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MOVING OUR CITY FORWARD

BIRMINGHAM MOBILITY ACTION PLAN

TECHNICAL WORK PACKAGE 3 SERVICING AND LOGISTICS NOVEMBER 2014

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BIRMINGHAM MOBILITY ACTION PLAN – TECHNICAL STUDY GROUP REPORT

Technical Work Package 3 - Servicing and Logistics

06/11/2014

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Executive Summary

Background

The Green Paper, dated November 2013, presents a long-term vision and strategy for Birmingham's transport system. This report sets out the Servicing and Logistics Package; one of eight packages commissioned by Birmingham City Council in June 2014 to build on the ideas and thinking set out in the Green Paper. The outputs from this report and the other packages will inform the emerging White Paper. Notably one of the key changes made since the Green Paper has been a much stronger focus on the needs of 'freight' (in its widest sense) given the importance of a resilient and effective logistics network across the West Midlands to continually strengthen Birmingham's economic positioning.

The Servicing and Logistics Package is based upon the 'Olympics 4Rs', as developed by the Olympic Delivery Authority and Transport for London during the 2012 London Olympic Games. The 4Rs refer to **re-timing, re-modelling, re-routing** and **reducing** deliveries. A number of measures covering these 4Rs were initially adopted for the short duration of the Olympic Games but have since been extended and made permanent as a result of the cost and operational efficiencies identified.

The interventions recommended for Birmingham cover a range of physical, operational and behavioural measures, which when combined as a package tackle the 4Rs in a balanced way.

To capture a wide range of different interventions which may be appropriate in a Birmingham context, the adopted methodology was to develop a comprehensive 'Menu of Measures', from which measures could then be shortlisted and developed further.

Whilst the package originally referred specifically to 'freight', it should be noted that the package's definition was widened to cover the whole range of servicing and logistics activities, from cycle logistics, to white van, through to heavy goods vehicles (HGVs). This reflects the fact that the package aims to influence the entire supply chain, from procurement of goods through to delivery, covering a range of distribution and consolidation activities. Hence by referring to 'servicing and logistics', the definition makes clear that the package goes over and above consideration of just the movement of goods.

Development of Menu of Measures

The overarching approach to developing the menu of measures was to ensure that 'all ideas are welcome' and hence the measures ranged from those which are successfully operating elsewhere, to aspirational measures which have not been tried and tested. The draft menu of measures was principally informed by:

- A review of technical data and best practice elsewhere, including both observed and modelled future journey times to show how the highway network in Birmingham operates; and
- Consultations and engagement with the West Midlands Freight Council, plus a number of one to one meetings with providers and relevant organisations / interested parties. The consultation process was also devised to give Atkins a feel for the level of acceptability and 'radicalness' the industry will entertain.

Each measure in the draft menu was scored against a range of criteria, culminating in a Red-Amber-Green (RAG) system to denote whether the measure warranted more detailed consideration. As well as practical considerations regarding the 'fit' in a Birmingham context, the scoring system considered the level of alignment with the Sustainable Urban Mobility Plan (SUMP) goals.

Road-Testing and Refinement of Menu of Measures

To 'road-test' the scores initially applied to each draft measure a workshop was organised, to which representatives of the freight industry were invited to determine the freight industry's main concerns in Birmingham and their views regarding the perceived appropriateness, need and potential success of each measure. The road-testing process also entailed a workshop with the other 6 **Birmingham Connected**

Packages, to determine and attempt to resolve any obvious points of conflict between the various proposals made by each package. Following these workshops, the scores in the draft menu were refined and the measures which were shown to be appropriate for Birmingham were packaged to form a shortlist of final measures as reported in this document.

Key Issues facing Birmingham

The data review and consultation confirmed that there are a number of major challenges facing the servicing and logistics industry in Birmingham, but the two most prominent were the levels of congestion (leading to unreliable journeys) and the ability to be able to park / access the point of delivery.

Congestion

The Green Paper states that road congestion in the West Midlands is estimated to cost the local economy over £2bn per year. Although road freight accounts for just 6% of traffic, delays to its movement account for 30% of the total economic impact (approximately £600m per year) in the region. Analysis of Trafficmaster observed data showed considerable delays (based on a comparison with the 'free-flow' overnight journey time) on most of the key arteries into the city. Interrogation of modelled journey time data from PRISM (the West Midlands' Strategic Transport Model) showed that significant reductions in average speed are forecast in the future on many routes, suggesting a rise in levels of congestion.

Having certainty on routing timings / delay and joined up information between the Highways Agency network and the wider Birmingham / West Midlands local authority network was identified through the consultation as a key factor, specifically journey times on the key arteries and providing advance warning of delays.

Parking / Access

Significant concerns were raised by the industry during the consultation process regarding the ability to be able to deliver safely and efficiently to premises in a range of environments in the city. Within the city itself, concern was raised that Birmingham City Council needs to be more of an enabler in terms of servicing and logistics; with the industry raising concern regarding the tightening of parking waiting times and enforcement of penalties - the end result has been an acceptance by the industry to the inevitable fining regime. A more flexible approach to active street management and the 'human enforcement' aspects were sought.

The West Midlands Freight Strategy also acknowledges the difficulties associated with parking and more generally in accessing the city, noting that a concern with the restrictions for deliveries into centres is reducing flexibility for deliveries and may be inadvertently creating demand for on-street unloading during peak hours. Concern was also raised regarding a lack of suitable hold-back areas on the key arteries should vehicles need to layover or wait for a delivery slot to become available.

