

Table 2-1 Critical Success Factors

Rank	Critical Success Factor	Description
Primary	CSF1 – NO ₂ Compliance	Reduction of local air pollutant NO ₂ (and other substances including PM10, PM2.5) concentrations to below the EU Limit Values
	CSF2 – Timescale / Feasibility	Ability to be delivered at least as quickly as a charge-based clean air zone could
Secondary	CSF3 – Policy Fit / Acceptability	Extent of fit with current UK/Greater Manchester policies and/or strategies
	CSF4 – Cost of Compliance	Welfare impacts and costs to users
	CSF5 – Affordability	Cost to Government of implementation, operation and decommission
	CSF6 – Environmental	Extent to which wider air quality and local environment is improved; including reductions in carbon emissions
	CSF 7 – Health	Extent to which health is improved

2.2.4 The selection process shown in Figure 2-1 describes the three step process to identifying a preferred option (the preferred package). These are:

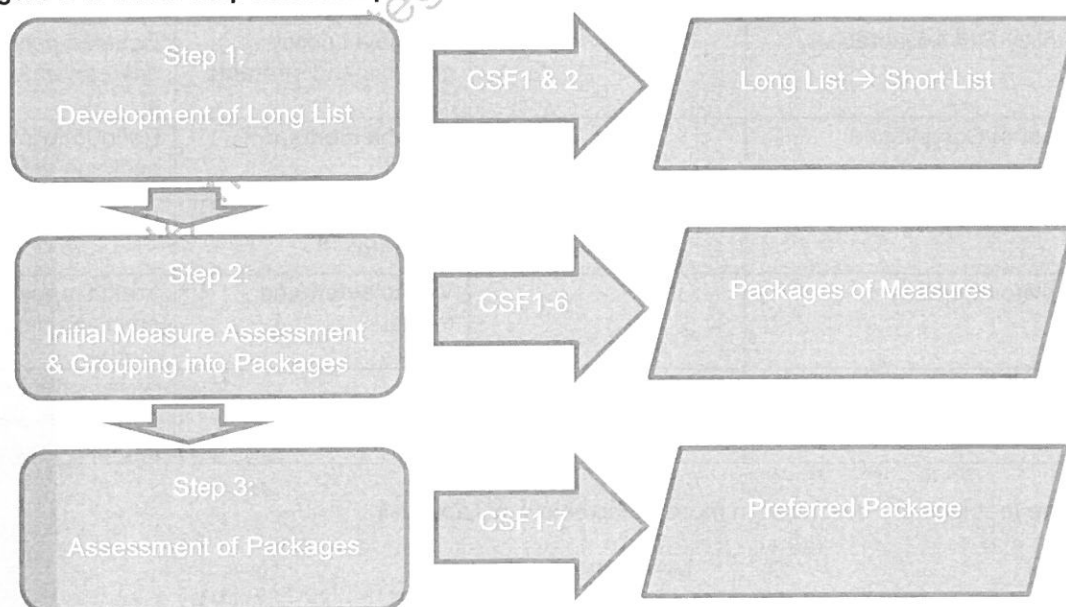
Step 1: Refinement of long list of measures (96) down to short list of measures (17), using two criteria of:

- CSF1 - NO₂ Compliance; and,
- CSF2 - Timescale / Feasibility.

Step 2: Initial assessment and further screening of short list measures and grouping to develop packages of measures.

Step 3: Conduct assessment and modelling on the packages of measures in order to identify the preferred package.

Figure 2-1: Three-step selection process



2.2.5 The selection process is currently at Step 1 and details of this step are provided in Section 2.4, Sifting Process. The selection process is also in the very early stages of Step 2 and details of this (and Step 3) will be included in the OBC, when a preferred package is determined. TfGM will work with JAQU to help define the assessment criteria to be used in Steps 2 and 3.

2.2.6 The option selection process depends significantly on the outcome of the Target Determination process which will define the areas of focus and concentration reductions required. The initial evidence to start this process is planned to be submitted to JAQU in February 2018 and the process is due to be determined by the end of March 2018. Air quality monitoring and natural fluctuation due to climatic/weather conditions may impact problem definition, as well as uncertainty and inter-year variability in traffic and uncertainty in emissions calculations. For this reason, a flexible approach to option selection will be taken. It is expected that multiple iterations of Steps 2 and 3 may be required.

2.3 Derivation of Assessment Criteria

2.3.1 Critical Success Factors 1 and 2 have been adapted into assessment criteria in the form of metrics that are specific and measureable. Critical Success Factors 3 to 7 will be developed into metrics during Step 2 and therefore the 'Metric' column shown in

2.3.2 Table 2-2 (for CSFs 3 to 7) shows the CSF. The 'Method' columns describe the methods that are expected to be used to sift the measures, develop the packages of measures and identified the preferred package. The methods become increasingly complex as the process progresses through the steps.

