the number of licenses has been falling; it is believed that this reflects the increasing tendency for drivers to license out of region but operate within the region. It is likely that the introduction of the Clean Air Zone - which will offer better terms including access to this vehicle renewal scheme - will act to reverse this trend.

Category

The Clean Taxi Fund would

- Help people and businesses to switch to a cleaner mode of transport

Rationale

The goal of the GM CAP is to clean up the vehicle fleet travelling around Greater Manchester to reduce emissions from traffic. A Clean Air Zone category affecting buses, taxis, heavy and light goods vehicles across the region will provide a financial incentive to the owners of commercial vehicles to invest in cleaner vehicles. Greater Manchester believes that this process can be made more effective in terms of reducing emissions and fairer in terms of minimising socio-economic damage if it is supported by schemes offering financial support to businesses and self-employed workers based in Greater Manchester to help them upgrade their vehicles. Effective behavioural change will result from both charge base and locally delivered Vehicle Renewal and Loan Finance Schemes (See Section 1.7 of the Strategic Case).

Vehicle renewal schemes such as those proposed here offer a range of benefits:

- They bring forward emissions reductions prior to the introduction of CAZs:
- They ready the fleet for a CAZ, reducing the risk of unintended consequences and allowing earlier implementation:
- They mitigate the risk of damaging socio-economic impacts imposed by CAZ:

The proposed Vehicle Renewal Schemes will be delivered via a 'Clean Air Fund for GM', offering support to in-scope businesses and residents as follows:

- **Businesses:** small and micro businesses based in Greater Manchester would have access to a Fund offering them an incentive to scrap or de-license in-scope non-compliant vehicles (a heavy or light goods vehicle, hackney cab or car registered as a private hire vehicle with one of the ten GM Local Authorities) and to replace them with a compliant vehicle, or to retrofit their vehicle to make it compliant.
- **Residents:** self-employed residents of Greater Manchester who own a heavy or light goods vehicle, hackney cab or car registered as a private hire vehicle with one of the ten GM Local Authorities would have access to a Fund offering them an incentive to scrap or de-license in-scope non-compliant vehicles and to replace them with a compliant vehicle, or to retrofit their vehicle to make it compliant.

For both businesses and residents, the schemes would be subject to a competitive application process, with funds allocated on the basis of a series of criteria, and prioritised in terms of the likely air quality benefit and socio-economic impact. In principle, priority will be given to upgrading the oldest and dirtiest vehicles, that are most likely to travel in areas suffering from poor air quality, and owned by those least able to upgrade them without support.

Vehicle Renewal Scheme - Clean Taxi Fund

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The vehicle renewal scheme will offer owners of older non-compliant vehicles that are registered within Greater Manchester an affordable incentive to scrap their vehicles. The Fund will be split into three sub groups covering light goods vehicles and minibuses; heavy goods vehicles and coaches; and taxis (hackney carriages and PHVs).

There are currently around 9000 private hire and 2000 non-compliant hackney cabs and private hire vehicles licensed within Greater Manchester. These vehicles are not an even distribution across the conurbation, and can be observed using regular routes and congregating in urban areas, such as rail stations.

Taxis and Private Hire Vehicles provide an important transport function for Greater Manchester, providing a service supplementing the public transport network.

Modelling Results

Following implementation of a Clean Taxi Fund and in the initial phases of the CAZ, these are predicted to result in a c. 1-2% reduction in NO_x across Greater Manchester.

Cost	Top Risks	Procurement Route
£28m Implementation Fund, including optimism bias and inflation	<ol style="list-style-type: none"> 1) Availability and affordability of compliant vehicles 2) Clean Air Funding is not adequately supported by HM Government 3) Fleet mix changes 4) Proposed scheme is not economically attractive 	<p>Database / IT system to register and administer grants.</p> <p>Application process by which vehicle owners can apply for the fund (paper or electronic system).</p> <p>Potential procurement exercise for a Vehicle Renewal Partner (as detailed in the Commercial Case) to support with the administration of the fund.</p> <p>Management of the Fund will potentially form part of the scope of the Operating Body which will be defined at FBC.</p>

Process/Eligibility

Clean Taxi Fund is divided into two elements:

- Hackney Carriages (or equivalents)- designed to provide financial support towards upgrading to a zero emission capable taxi, purchased via an approved supplier; and
- Private Hire Vehicles (PHVs). The Private Hire element of the fund is designed in a similar way to the Car Fund by calculating an average value of vehicle and then applying an upgrade premium.
- The Fund will be subject to a competitive application process.
- The Fund would be administered and managed by TfGM on behalf of the 10 Districts.
- TfGM will facilitate financial transactions with the organisation selling the compliant vehicle.
- TfGM will assume responsibility for the monitoring and reporting of the fund to JAQU.
- Funds to be applied in 6-monthly cycles in line with Vehicle Criteria Principles.
- The Fund will target the most polluting vehicles as a priority.
- If there is remaining funding at December 2021, applications from vehicles operating in GM but not necessarily registered in GM could be considered.
- To ensure that taxi/private hire owners have the maximum time available to upgrade their non-compliant vehicle, the Upgrade Fund should operate as a programme, with funding available from December 2019.