Summary of Interventions

In response to the issues identified both in the Green Paper and in the earlier stages of this package, a range of interventions have been outlined for Birmingham, spanning physical, operational and behavioural measures.

Strategic Freight Network

Prior to considering specific interventions, a proposed 'strategic freight network' was devised for Birmingham to guide the provision of measures across the city. In broad terms, freight will be encouraged to use these strategic routes over the less suitable radial routes. This network was devised based on the evidence obtained in the data review process and has been supported by feedback obtained through the stakeholder consultation process and discussions with Birmingham City Council officers. The proposed strategic freight network consists of the A38(M) Aston Expressway, A45 Coventry Road, A38 Bristol Road, A456 Hagley Road and the A34 Walsall Road. North of the Birmingham Motorway Box, the strategic freight route towards Sutton is the A38 corridor rather than the less suitable A5127.

Having multiple strategic freight corridors into the city will encourage the reassignment of freight vehicles onto these routes. Additionally, by having multiple routes into the city from the motorway box provides freight

vehicles with alternative (appropriate) routes in the event of an incident occurring or a special event. Hence the intention is for a 'flexible' network of strategic freight routes to be created, allowing the network to respond to the issues facing it each day. Rather than force vehicles off other routes (which brings with it significant issues of practicality and enforcement), this package aims to adopt the 'carrot' approach in encouraging more use of the strategic corridors which are suitable for higher flows of goods vehicles.

The major measures proposed for the strategic freight network include the following:

- Linking up of Birmingham City Council's Urban Traffic Management Control (UTMC) with that of the Highways Agency (HA), to provide advice on the motorway network about which radial routes to use to access Birmingham. Specifically, this would include directing goods vehicles towards the strategic freight network, wherever possible;
- Use of advanced vehicle detection at key signalised junctions to provide some priority for large goods vehicles, helping smooth the flow of traffic; and
- Use of Variable Message Signs (VMS) to provide reliable journey information from the motorway box to the ring road. In the event of forthcoming hold-ups, information on suitable diversionary routes would be provided. In locations where there is no parallel suitable alternative route, the VMS may direct goods vehicles back to the motorway box and then instruct on a more suitable strategic freight route.

The above measures would seek to ensure goods vehicles are using the appropriate routes, but a number of additional supporting measures would be needed to ensure the routes are suitable for increased flows of goods vehicles:

- Use of 'freight friends' schemes whereby smaller companies would be encouraged to link up with larger companies who may have servicing yards / bays available, avoiding the need for delivery vehicles to load and unload on-street;
- Better provision and use of loading bays, where possible. For example, in regard to loading bays, the potential for these to be pre-booked or their availability to be viewed in real-time. This may include a 'blue cone' scheme or similar. Bays for loading should be clearly denoted, perhaps using different coloured surfacing, to avoid instances of delivery vehicles scanning an area to search for loading areas;
- Use of 'joint procurement' where possible to ensure that the number of deliveries is reduced;
- Introduction of a clear shop front policy to facilitate more efficient deliveries;
- Setting up of local consolidation centres in vacant shop units or similar. These local logistics centres could have two roles. First, to allow for out-of-hours deliveries to neighbourhood / local shopping areas, spreading the delivery profile over a longer period. Secondly, these could perform a similar role to existing 'click and collect' facilities whereby they could act as a hub for residential deliveries to be made. This would allow for residents to pick up parcels at their convenience, rather than having to travel to the courier's distribution hub or similar; and
- Introduction of hold-back areas to allow delivery vehicles to wait off the network rather than blocking pavements in the vicinity of the delivery location.

Other Routes in the City

The proposed measures are not restricted to the Strategic Freight Network. Improvements for the other key 'typologies' within the city would be as follows:

- **Primary Distributors** are the second tier of freight routes (for example, the A41 Warwick Road), which can be used when congestion is occurring on the strategic freight network. As these routes are predominantly single carriageway, we still believe there is a place for advanced vehicle detection for large goods vehicles, to assist with smoothing the flow of traffic at key signalised junctions. These routes would be expected to continue to accommodate some freight traffic and hence with the exception of the VMS signage directing people to use the route, all the measures identified for the strategic freight network would continue to be of relevance to the primary distributors.

- The larger **District Distributor Roads** will have a similar role in freight terms to the primary distributors, with a focus on:
 - Making better use of existing parking bays, potentially through changing the designations in line with the 're-time' objective. For example, designation as a disabled bay during the day, switching to a loading bay prior to 07:00 and post 18:00. This will help to spread the profile of deliveries. Bay sensor technology could be introduced to permit better use of existing infrastructure;
 - Use of local consolidation, in vacant shop units of similar;
 - Extensive use of 'freight friends', with sharing of servicing areas between different companies;
 - Limited use of VMS, to direct freight either back towards the strategic freight network; and
 - Extensive use of some of the behavioural initiatives, such as collaborating on procurement strategies. This could refer to both reducing procurement within single companies (for example, as Birmingham City Council has introduced, look at cut-offs for stationary orders) and to reducing procurement across adjacent businesses.
- Finally, for **Local Access Routes**, the following measures have been recommended:
 - Use of gateway treatments where possible to deter large goods vehicles from entering unsuitable areas;
 - Ensuring that local vehicle routings are provided, highlighting sensitive locations such as schools;
 - Ensuring that construction traffic management plans (CTMPs) route construction vehicles away from sensitive locations; and
 - Use of local consolidation centres where possible to allow for the delivery profile to be spread. This would also serve to reduce the number of deliveries being made into residential areas through allowing residents to pick up parcels from a consolidation centre. This would also provide increased flexibility for local businesses, in being able to receive their deliveries out of hours.