Table 2-2: Assessment Criteria – Metrics and Methods

CSF	Metric	Method		
		Long → Short List (Step 1)	Short List → Package (Step 2)	Package Assessment (Step 3)
1	Potential for significant reduction to NO ₂ at determined target locations	Qualitative impact score	Variable demand model	Traffic model and emission / dispersion model
2	Ability to be delivered at least as quickly as a charged based clean air zone could	Yes/No deliverability assessment	Initial assessment of delivery dates	Detailed assessment of delivery dates
3	Policy Fit / Acceptability		High level policy analysis and strategic fit	Detailed policy analysis and strategic fit
4	Cost of Compliance		Variable demand model	Refined following local package development
5	Affordability		Indicative cost estimate	Detailed cost estimate
6	Environmental		Variable demand model	Traffic model and emission dispersion model
7	Health			Assessment of population-weighted exposure reduction

2.3.3 The methods are described in more detail below in Table 2-3.

Table 2-3: Description of Assessment Methods

Method	Description
Qualitative impact score	A high-level assessment of the extent to which a measure is likely to impact air quality. This score was given on a 5-point scale with 0 = no impact, 1 = minimal impacts, 2 = small impact, 3 = medium impact, 4 = high impact, 5 = very high impact. This assessment was made based on professional judgement and a score of 3 or above represents a pass.
Variable demand model (VDM)	The variable demand model describes a model that is being designed to better understand how measures will impact on the GM transport network. The demand model will sit alongside the existing GM Strategic Model to estimate any changes to travel behaviour following iterative output journey costs generated by the implementation of measures.
Traffic model and emissions / dispersion model	The packages of measures may take the outputs from the above VDM and use a traffic route assignment model to estimate traffic flows, which will then be modelled to analyse air quality impacts.
Yes/No deliverability assessment	A high-level assessment based on professional judgement to determine whether the measure could be delivered at least as quickly as a charged based clean air zone could.
Assessment of delivery date	High level/detailed estimates of delivery timescales based on other relevant projects and professional judgement.
Policy analysis	High level/detailed desktop-based policy research and analysis.
Refined following local package development	Method of assessment will be determined once the detail and scope of the individual measures and packages of measures are defined.
Cost estimate	High level/detailed estimates of costs based on other relevant projects and professional judgement.
Assessment of population-weighted exposure reduction	Assessment of population percentage gaining health benefits.

2.3.4 In addition to the above methods a set of parallel workstreams are envisaged to inform a more robust assessment of the preferred package (at Step 3). These additional assessments are:

- Health Impact Assessment;
- Environmental Impact Assessment;
- Transport Impact Assessment;
- Business and Economic Impact Assessment;
- Equality Impact Assessment; and,
- Risk Assessment.

2.3.5 The key data sources for the development of the long list of measures used in Step 1 of this process includes information considered from the following:

- GM Air Quality Action Plan
- Data shared from Birmingham City Council
- Birmingham City Council website
- Ricardo Evidence Review of measures 2014 (Edinburgh, Richmond, York)
- AQ Plan 2015 West Midlands UK0035 and AQ Plan 2017 West Midlands UK0035
- Birmingham Connected Technical Package 1, 2, and 3
- UK Air Quality Plan 2017

- TfWM website
- Ongoing testing by HE/DfT on GtL as an alternative fuel
- Delivery Plan 2026 for Transport
- NICE guideline on Air Pollution: outdoor air quality and health
- Leicester integrated traffic management research
- Blueprint for low carbon fuel infrastructure
- West Yorkshire LES
- TfGM Charge-based CAZ initial feasibility work 2017

2.4 Sifting Process

- 2.4.1 During Step 1, certain assumptions have been made as to the transferability of information from experience or studies from another context (e.g. Birmingham clean air feasibility). It has been generally assumed that the methodology of applying learning from elsewhere is sound. These assumptions have not been made explicit, and the assessors have used their best judgement to apply knowledge from elsewhere to the context of Greater Manchester. The analysis has also been done with the knowledge gained from the TfGM charge-based CAZ feasibility work conducted earlier in 2017.
- 2.4.2 A long list of 96 measures was identified as potential interventions that could either be implemented in isolation or as a package of measures to support the delivery of the project spending objectives. The measures were identified through desk-top research or other cities and input from a range of stakeholders. These measures were grouped into 12 categories as shown in Table 2-4 below (full list appears in Appendix D):

Table 2-4: Intervention Categories

Number	Category	Description
1	Clean Air Zone	Charge-based zones of different vehicle classes and geographies
2	Financial	Subsidy schemes, incentives, tax exemptions
3	Education / Awareness	Publicity, engagement, non-charge-based CAZ
4	Planning	Planning (developer) requirements, pedestrianisation
5	Business	Reward schemes or mandates that impact private businesses
6	Cycling & Walking	Active travel infrastructure, skills/training, cycle share
7	Parking	Parking provision and pricing, park & ride
8	Public Transportation	Public transport infrastructure, bus emissions standards or retrofitting, car sharing, concession fares, route restrictions
9	Alternative Fuel Infrastructure	Infrastructure to support uptake of non-petrol/diesel vehicles
10	Traffic Control Infrastructure	Traffic management strategies and infrastructure
11	Freight	Consolidation centres, permitting / restrictions
12	Taxis	Incentives / infrastructure to encourage transition to alternative / cleaner vehicles

- 2.4.3 The long list was reduced to 22 measures through the objective process of applying the metrics that correspond to CSF1 and CSF2 (as set out in Table 2-5), using the following methods:
- Qualitative impact score; and,
 - Yes/No deliverability assessment.
- 2.4.4 A rationalisation exercise was then undertaken to combine any co-dependent measures and expand the detail of the measures related to the emerging Congestion Plan; resulting in a short list of 17 measures.
- 2.4.5 The sifting process to reduce the measures to a short list of 17 was undertaken by TfGM officers with technical guidance from the Technical Lead (Jacobs). The outputs were subsequently reviewed by the Local Authorities (via the Steering Group).
- 2.4.6 The resulting short list of 17 measures are listed in Table 2-5.