Vehicle Renewal Scheme - Clean Taxi Fund

Classification: Project / Cost: £28m

- Early uptake of compliant LGVs may mean the removal of exemptions may become necessary if air quality improves more quickly than anticipated.
- Fund would be available to access up until either:
 - 1) The whole GM allocated funding pot has been distributed to non-compliant taxi/private hire drivers
 - 2) One year following when NOx compliance will be achieved (in line with the timescales for which the operation of a Clean Air Zone will be funded).

It is anticipated that £2,000 is made available for GM based private hire drivers and £5,000 for GM based taxi drivers. The process should be for locally based drivers and should support GM minimum standards.

Group Impacted	Distributional Analysis
<ul style="list-style-type: none"> • Taxi and Private Hire Vehicle Owners • Drivers • Customers • Operators 	<p>For taxis, Hackney Carriages are required to be wheelchair-adapted. The cost of wheelchair adapted vehicles is higher than other vehicles. In the absence of support, taxi drivers may otherwise face disproportionately higher costs to upgrade to a CAZ compliant vehicle which could be passed on to users.</p> <p>People with a high level of health deprivation typically have lower average household income. The cost of upgrading wheelchair adapted private vehicles is higher, making them particularly vulnerable to increases in the costs of private transport services and private car travel.</p> <p>There is a high BAME representation amongst PHV owners suggesting impacts could be unevenly experienced by this group (Policy Exchange, 2017).</p>

Vehicle Renewal Scheme - Clean Taxi Fund

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Component	Policy Design	Consultation	Customer	Technology	Estates
Component Description	<p>Policy design of the fund including items such as research, data collection and modelling to support the design and appraisal of the scheme and impacts assessments.</p> <p>The funding will be applied to three segments of the taxi trade depending on the age, compliance status and accessibility standard of their current vehicle.</p> <p>The measures are designed to tie in with proposed uniform licensing standards.</p> <p>Financial support is targeted at taxi drivers as the requirements for compliant replacement vehicles.</p> <p>No support is currently provided for PHV owners as barriers to compliant vehicles are low.</p> <p>Policy design of the fund including items such as research, data collection and modelling to support the design and appraisal of the scheme and impacts assessments."</p>	<p>Potential consultation elements for the fund depending on the outcomes from the Policy Design component.</p>	<p>The customer facing elements of the fund including items such as managing applications, awards and validation (if required), managing queries and complaints.</p> <p>The development of the Customer component during the Design Phase will be essential for establishing the requirements for the Technology component.</p> <p>Vehicles under 8 years old (in 2021) will be encouraged to either retrofit to LPG or can utilise funds for replacement.</p> <p>Vehicles between 9 and 17 years old in 2021 will be offered support to replace with a compliant vehicle.</p> <p>Vehicles 18 years or older will be expected to scrap "</p>	<p>The technology elements of the fund including the establishment of systems to manage the Customer elements.</p> <p>Liquid Petroleum Gas (LPG) is a viable alternative to diesel as it can significantly reduce both NOx and PM to below EURO 6 levels and it has a lower carbon content reducing CO2 emissions.</p> <p>Black cabs have their diesel engine replaced with a dual fuel petrol /LPG engine.</p>	<p>The buildings, offices and facilities including the equipment and hardware required for the operation of the fund.</p>

Vehicle Renewal Scheme - Clean Taxi Fund

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Phase Component	Design Phase	Implementation Phase	Operation Phase	Decommissioning Phase
Policy Design	Lead Advisor	N/A	N/A	N/A
Consultation	TfGM	N/A	N/A	N/A
Customer	TfGM	Delivery Agent	Operating Agent	Operating Agent
Technology	Lead Advisor	Delivery Agent	Operating Agent	Operating Agent
Estates	Lead Advisor	Delivery Agent	Operating Agent	Operating Agent

Dependencies

Internal dependencies:

Direction/output from Data, Evidence and Modelling workstream to identify the required shift in vehicle to achieve compliance in Clean Air Zone project; Policy developed by Policy & Governance workstream; Associated cost dictated by the Finance workstream.

Intra Dependencies:

n/a

External Dependencies:

Funding from JAQU; Public feedback during FBC and consultations; Feedback from taxi community; links with Greater Manchester Licensing project

Stakeholder Engagement

A series of workshops with the industry took place with the industry in late summer 2018 to identify potential options for upgrade and renewal.

Benefits Register

Benefits Evaluation Process	Modelling
Description	As above
Service Feature	Fleet Changes on GM Roads
Costs	TBC
Activities Required to Secure Benefit	As per component description
Responsible Officer	Head of Logistics Environment
Performance Measure	Number of non-compliant vehicles falls.
Target Improvement	TBC
Timescale	TBC