Consolidation

The use of strategic consolidation centres (potentially 2-3 locations) on the ring road is recommended, in line with the opportunity identified in the Green Paper. Consolidation centres are developed on the premise of reducing the number of individual deliveries required to serve businesses and other organisations within a centre through consolidation of loads into a smaller number of vehicles.

Freight gates (allowing access only for freight vehicles) may be provided in the vicinity of the consolidation centres, both to provide access to the consolidation centre and to provide access to suitable quarters within the ring road. Following discussions with officers at Birmingham City Council, it was determined that one aspiration for a freight consolidation centre could be development at the existing Brewery Street Lorry / Coach Park, optimising on the land asset already in place and developing a multi-level facility. The Brewery Street site would be expected to represent an expansion of the existing parking facilities to cater for a range of 'stay' times, hold-back and multimodal interchange onto ULEVs or cycle based delivery vehicles.

Additional Measures across the City

Overlaid across the city as a whole are a number of other initiatives:

- Use of the planning process to engrain logistics / servicing strategies from the outset. This would include ensuring that all travel plans make specific reference to servicing, allowing concepts such as 'freight friends' to be introduced at the earliest opportunity;
- Updating of the Birmingham Freight Atlas (last updated 2005) to gradually 'phase-in' the above information on strategic freight routes, etc. This could be released in both paper and electronic (potentially 'app') format;
- Developing and agreeing a code of conduct for delivery drivers, providing advice on how to park in challenging locations;

- Reviewing delivery hour restrictions to ensure that deliveries are allowed across as much of the day as practically possible – aiming for 24/7 operation at all sites where local circumstances dictate. It is clear that existing planning restrictions will have been introduced with good reason – but a process of reviewing and in some cases ‘relaxing’ these should be undertaken in the first instance;
- Provision of a better source of all planned road works, journey times, current restrictions etc. This would allow for better advance planning of freight. For example, this facility would play a role when the A38 tunnels are closed in determining the best diversion routes for different sizes of vehicles; and
- Extensive use of some of the behavioural initiatives, such as collaborating on procurement strategies.

Finally, two strategic highway recommendations are made:

- All junctions on the Birmingham Motorway Box are ‘full junctions’, permitting all movements, with the exception of the M6 Junction 5, where it is not possible to exit the southbound M6 or enter the northbound M6. A study is recommended to determine whether there is scope to upgrade this junction, given its location close to the industrial Tyburn Road corridor. The A47 corridor from this junction to the city centre is not denoted as a strategic corridor in this Servicing and Logistics Package, but this could be subject to review if the junction with the M6 were to be upgraded to permit all movements; and
- There has been considerable discussion in Birmingham regarding the role of the A38 tunnels and whether a permanent closure should be considered in the future, which would clearly have major implications on vehicle routings. The recommendation from this Servicing and Logistics Package is that the freight industry is actively engaged in any subsequent discussion regarding the role of the A38 and its potential closure.

Green Travel Districts

Package 4 focusses specifically on Green Travel Districts, referring to identified locations in the city where there is significant scope to embed sustainable travel behaviour but also to introduce many of the logistics and servicing measures as a natural part of their evolution. All the measures already set out are likely to be applicable to the Green Travel Districts to a greater or lesser extent, but the creation of these districts provides a clear opportunity to create tangible impacts in regard to servicing and logistics. For this reason, the following measures are considered a priority in the Green Travel Districts:

- Introduction of a joint procurement / brokerage service to allow SMEs to pool purchasing power and generate ‘single’ deliveries;
- Creation of area wide travel plans targeted at groups of SMEs with a single umbrella logistics plan, and adaptation of this approach to suit a corridor location where local traders and businesses wish to collaborate;
- Creation of Green Travel District ‘lite’ freight partnerships that allow mutual sharing of servicing and delivery space;
- Ensuring that Green Travel Districts actively encourage a consortium approach to logistics within each area; and
- Introduction of neighbourhood local consolidation (with 24/7 operation) booth or similar (temporary modular structure or potential re-fit of vacant unit to increase vibrancy). This measure is of key importance, as with the exception of the city centre Green Travel District, their locations will not generally lend themselves to being serviced by the strategic consolidation centres being proposed at or close to the Ring Road.

Other Modes

Whilst much of the focus of the package has been on highway interventions, it should be noted that other modes may be able to play a significant role in the future.

Rail Freight Opportunities

The following suggestions are made:

- Birmingham City Council to work collaboratively with neighbouring authorities / the West Midlands ITA to support any improvements to the rail network which will help to maximise the throughput of rail freight in the region;
- Birmingham City Council to consider the potential opportunity associated with moving freight via the new high speed infrastructure being planned for the city. The existing high speed railway in the UK, between the English Channel and central London, is currently used by a limited number of freight trains, but this freight serves Barking rather than Central London;
- One of the potential sites for a road based freight consolidation centre is Landor Street. This potential site would be adjacent to the Landor Street container terminal, served by Freight Operating Company (FOC) Freightliner, and hence there may be an opportunity to seek the establishment of a multi-modal freight facility at this location, potentially to serve a wider role than that envisaged as a road based consolidation centre to serve the area within the Ring Road;
- With the proposed development of the high speed railway to Birmingham, there is a significant opportunity to run additional freight trains on the 'classic network' as a result of released capacity. Hence an important task going forward is that freight is considered in any discussion of the use of released capacity; and
- Birmingham City Council should strongly endorse any moves in the industry towards remote parcel collection at convenient points, to include city centre railway stations.