Table 2-5: Short List of Measures

Measure	Prioritised List	Description
CAZ (as required by Government)		
Charge-based CAZ - Class B or C; different geographical boundaries / time restrictions	Charge-based CAZ	Class B includes bus, coach, taxi/PHV and HGV. Class C includes the above plus LGV
Charge-based CAZ - Class D; different geographical boundaries / time restrictions	Charge-based CAZ	Class D includes all of Class C plus car
Parking		
Differential parking charges	Primary Measures	Related to usage/capacity (e.g. different charges for times of day to reduce congestion) and vehicle type (e.g. free for electric or reduced for car sharers or for emission standard/engine size) and/or workplace parking levy
Public Transport		
Retrofitting or upgrade of public transport fleet and introduction of stringent emissions standard through contracts or partnership	Primary Measures	Retrofitting of public transport fleet to cleaner alternatives. Set stretching targets to improve the efficiency of fleet and specify emission standards in bus contracts
Increase capacity of public transport on specific routes	Secondary Measures	
Infrastructure - Alternative Fuels		
Switch bus, HGV/LGV depot fuelling stations or GM fleet to GtL	Primary Measures	Use of GtL fuel as a diesel alternative. (If Public Transport retrofit is standard measure then would not need GtL for commercial bus but could apply to community transport)
LGV – EV incentivisation	Primary Measures	Funding of electric, petrol, GtL at source
Improve Local Authority fleet to electric/LPG/low emission through a procurement policy	Secondary Measures	

Measure	Prioritised List	Description
Infrastructure - Traffic Control		
Congestion Plan traffic management – increased capacity	Secondary Measures	Providing more capacity – Review of existing junction improvement plans. Assess existing schemes to understand potential benefit on specified links; with a view to bringing schemes forward sooner
Congestion Plan traffic management – encouraging alternatives	Secondary measures	Encouraging alternative travel choices – Road space reallocation in order to suppress latent demand released through implementation of other measures
Congestion Plan traffic management – network management	Secondary measures	Signal optimisation – changes to traffic signal timing to optimise flows in order to reduce congestion on specified links
Taxis		
Incentives for private hire vehicles to change to EV vehicles. Installation of rapid EV infrastructure for taxi and private hire vehicles.	Primary Measures	Incentivise private hire vehicles to changes to EV/ULEV vehicles through reduced licence fees/ free top up at taxi charge points
Retrofitting of black taxis to LPG/Euro 6. Increase LPG refuelling infrastructure for Hackney Carriages	Secondary Measures	Retrofitting of black taxis to LPG/Euro 6
Non-charge based CAZ awareness activities		
Communications campaigns/awareness raising of health and cost benefits of different modes or around a particular community/schools	Secondary Measures	Communications campaigns/awareness and signage
Travel choices programme (businesses & individuals)	Secondary Measures	Dependent on scale of programme
Active travel programme – engagement	Secondary Measures	
Cycling & Walking		
Active travel programme – infrastructure	Primary Measures	Including provision of measures to enable travel to PT hubs and for short journeys

NB – Primary measures are those which are considered to have the potential to meet CSF1 & 2 as individual measures. Secondary measures are those which may not meet CSF 1 & 2 individually but could as part of a package.

2.5 Next Steps

- 2.5.1 At present, the long to short list sifting of measures has been completed. A variable demand model to assess the shortlisted measures is being constructed to assist in Step 2. In addition, the JAQU Options Appraisal Guidance will be reviewed and may result in further updates to the process and methodologies contained in this document.
- 2.5.2 Step 2 (as set out in Figure 2-1) is ongoing and the methodology will continue to be developed. The implementation of Steps 2 and 3 are dependent on the outcome of the Target Determination process, and will be carried out once the Target Determination is complete.
- 2.5.3 Some preliminary work has been done on the methods to apply the Primary and Secondary CSFs to the short list of measures. The methods expected to be used in Steps 2 and 3 to assess the measures are shown in Section 2.3, Deviation of Assessment Criteria.

2.5.4

As per JAQU guidance, in Steps 2 and 3 all options will be compared against a do-minimum scenario, and at least one of the options will be a charge-based CAZ (the reference case as required by Government) designed to achieve CSF1 and CSF2 in the shortest time possible. The definition of the charge-based CAZ and do-minimum scenario are ongoing, and also dependent on Target Determination.

GM Clean Air Strategic Outline Case – Submitted in March 2018

3. The Financial Case

3.1 Introduction

- 3.1.1 This Financial Case presents a high level range of costs for the measures to inform the analysis in Step 2 (development of the packages of measures) as described in the Economic Case. The information contained in this section of the SOC is intended to be used to inform the decision making process. There is a degree of uncertainty around the costs as the scope of the measures are yet to be fully defined and therefore the cost estimates are very high level and might vary considerably as further feasibility work is undertaken. The cost ranges presented here will be refined in future iterations of the business case.
- 3.1.2 At this stage in the business case only Step 1 of the selection process, sifting from a long list to a short list of measures, has been completed. Costs have therefore not been included in this sifting process as Step 1 only considers CSF 1 & 2.
- 3.1.3 All that can be provided at this stage is an indicative low/medium/high/very high rating for costs to implement and operate. These will help inform package creation in Step 2. Further work in terms of feasibility and design will be required to fully develop the cost forecasts, and this will be undertaken in the next stages of business case development as the packages of measures are assessed.

3.2 Financial Situation and Funding Sources

- 3.2.1 A review of the potential funding sources is ongoing and involves discussions with JAQU. At this initial stage a high level review of the funding sources (Appendix H) has been undertaken to provide an initial indication of the range of funding options that may relate to each of the shortlisted measures. This is by no means exhaustive and funding source identification and analysis will be developed as the shortlisted measures and packages of measures are developed.
- 3.2.2 As shown in Appendix H, it is expected that the implementation and operation of all the measures with the preferred package will be funded by Government through one or more of the grant funding streams. It is assumed that demobilisation costs for the measures within the preferred package which are only implemented for the duration of the exceedance will be funded by Government.

3.3 Affordability

- 3.3.1 The costs to implement each measure make up Critical Success Factor 5 (CSF5) – Affordability, as set out in Section 2, The Economic Case. The metric being applied to measure this CSF is the cost to implement and operate the measures, including any future renewals and decommissioning. The indicative costs estimated here fit into Step 2 – the definition of packages of measures from the short list of measures. Step 2 has not yet been undertaken in full, the following section provides an initial view on approximate costs to implement and operate for each of the 17 short list measures, but no further analysis relies on these estimates.

3.4 Costing

- 3.4.1 Table 3-2 contains the early estimates (compiled by the project team and the Technical Lead, based on previous project experience), for the short list of measures on a basis of low/medium/high/very high costs to the Government for implementation and operation. The costs of measures are based on the criteria set out in Table 3-1.

Table 3-1: Cost Estimate Bands

Implementation Costs		Annual Operating Costs	
Low	£0 - £2 million	Low	£0 - £0.5 million
Medium	£2 million – £5 million	Medium	£0.5 million - £1 million
High	£5 million - £15 million	High	£1 million - £2 million
Very High	£15 million +	Very High	£2 million +

- 3.4.2 Decommissioning, risk and contingency have not been included, but will be evaluated and included in future estimates as the business case develops.

Table 3-2: Estimated Costs for Short List of Measures

Measure	Cost to Implement	Cost to Operate (annual)
CAZ (as required by Government)		
Charge-based CAZ - Class B or C; different geographical boundaries / time restrictions	Very High	Assumed Net Revenue
Charge-based CAZ - Class D; different geographical boundaries / time restrictions	Very High	Assumed Net Revenue
Parking		
Differential parking charges	Medium	Low - Very High
Public transport		
Retrofitting or upgrade of public transport fleet and introduction of stringent emissions standard through contracts or partnership	Very High	Medium
Increase capacity of public transport on specific routes	Very High	High
Infrastructure - Alternative Fuels		
Switch bus, HGV/LGV depot fuelling stations or GM fleet to GtL	Medium	Very High
LGV – EV incentivisation	Medium	Medium
Improve Local Authority fleet to electric/LPG/low emission through a procurement policy	Very High	Low - Medium
Infrastructure - Traffic Control		
Congestion Plan traffic management – increased capacity	Low - Very High	Low
Congestion Plan traffic management – encouraging alternatives	Low - Very High	Low - Medium
Congestion Plan traffic management – network management	Low - Medium	Low

Measure	Cost to Implement	Cost to Operate (annual)
Taxis		
Incentives for private hire vehicles to change to EV vehicles. Installation of rapid EV infrastructure for taxi and private hire vehicles	Medium	Low
Retrofitting of black taxis to LPG. Increase LPG refuelling infrastructure for Hackney Carriages	Low - Medium	Low
Non-charge-based CAZ awareness activities		
Non-charge based CAZ - signage and publicity	Medium	Low
Communications campaigns/awareness raising of health and cost benefits of different modes or around a particular community/schools.	Low	Very High
Travel choices programme (businesses & individuals)	Low	Very High
Active travel programme - engagement	Low	Very High
Cycling & Walking		
Active travel programme - infrastructure	Low - Very High	Low

3.5 Next Steps

- 3.5.1 The next steps for the Economic Case rely on further feasibility and design work to be undertaken to provide initial cost estimates in monetary terms. This will be determined once packages of measures have been defined and assessed which is ultimately dependent on the completion of the Target Determination process. The next steps will also include costing of charge-based CAZ options (the reference case as required by Government).

4. The Commercial Case

4.1 Commercial Viability

4.1.1 The range of measures proposed for the GM Clean Air Plan present a number of challenges, however the measures (or elements of) are previously tested commercial propositions and none of the measures are dependent upon either monopolistic or restricted supply arrangements. The shortlist of measures have been assessed from a commercial perspective and all of the shortlisted measures either:

- Fall in to the realm of being very similar to projects that TfGM have delivered from the market previously, or;
- Are measures that are not unique and therefore there are a wide number of market participants who could potentially be contracted for the measure of elements thereof.

4.2 Procurement Strategy

4.2.1 TfGM is an organisation which is almost wholly dependent upon delivery by third parties for the services it delivers to the citizens of Greater Manchester and the day to day operation of these. Depending upon the capital programmes being undertaken, TfGM spends in the region of £300m per annum with third parties. TfGM has a well-earned and valued reputation for delivering procurements and the subsequent contracts to time, cost and quality. The TfGM Procurement Department will be instrumental to the development of the detailed procurement strategies and the team is constructed as follow:

- **Head of Procurement** – to lead the procurement team and all TfGM procurement activity, reporting to the Finance and Corporate Services Executive Director;
- **Capital Procurement Team** – accountable for the capital category procurement including Civil Engineering and consultancy across TfGM;
- **Revenue Procurement Team** – accountable for a wide range of category procurement activity including Information Systems and supporting Bus Services; and
- **Procurement Process Team** – to lead development of procurement processes.

4.2.2 This established team has been responsible for managing the programme of capital and revenue expenditure, and can be supplemented by professional consultancy and interim resources as required to lead other major procurements.