Other Mode Opportunities

The menu of measures contained a measure referring to the use of light rail to move freight, which is particularly topical given the forthcoming extension of the Midland Metro to penetrate the city centre from its current terminus at Birmingham Snow Hill. A number of European cities, including Dresden and Zurich, use light rail to move freight. The suggestion for Birmingham City Council as a result of this Servicing and Logistics Package is that some feasibility work is undertaken to determine whether it may be appropriate in the medium to long term, particularly in light of the expanding system. Key topics in the study should include the size of market and the approach to last mile delivery.

The West Midlands Regional Freight Strategy notes that canals provide access to key centres such as Birmingham, Wolverhampton and Coventry. In a Birmingham context, there is relatively good penetration to the city centre area, with a number of different canals converging in the central area. Birmingham City Council has in the past considered the potential for goods to be conveyed by canal, and the recommendation of this Servicing and Logistics Package is that it continues to be monitored as a potential means for transporting bulk goods, potentially from the Black Country area into Birmingham. This may be particularly appropriate for supporting city centre construction projects, but there are clear questions regarding unloading facilities and the 'last mile' delivery.

Implementation Plan and Monitoring

To be successful, a clear implementation strategy will be required for the Servicing and Logistics Package, ensuring that the proposed physical, operational and behavioural measures are introduced in the optimal locations at the optimal time in the **Birmingham Connected** lifetime:

- Some behavioural measures should be introduced as 'quick wins' at the very outset of the programme. Notably, collaboration of supply chains should be introduced as soon as possible, both within large businesses but also between neighbouring businesses;
- The package makes various suggestions regarding loading bays in the city. Regarding the introduction of smarter bays, this should proceed as early as possible in the process, to maximise the usefulness of the existing facilities. The provision of new loading bays is however more of a measure for the medium to long term. Some of the shortages identified by the industry during the consultation may be eased through the introduction of the aforementioned behavioural measures. Hence it would be prudent to determine the level of impact of the behavioural measures before adding extra loading capacity;

- One of the key operational measures is the development of the strategic freight network, referring to the limited number of corridors which are likely to be appropriate for greater levels of freight traffic. The timescale for this intervention is likely to be medium term, as the technology required (plus interface with the HA's information) means that a period of 'lead-in' time will be required. The phasing of these corridors will need to be such that the signal improvements are made prior to additional traffic being persuaded to join them, so that the benefits are clear from the outset; and
- Freight consolidation forms a major part of the strategy and hence its timing is key. The strategic consolidation centres should be introduced at broadly the same time as the operational improvements to the strategic networks. This ensures that the routing to the consolidation centres is clear and a situation does not arise whereby poor routing behaviour is engrained from the outset.

Package 7 of Birmingham Connected focusses on how the measures should be monitored and provides details on how the cumulative impacts of the seven packages can be assessed, to ensure the stated aims of Birmingham Connected and each individual package are met.

Learning from Best Practice

As part of the wider SUMP, there has been a considerable level of knowledge sharing and support around best practice in servicing and logistics. The recommendation from the Servicing and Logistics package is that this considerable momentum is maintained and there is ongoing participation in key national and international best practice events – for example the Global Quiet Cities and feedback from the TfL technology trial and wider re-timing initiatives. There must be a regular commitment to liaise with key stakeholders at a local and regional level as the logistics dimension needs to work on an ongoing platform of communication and not one-off snap shot engagement.

In order for the logistics sector to enact many of the ideas put forward in Birmingham Connected, ongoing dialogue and road-testing is crucial to the successful delivery of expected outcomes. Unlike 'single event' consultation, which takes place when a physical scheme is introduced, the industry sector can offer a great deal in terms of expertise, understanding and practical planning. Given the need that many initiatives focus on the more behavioural or operational practice interventions, the capacity to make a step change in freight patterns must be worked through with a large industry audience. Hence there is a clear need to consult across the board (beyond the Freight Council) with the wider 'freight family', covering large businesses, SMEs, professional organisations and intermediary bodies. It is critical that the consultation momentum is continued where possible.

1 Introduction and Study Context

1.1 Birmingham Mobility Action Plan – Green Paper

Birmingham's Mobility Action Plan (BMAP) Green Paper, dated November 2013, sets out a long-term vision and strategy for Birmingham's transport system:

"BMAP will reinvent Birmingham's transport system to meet current and future mobility challenges; facilitating strong and sustainable economic growth. The plan will change the way that people and business think about travel into and around the city. By influencing travel behaviour and embracing technological change we will reduce carbon emissions, increase safety and improve people's lives".

The Green Paper identifies issues and opportunities across the whole range of travel modes, including consideration of the role road and rail freight may play in the future, as outlined below.

Road Freight

The Green Paper states that road congestion in the West Midlands is estimated to cost the local economy over £2bn per year. Although road freight accounts for just 6% of the traffic, delays to its movement account for 30% of the total economic impact (approximately £600m per year) in the region. Hence the importance of ensuring there is an efficient highway network for the movement of freight.

Birmingham Connected will ensure measures to improve the efficiency and movement of people across the city also have a positive impact on the movement of goods. Birmingham Connected is seeking ways to keep roads moving and to improve freight efficiency in the city, whilst also focused on reducing negative environmental and social impacts from polluting and noisy vehicles in central areas.

Figures provided in the Green Paper confirm that whilst the proportion of heavy goods traffic is relatively small (around 3% of all traffic), there are significant numbers of light goods vehicles (LGVs), upwards of 9,000 per day. These LGVs are undertaking deliveries to, and servicing, the tertiary industries that dominate the city centre. Birmingham Connected's intention is to improve the efficiency of these deliveries and reduce their impact on congestion, the urban environment and reduce levels of harmful emissions. The document confirms that in developing the White Paper, a number of initiatives will be examined, including consideration of urban freight consolidation centres and local freight and delivery consolidation.

One of the Birmingham Connected packages relates to Green Travel Districts, proposing that as part of the Area Travel Planning exercise, Birmingham City Council would work with developers and businesses on these sites to seek ways to reduce impacts from freight and logistics. This will include initiatives such as consolidation of common supplies and logistics using local distribution centres. For common needs, such as office supplies and catering, consideration will be given by Birmingham City Council to sourcing these from a single supplier for a whole site, with internal distribution by a green vehicle or similar. Finally, use of low emission vehicles would also be encouraged.

The Green Paper covers potential initiatives to reduce the impact of goods vehicles on the city (such as freight consolidation centres and low emissions zones or restrictions in delivery times) as broad tools, but recognises that there is an opportunity to develop more detail around the balance of measures needed to deal with the range of delivery, servicing and wider freight movements.

A key change in the discussion around freight since the Green Paper has been the introduction of the wider definition of 'Servicing and Logistics' (in place of 'Freight'), reflecting the broad scope of goods movements in Birmingham and the full range of organisations involved. Hence all references to the package hereafter are to the 'Servicing and Logistics' Package.

Rail Freight

Whilst the focus of the Green Paper in regard to freight relates to road haulage, it expresses concern that the lack of rail investment will mean freight terminals will not be connected to the expanding electrified rail freight

network (and hence freight services would continue to be diesel hauled, unless appropriate technology is developed to allow for short distance movements under battery power, or similar). The Green Paper makes reference to the potential re-opening of the railway between Stourbridge and Walsall (and ultimately Lichfield), which in providing extra capacity to the west of Birmingham may allow for additional passenger services to be operated elsewhere.

Water Freight

Whilst the Green Paper does not make explicit reference to the opportunity that water based freight may present, early liaison with the client team at Birmingham City Council confirmed that this should be considered in any package of measures and hence further discussion is provided later in this report.

1.2 The Servicing and Logistics Package

Following the submission of the Green Paper, Birmingham City Council commissioned a number of consultants to consider specific areas in more detail to inform the development of the White Paper to be published in draft form in Q4 2014, setting out the short, medium and long-term (up to 50 year horizon) for the city.

Atkins was commissioned in June 2014 to complete the Servicing and Logistics Package for Birmingham Connected. This is one of eight different packages, as outlined in Figure 1.1.

Figure 1.1 Birmingham Connected Work Packages



The Servicing and Logistics Package outlined in this report is based upon the ‘Olympics 4Rs’, as developed by the Olympic Delivery Authority and Transport for London during the 2012 London Olympic Games. The 4Rs are outlined in Figure 1.2. A range of measures have been developed to ensure that each of the 4Rs is addressed in a Birmingham context.

Figure 1.2 London 2012 4Rs



The package takes account of the different environments and typologies in the city through use of the link / place matrix developed under Package 1. Throughout the project, there has been regular liaison with the other packages to ensure a consistent approach and to provide the best outcome for Birmingham City Council.

1.3 Structure of the Report

Following this introduction, the remainder of the report is structured as follows:

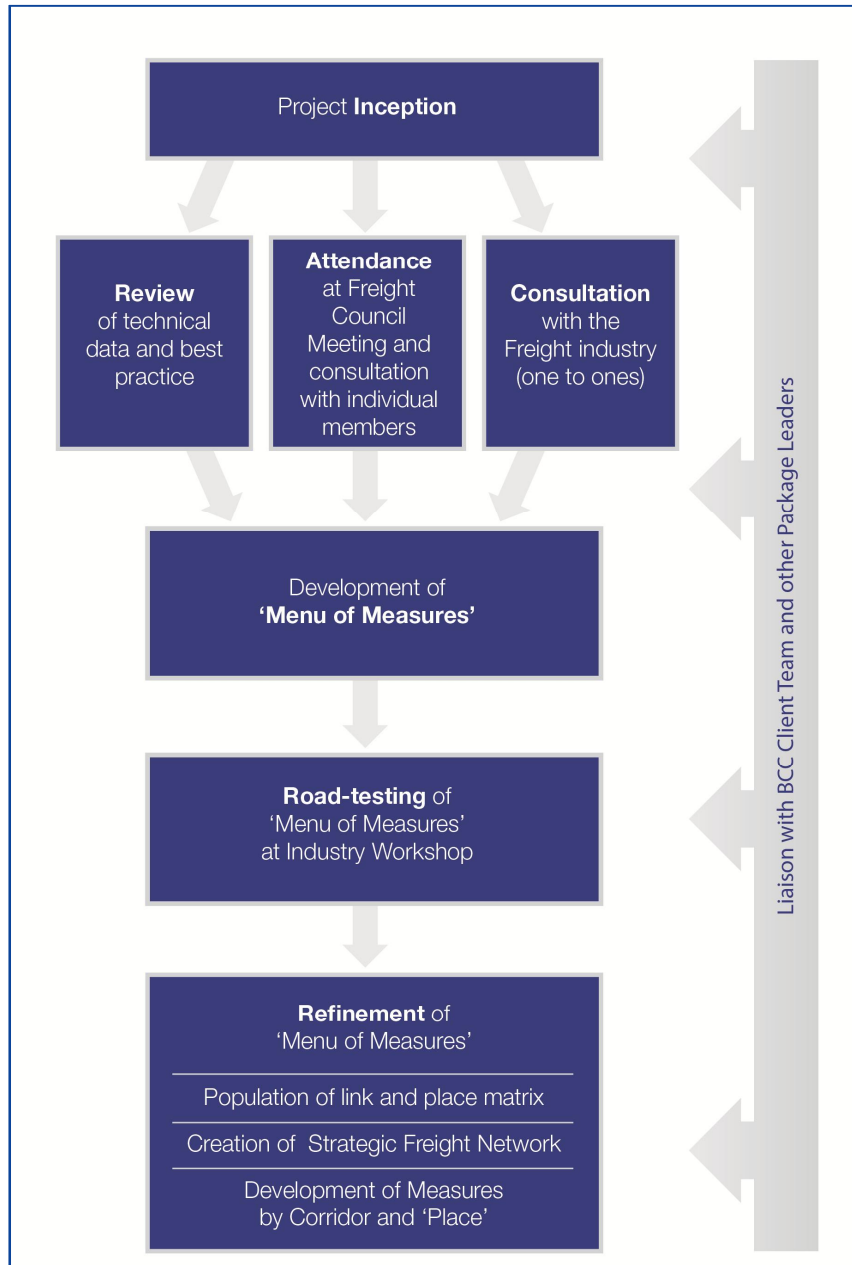
- Project Methodology (Chapter Two);
- Review of Technical Data (Chapter Three);
- One to One Consultations (Chapter Four);
- Development of Menu of Measures (Chapter Five);
- Workshop and Testing of Menu of Measures (Chapter Six); and
- Proposed Strategy (Chapter Seven).
- The report is supported by eight appendices:
 - Copies of Presentations (Appendix A);
 - One to One Questionnaire (Appendix B);
 - Additional Technical Review Findings (Appendix C);
 - Detailed One to One Consultation Feedback and Contact Details (Appendix D);
 - Best Practice Review – Working Notes (Appendix E);
 - Scoring and Menu of Measures (Appendix F); and
 - Monitoring of Package (Appendix G).

2 Project Methodology

2.1 Introduction

An overview of the methodology is set out in Figure 2.1, with the specific approaches of each stage of the study outlined in the remainder of the chapter.

Figure 2.1 Overview of Methodology



2.2 Review of Technical Data and Best Practice

To deepen the understanding of the current issues associated with servicing and logistics in Birmingham, a number of datasets were interrogated:

- The volumes of road freight entering the city centre, sourced from the West Midlands' Spectrum Database;
- Road freight journey times on key radial routes to the city centre, using both observed Trafficmaster data and PRISM model data;
- Freight destinations within the Birmingham Motorway Box, also sourced from the PRISM model; and
- Road traffic collision data, sourced from the Department for Transport's website.

A review of best practice was undertaken using a variety of sources from within the UK and overseas and included attendance at a Webinar hosted by Civitas. Atkins also drew on previous experience in freight best practice gained from the London 2012 Games, which has seen measures initially adopted for the short-term only; extended and made permanent as a result of the cost and operational efficiencies.

2.3 Engagement with West Midlands Regional Freight Council Meeting

To publicise the work being undertaken on Birmingham Connected and engage with key stakeholders, Atkins presented at the Freight Transport Association's West Midlands Regional Freight Council Meeting at Berkswell, Warwickshire on Wednesday 25th June 2014. In addition to publicising the project as a whole, the aim of the presentation was to allow for Atkins to engage with individual members of the Freight Council either through subsequent one to one consultations or via a subsequent industry workshop. It provided an opportunity to begin to gather data on the following information:

- Freight origins and destinations;
- Routing choices;
- Time of travel; and
- Types of vehicles used.

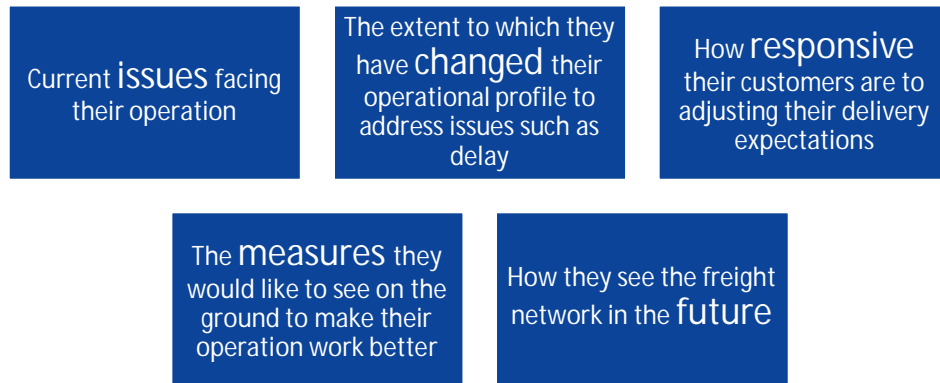
Following the presentation, a number of individuals were identified to give their strategic overview of the logistics challenges facing central Birmingham and the wider urban area. This facilitated discussions later in the project with local managers and operations staff with 'on the ground' knowledge of accessing central Birmingham and use of the Birmingham Motorway Box and the key arterials. The full presentation is provided in Appendix A.