4.3 Development of a Procurement Strategy

4.3.1 TfGM Procurement will establish an over-arching procurement strategy for all components of the GM Clean Air Plan ensuring that synergies are realised that will maximise both quality of delivery, speed of procurement and implementation together with value for money. Key aspects of this include:

- **Engagement** - TfGM Procurement has established a network of relationships across Greater Manchester that will facilitate effective dialogue to lead and review the development of this strategy, realisation of synergies and benefits and the identification and management of risks;
- **Collaborative Opportunities** – Working across both the delivery of the GM Clean Air Plan and other programmes within TfGM and GM to identify best practice, areas of synergy, risk and opportunity to introduce new or collaborative procurement activity, reviewing the bundles for each measure, timelines, major suppliers and commodities;
- **Contract Management** – Ensuring effective delivery and management of all delivery partner contracts, including oversight and audit of all contract management activities. Within each area an appropriate level of contract management resource will be established; and

- **Governance** – Ensuring that all procurement meets the necessary EU Procurement, TfGM and GMCA standards in respect of, procurement process, legislation, environment and social value.

4.3.2 In considering the commercial strategy for the GM Clean Air Plan, TfGM has considered an approach based on ease of implementation whilst delivering value for money across initial design stages, planning and development through to delivery, operation, as well as end-of-life considerations. The key roles that have been identified include:

- **Professional Advisors** – Suppliers of professional services associated with package design and implementation; and
- **Contractors** – Suppliers that are contracted by TfGM to deliver the preferred package.

4.3.3 Commercial strategies will be negotiated for delivery of the preferred package, which will establish an intelligent balance of risk and incentives between the key commercial relationships.

4.4 Sourcing Options

4.4.1 Initial analysis has shown that TfGM will likely utilise a wide range of sourcing options to deliver the schemes and components required to deliver the elements of the GM Clean Air Plan. Given the acute time line available for the delivery of the preferred package, the preferred route will be to utilise pre-existing framework agreements which provide compliance with the 2015 Public Contracting Regulations or if applicable the 2016 Utilities Contracting Regulations. TfGM will consider all pre-existing framework agreements that can be accessed including; TfGM and GM Local Authority Frameworks or other frameworks that are accessible to TfGM and the GM Local Authorities, Crown Commercial Service Frameworks and any other frameworks that are notified as accessible via Huddle. By exception TfGM would then look to tender requirements through the available sourcing routes as defined within the Procurement Regulations.

4.4.2 **Professional Advisors.** TfGM has developed and procured a Transport Professional Services Framework Agreement which went live in August 2016 and expires in August 2021. This framework will be the primary approach for sourcing professional advice and expertise on developing package viability, design and possibly implementation. The framework consists of 24 lots including multi-disciplinary, traffic engineering, transport network modelling, civil and structural engineering, programme and project management and environmental services. This framework facilitates access to 40 suppliers and offers sufficient strength to fulfil the professional advisors requirements for the GM Clean Air Plan. All work for professional advisors will be tendered using a standard 'mini-competition' approach. This approach allows TfGM to move at great speed from requirement to contract award, thus minimising timescales.

4.4.3 **Contractors.** Depending upon the specific requirement, TfGM envisages utilising a range of potential frameworks for delivering the preferred package. The use of pre-existing frameworks would be critical to the successful delivery of the GM Clean Air Plan as this approach allows the maximum flexibility to deliver the required procurement outcomes in the shortest possible time. The likely candidates for such frameworks would be:

- **Civil Engineering Works** - TfGM would primarily seek to use the Local Authority direct labour organisations and suppliers.
- **Minor Civils** - TfGM are in the process of letting a framework for minor civils to support the implementation of traffic signalling, CCTV and other services. This framework is known as the Ducting and Minor Highway Works Framework. Alternatively, TfGM have a secondary framework called the "TfGM Mechanical, Electrical and Building Maintenance Agreement" which could be utilised to deliver elements of the preferred package.
- **Information Systems** – For any IS requirements TfGM would seek in the first instance to utilise the CCS Suite of Framework Agreements including:
 - RM1089 – Traffic Management Technology 2;
 - RM1043 – Digital Outcomes and Specialist;

- RM1557 – G-Cloud;
- RM1045 – Network Services; and
- RM3733 – Technology Products 2.

4.4.4 In the event that any requirement of the GM Clean Air Plan could not be sourced through an available Procurement Framework then TfGM would look to competitively tender packages in a manner compliant with the Procurement Regulations. The Procurement Regulations specify a number of approaches of which the following in Table 4-1 would be the most likely to be utilised:

Table 4-1

Approach	Advantages	Disadvantages
Open	<p>All respondents must be invited to tender so the number of potential suppliers is increased.</p> <p>Given the potential complexity of the contracts under consideration it is concluded that this procedure would be inappropriate for most if not all of the likely procurements.</p>	<p>More tender responses require a large resource to evaluate, which will increase procurement cost and timescales.</p>
Restricted	<p>All respondents must pre-qualify to receive tender documentation which reduces the number of tenders to evaluate.</p> <p>Provides a time and cost effective manner of dealing with tenders for goods or services can be properly defined in advance.</p>	<p>No scope to negotiate with tenderers following receipt of bids</p>
Competitive Dialogue	<p>Flexible, allows contracting authority to discuss aspects of the contract with potential suppliers (e.g. where the technical scope is not fully defined, thereby encouraging greater innovation and proven build ability).</p> <p>Pre-qualification reduces the time and resources required to select suppliers.</p>	<p>Pre-qualification reduces the number of suppliers to select from.</p> <p>Dialogue may have several stages and the overall process may take a long time with the inherent associated costs.</p>

5. The Management Case

5.1 Governance

- 5.1.1 The seven Local Authorities have been directed by the secretary of state to produce the feasibility study identified in the Environment Act 1995 (Feasibility Study for Nitrogen Dioxide Compliance) Air Quality Direction 2017. Pursuant to section 85(7) of the Environment Act 1995 the Local Authority has a statutory duty to comply with that direction. The ten Greater Manchester authorities have a history of collaboration across a range of policy areas and this will be extended to the development of the GM Clean Air Plan feasibility study and the implementation and operation of the preferred package (the project). TfGM will lead on the project on behalf of GMCA under the statutory powers in relation to Air Quality. TfGM will coordinate the project, working closely to share ideas and get input from each of the ten LAs, as well as Highways England and Public Health England. Any solutions brought forward will be at a GM level and will see the relevant bodies working together.
- 5.1.2 TfGM has established processes and governance arrangements for the delivery of a wide range of projects and programmes. The lifecycle stages for the project and programme management procedures are shown in Appendix E. These arrangements will be utilised where appropriate and further arrangements will be established where it is beneficial to the delivery of the project.
- 5.1.3 The Project Team has been established, a Project Sponsor and Senior Responsible Officer (SRO) appointed, the Project Board and Steering Group established and the reporting and governance arrangements have been approved by the SRO. The organisational structure, including the governance and reporting arrangements for the feasibility study are shown in the organogram in Appendix F. In addition, the required approvals at the key stages of the feasibility study are shown on the Gantt Chart in Appendix K. These will be developed for the project overall as the packages of measures are developed.
- 5.1.4 The project governance has been established so that it will cover the whole of the project and it is not expected to change throughout the project, though additional governance stages and Local Authority approvals may need to be included within the overall governance depending on the preferred package.
- 5.1.5 The scope of each of the shortlisted measures have yet to be fully defined and it is therefore not possible at this stage to determine the exact management approach and structure for the stages of the feasibility study that are shown below the dashed line Appendix I (High Level Process Flow). Similarly it is not possible to determine the management approach past the feasibility study as this will depend on the preferred package selected. However, as TfGM has established processes and governance arrangements for the delivery of a wide range of projects and programmes, TfGM will be able to adapt to meet any future developing governance requirements. The high level process flow shown in Appendix I covers the activities up to and including the 'development' stages of the project (and programme) lifecycle shown in Appendix E. The project is currently being managed as a 'project' and an assessment will be made as the preferred package is developed to determine if the project should continue to be managed as a 'project' or if a 'programme' management approach should be applied.
- 5.1.6 For all projects (and programmes), TfGM undertake a Risk Potential Assessment (RPA) which provides a standard set of high-level criteria for assessing the strategic risk potential of projects. The RPA is an indicator of risk potential (not an exhaustive risk analysis model) and enables the risks and responsibilities for delivery of a project, and its visibility, reporting and assurance in a wider portfolio management context to be considered. At this current stage of the feasibility study the RPA concluded that the project is self-assessed using PMP lite and Gateway 3 (close out).
- 5.1.7 The RPA will be repeated after the packages of measures have been defined to determine if this assurance approach remains appropriate. The RPA will also be repeated at key stages throughout the project to ensure the most appropriate assurance approach is applied.

5.2 Go/No-Go & Decision Milestones

- 5.2.1 TfGM's Assurance Strategy is based on the application of the "four lines of defence" model (detailed in Appendix J). Integrated Assurance and Approval Plans (IAAPs) reflect and recognise all activities being undertaken across all Lines of Defence to provide a fully integrated approach to assurance.
- 5.2.2 An IAAP will be developed which will define all the assurance and approval requirements for the project. The IAAP will initially include the approvals for the key stages of the feasibility study that are shown on the Gantt Chart in Appendix K, but will be further developed when the packages of measures and preferred packages are defined. The required approvals / key decision milestones for the feasibility study are also summarised in the Governance Section of the organogram in Appendix F (Organisational Structure and Governance).
- 5.2.3 The assurance items will be further developed following the second RPA after the packages of measures have been defined, and then again at subsequent key stages throughout the project. The approvals and assurance activities related to the Early Measures Funding Proposals are not known at this stage and it is expected they will be specific to the released funding opportunities. The Gantt Chart and IAAP will be updated at the stage when the requirements are known.
- 5.2.4 For simplicity the approval process shown in Appendix F (Organisational Structure and Governance) shows the approval by the Steering Group as a single activity. This stage actually includes individual approvals by each of the ten Local Authorities who each have individual requirements and timescales for their own approval process. The Local Authority approvals are not shown in the Gantt Chart due to the complexity caused by the varying approaches; each Local Authority manages the required approval to align with the scheduled submission date to JAQU. This approach may be developed further as the preferred package is developed.

5.3 Project Programme

- 5.3.1 A Gantt Chart has been developed for the main activities of the feasibility study and is provided in Appendix K. It is not possible to develop a schedule past the feasibility study as this will depend on the preferred package selected.
- 5.3.2 The key milestones for the feasibility study are shown in Table 5-1 below:

Table 5-1: Key Project Milestones

Milestone	Forecast Date
Submit Evidence Methodology to JAQU	15 January 2018
Submit Early Measures Funding Proposal to JAQU	30 January 2018 (subject to call being opened)
Submit Strategic Outline Case (SOC) to JAQU	20 February 2018
Submit Initial Evidence to JAQU	6 March 2018
Submit Outline Business Case (OBC) to JAQU	10 August 2018
Commence Consultation (if required)	1 October 2018
Submit Full Business Case (FBC) to JAQU	12 April 2019

5.3.3 There is a higher degree of certainty related to activities above the dashed line in Appendix I, which corresponds to a higher degree of certainty to the related activities in the Gantt Chart. There is a lower degree of certainty related to the activities below the dashed line and the specific activities and durations cannot be determined until firstly the packages of measures are identified and then subsequently the preferred package is determined. The corresponding activities in the Gantt Chart are therefore indicative at this stage.