2.4 Consultation (One to One)

The engagement process was designed to allow Atkins to 'drill down' into the freight, logistics and servicing challenges facing providers to the city and offer invaluable insight to the type of Birmingham Connected interventions the industry will want to see. It was also devised to give Atkins a feel for the level of acceptability and 'radicalness' the industry will entertain.

The Freight Council covers a wide variety of sectors and therefore the engagement sample allowed Atkins to liaise with a wide cross section of organisations. The one to one consultations were undertaken with a number of organisations (listed in Chapter Four), and each interview was semi-structured around the questionnaire (see Appendix B). A snapshot of the topics covered is provided in Figure 2.1. The purpose of the semi-structured approach was to ensure that the full value of their expertise could be harnessed, covering their perspectives on a full range of interventions, plus their vision over the longer term, including looking ahead 20 and 50 years.

Figure 2.1 One to One Consultations



2.5 Development of Menu of Measures

Utilising the intelligence gained from the project to date, a draft ‘menu of measures’ was developed for four different typologies in Birmingham:

- City centre;
- Arterial routes;
- Local centres and neighbourhoods; and
- Residential streets.

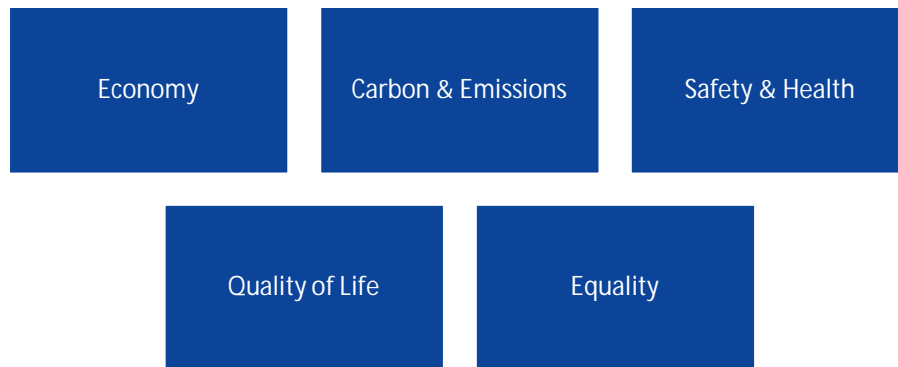
Note that later in the study, the measures were also aligned with the link / place matrix developed under Package 1, which provides a more comprehensive consideration of both the link / place functions of each environment in the city. The overarching approach to the development of measures was to ensure that ‘no idea is a silly idea’ and hence the measures range from those which are successfully operating elsewhere, to aspirational measures which have not been tried and tested.

Each measure was scored against a range of criteria, culminating in a Red- Amber- Green (RAG) system to denote whether the measure warrants more detailed consideration. The ‘menu of measures’ also considered the extent to which each measure delivered against one or more of the 4Rs:

- Reducing deliveries;
- Re-modifying deliveries;
- Re-timing deliveries; and
- Re-routing deliveries.

Further details on the scoring system used are set out in Chapter Five. As well as practical considerations regarding the ‘fit’ in a Birmingham context, the scoring system considered the level of alignment with the Sustainable Urban Mobility Plan (SUMP) goals, as outlined in Figure 2.2.

Figure 2.2 SUMP Goals



2.6 Road-Testing the ‘Menu of Measures’

Having developed the menu, it was necessary to confirm the level of industry support (or otherwise) for each measure. A workshop was organised on Thursday 24th July 2014 to which representatives of the freight industry were invited to determine:

- The freight industry’s main concern in Birmingham; and
- The development of the menu by obtaining the view of industries towards the perceived appropriateness, need and potential success of each measure.

The road-testing process also entailed a workshop between the eight Birmingham Connected Packages, to determine and attempt to resolve any obvious points of conflict between the various proposals made by each Package. This internal workshop was held on Wednesday 30th July 2014.

The final major element of consultation was a presentation to the Birmingham Chamber of Commerce on Thursday 21st August, setting out the emerging proposals.

2.7 Refinement of ‘Menu of Measures’

The final stage of the process entailed the presentation and refinement of the ‘menu of measures’, which included the following activities:

- Designation of the strategic freight network – namely those routes which are more suited to higher flows of freight;
- Mapping of the measures on the strategic freight network – allowing for the ‘theoretical’ measures to be applied to specific locations in Birmingham;
- Supplying of estimates of the level of impact of the measures to the PRISM model team at Mott MacDonald, to allow for a scenario covering all Packages to be run; and
- Finally, outlining the costs of different elements of the Servicing and Logistics Package to enable Work Package 7 – Funding – to be developed.

3 Review of Technical Data

3.1 Introduction

The purpose of this chapter is to summarise the datasets used to develop an understanding of freight movements within Birmingham, in order to provide a technical basis for the study. The chapter comprises:

- An analysis of road freight volumes entering the city centre;
- Details on road freight journey times to the city centre;
- Details on freight destinations within the Birmingham Motorway Box; and
- An analysis of road traffic collisions involving freight vehicles.