5.3.4 The schedule is reviewed as a minimum on a weekly basis to monitor progress and plan for forthcoming activities. Any required updates are made to the schedule following the weekly review.

5.4 Communication and Stakeholder Management

5.4.1 TfGM has an established Corporate Affairs department that includes teams specialising in:

- Policy development and alignment; and
- Stakeholder engagement and consultation.

5.4.2 TfGM has a track record in delivering successful communication and stakeholder management on a range of projects, including projects with extensive statutory consultation and public inquiry.

5.4.3 Members of the Corporate Affairs team have been allocated to the project to lead on the development of the communications and stakeholder strategy and plan. At this initial stage a high level stakeholder identification matrix (Appendix L) has been created to provide an initial indication of the range of stakeholders that may relate to each of the shortlisted measures. This is by no means exhaustive and stakeholder identification and analysis will be developed as the shortlisted measures and package of measures are developed. At that stage a range of tools and workshops will be used, reference documents (such as DfT Guidance on Local Transport Plans) will be considered, consideration will be given to stakeholders identified (and the process followed) for any previous similar projects, and legal advice will be sought to ensure all stakeholders for statutory consultation are identified.

5.4.4 The Stakeholder and Consultation Matrix in Appendix L illustrates the typical type of consultation that may be required. It is expected that for all of the shortlisted measures (which will be used to develop the packages of measures) targeted communication and engagement will be undertaken (as shown by the Targeted Stakeholder Engagement activity in Appendix L). At the outline design stage, wider consultation will be undertaken (as shown in the 'Wider Consultation Required' column and the 'Consultation on Outline Design' activity in Appendix L) which will inform the development of the detailed design of the preferred package and help to further align stakeholder requirements and expectations. Statutory consultation would then be undertaken on the detailed design for the preferred package (as shown in the 'Statutory Consultation Required' column in Appendix L and the 'Consultation for Powers and Consents' activity in Appendix L) to obtain any required powers and consents. The consultation requirements will also consider that TfGM are leading on the project on behalf of GMCA under the statutory powers in relation to the Air Quality (which sit with the Local Authorities pursuant to s82-s84 Part VI Environment Act 1995 and are conferred on GMCA concurrently with the Local Authorities under Article 10 of the Greater Manchester Combined Authority Order 2011). Some of the measures are likely to sit within the power of the individual Local Authority and it will be determined if the consultation can be run as a GM wide consultation on the preferred package or if any elements will need to be managed individually by the relevant Local Authority. Again the consultation requirements will be developed as the packages of measures are developed.

5.5 Project Reporting

5.5.1 The latest versions of the project management documentation will be provided at each of the business case submission stages to JAQU and at the Initial Evidence Submission stage.

5.5.2 The project and budget tracker tool provided by JAQU will be used to track the deliverability of key milestones for the feasibility study (both TfGM specific and JAQU deliverables) along with budget spend for the project. Progress will be monitored with the JAQU account managers and through regular project management meetings. The tracker tool will also identify the top highlights of the month and the top five risks to project delivery, as well as an overall project delivery and project budget RAG score. The tracker tool will be submitted once a month to JAQU who will use this to feed progress to their Programme Board and for progress updates to Ministers.

5.5.3 TfGM uses a range of tools to manage and monitor projects (and programmes), including Primavera P6 and SAP for example, and these will be used to provide the required information for the project and budget tracker tool provided by JAQU and for internal (and Local Authority) reporting purposes. Internal reporting within TfGM is identified in the 'Reporting' section of the organogram in Appendix F. Monthly project reports are produced and agreed with the Project Sponsor and cover; key indicator RAG status, critical issues and recovery, key milestone tracking, financial performance analysis, project management summary (challenges and actions, top monthly achievements and top goals for next period), risk management, health & safety, and lessons learned. Monthly project reporting reviews with senior members of the portfolio office, project, finance, procurement and legal teams (who are not directly involved in the project) enable an additional level of challenge and assurance to the project. These activities are identified in the first line of defence activities in Appendix J. Further reports will be drafted as required in accordance with the developing IAAP.

5.6 Risk Management Strategy

5.6.1 TfGM has a comprehensive Risk Management Policy and Strategy that is adopted and adhered to throughout the organisation, providing the assurance that the necessary controls are in place for delivery. The TfGM Risk Management Policy and Strategy has been prepared in accordance with TfGM's constitution and will be used to inform the project's Risk Management Plan.

5.6.2 A risk register has been developed for the SOC. Further risk workshops will be held during the Outline Business Case (OBC) and Full Business Case (FBC) stages to develop a Quantitative Risk Assessment (QRA) for the project overall, which will then include risks specific to the packages of measures and the preferred package respectively. Monthly reviews of the risk register will be undertaken. The risk register is provided in Appendix C.

5.6.3 The risks at this stage are generally at a higher level and relate to the following elements of the feasibility study only:

- The activities where there is a higher degree of certainty (those activities above the dashed line in Appendix I); and
- The high level management and development of the activities where there is a lower degree of certainty (those activities below the dashed line in Appendix I).

5.6.4 For the feasibility study the high level ownership of risk is as follows:

- **Funding** - The costs will be reassessed and updated at the Initial Evidence Submission and OBC stages, and finalised at FBC stage when increasing certainty of the costs can be provided. All costs for the feasibility study will be reimbursed by JAQU and therefore the funding risk for the feasibility study will be with JAQU.
- **Timescales** - The Local Authorities have a statutory duty to produce the feasibility study within the timescales identified in the Environment Act 1995 (Feasibility Study for Nitrogen Dioxide Compliance) Air Quality Direction 2017 and therefore the timescale risk will be with the Local Authorities. However subsequent discussion with JAQU has clearly identified that the approach intended by JAQU may not be achievable in Greater Manchester due to the complexities of the range of locations, contributing factors and approvals required across all ten individual Local Authorities and at GMCA.
- **Scope** - The Local Authorities have a statutory duty to produce the feasibility study including the required activities identified in the Environment Act 1995 (Feasibility Study for Nitrogen Dioxide Compliance) Air Quality Direction 2017 and therefore the scope risk will be with the

Local Authorities. However subsequent discussion with JAQU has identified the approach intended by JAQU will not be achievable in Greater Manchester due to the complexities of the range of locations, contributing factors and approvals required across all ten individual Local Authorities and at GMCA.

- 5.6.5 The funding, timescale and scope risks shall be developed further as workstream 4 is progressed. The procurement strategies for the design and implementation of the preferred package will consider where the risks are best placed and some risks relating to funding, timescale and scope may be placed on the supply chain if appropriate.

5.7 Monitoring and Evaluation

- 5.7.1 TfGM has an experienced internal team for the monitoring and evaluation of the project benefits and is able to draw on external support through existing frameworks as required. Resources have been included to develop the monitoring and evaluation plan for the project (the Benefits & Evaluations section of the Project Execution Plan), and as identified in Section 1.5 (specifically 'Measurement of Success'), this will be developed as the packages of measures and the preferred package is determined.

5.8 Project Management

- 5.8.1 The work to deliver the feasibility study has been split into six workstreams:

- WS1 - Scope & Assessment Method
- WS2 - Data & Evidence
- WS3 - Quick Wins
- WS4 - New Measures
- WS5 - Proposals and Business Cases
- WS6 - Communications & Engagement

- 5.8.2 Two further workstreams have been created for project management and the Technical Lead which will be ongoing throughout the study:

- WS7 – Project Management
- WS8 – Technical Lead

- 5.8.3 The table in Appendix M identifies the scope of work within each workstream for the feasibility study, and the teams who are involved in that workstream.

- 5.8.4 The high level process flow and the relevant associated workstreams for the feasibility study are shown in Appendix I.

- 5.8.5 The activities required to deliver the feasibility study may cover more than one workstream and some of the workstreams will run concurrently. A Gantt Chart has been developed for the main activities of the feasibility study (Appendix K). The Gantt Chart, in conjunction with the workstreams, have been reviewed and assessed using internal experience from similar activities and advice from the Technical Lead, to identify the resource requirements for the feasibility study. A table identifying the workstream(s) each activity is within and the resources / teams required to deliver each activity for the feasibility study, is provided in Appendix G.

- 5.8.6 The work for the feasibility study will be delivered internally by TfGM with the exception of the Technical Lead (WS8), external legal support, the provision of ANPR data, installation of diffusion tubes and car park surveys (if required). As detailed in Section 4, the Commercial Case, it is expected that further external support will need to be procured for the development and design of the packages of measures and the preferred package (which could include technical designers, further legal services etc.) but it is not possible to know the extent of the further external support services until the packages of measures and the preferred package is selected. It is also expected that support will need to be provided by specific teams within the Local Authorities (for development of the design, gaining powers and consents, consultation etc.) but again it is not possible to know the extent of this until the packages of measures and the preferred package is selected. The project management documentation will be developed for the project overall as the packages of measures are developed and the preferred package is selected.
- 5.8.7 TfGM is engaging with several of the other mandated cities and a number of European cities through Core Cities, UTG and specific joint projects. Any opportunities to share ideas and actions will be considered.
- 5.8.8 There are some areas it is believed would be helpful to individual LAs if JAQU lead on/undertake specific activities. An example of this is for the procurement of legal advice on key areas of concern.
- 5.8.9 A Project Execution Plan (PEP) will be developed which will identify the approach to, and ensure delivery of, the following areas:
- Project Description & Strategic Alignment;
 - Governance & Assurance;
 - Reporting;
 - Risk Management;
 - Schedule & Resources;
 - Legal;
 - Funding & Finance;
 - Procurement & Contract Management;
 - Capital Compliance/Commercial Assurance;
 - Business Case;
 - Benefits & Evaluation;
 - Stakeholders & Communication;
 - Safety & Compliance;
 - Design & Delivery;
 - Change Control;
 - Quality Management; and
 - EQIA.
- 5.8.10 The PEP is a live document that will be developed and maintained by the Project Manager. The Sponsor will approve the PEP and any significant updates to the PEP.

6. List of Appendices

Appendix	Title
A	GM Air Quality Summary Report
B	GM Strategic Policy Context
C	Risk Register
D	Intervention List
E	Project and Programme Lifecycle Stages
F	Organisational Structure and Governance
G	Activities, Workstreams and Teams
H	Funding Source Options
I	High Level Process Flow
J	Four Lines of Defence Model
K	Gantt Chart
L	Stakeholder and Consultation Matrix
M	Workstream Scope