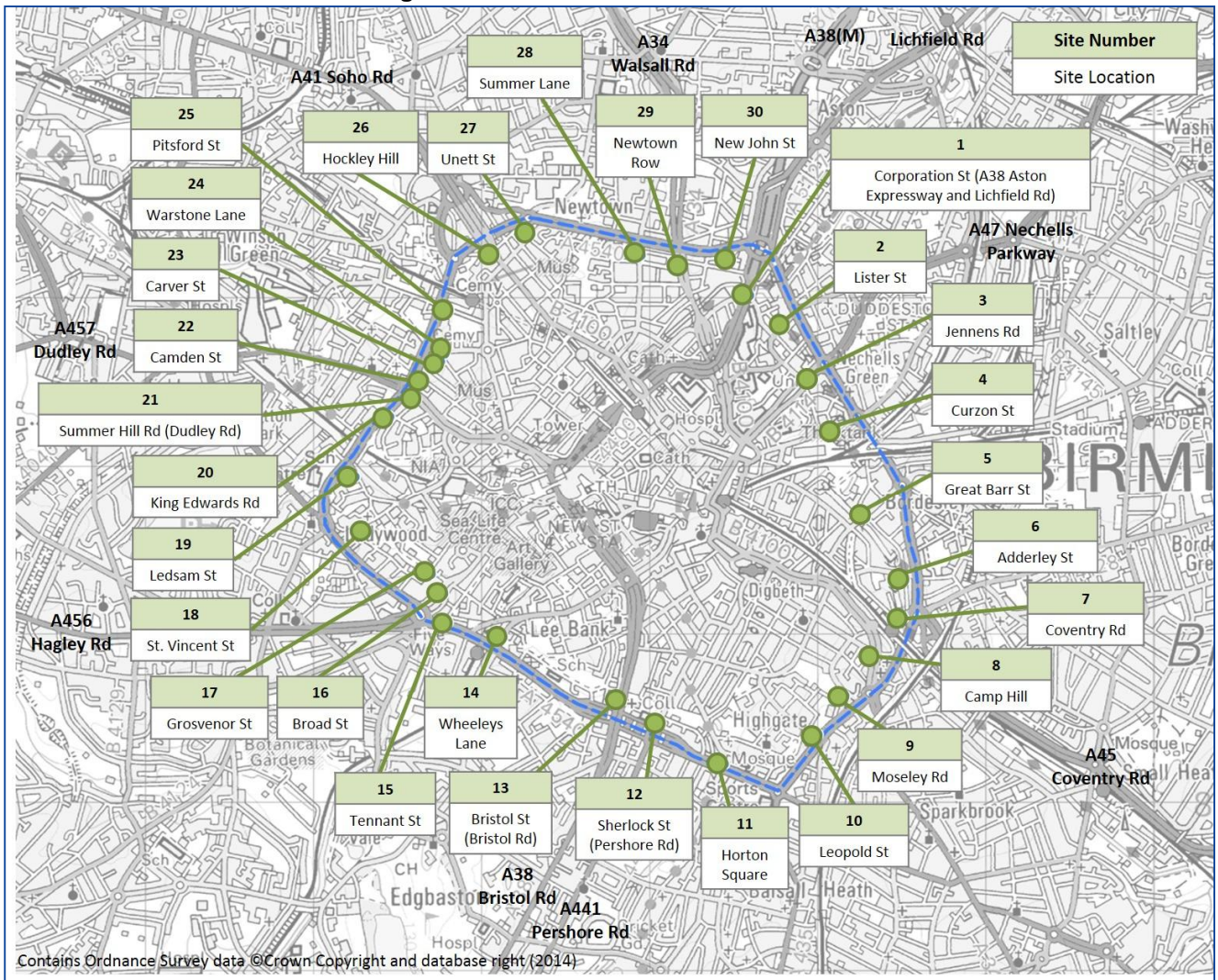
3.2 Road Freight Volumes

Automatic Traffic Count (ATC) data was obtained from the West Midlands SPECTRUM Database for 30 routes crossing the Ring Road. Count data for each site used was taken from a weekday in November 2013. The locations of the counts are shown in Figure 3.1. It should be noted that the cordon aims to capture all movements within the Ring Road. Note the location of the counts means they cannot be used to determine which route from the motorway box a vehicle has taken, but it nonetheless provides a useful indication of the level of traffic on different routes within the Ring Road. It is also not possible to determine from this data whether a vehicle is making a 'through trip' (i.e. no stop in the central area) or whether the vehicle makes one or more stops. The count results are presented for the 12 hour 07:00-19:00 period as this was the most common data period available.

- Count data has been split into three goods vehicle types:
- Light Goods Vehicle (LGV): up to 3 tonnes;
- Medium Goods Vehicle (MGV): rigid two and three axle goods vehicles; and
- Heavy Goods Vehicle (HGV): rigid four axle goods vehicles and 3 – 5 articulated goods vehicles.

The above vehicle classifications are based on those used for the cordon counts. Note that for the purpose of the Servicing and Logistics Package, other freight vehicle types are sometimes referred to, and hence the above categories do not encompass the entire 'spectrum' of freight movements. For example, measures later in the report include the use of bicycle logistics and potentially ultra-light electric vehicles.

Figure 3.1 Cordon Traffic Count Locations



Traffic Volume Results

Tables C.1 and C.2 in Appendix C present the count results across all 30 sites for inbound and outbound traffic movements, respectively (Average Weekday Traffic – AWT). These tables detail:

- The total number of each goods vehicle type – LGV, MGV and HGV;
- The proportion of each goods vehicle type compared to total vehicle flow; and
- The proportion of goods vehicles across each site compared to the total number of goods vehicles crossing the entire Ring Road cordon.
- The key points to note from these tables are:
 - For inbound movements, a total of 19,241 goods vehicles passed through the Ring Road cordon, comprising 12.7% of all traffic. Of those goods vehicles, 88% were LGVs, 8% MGVs and 4% HGVs;
 - For outbound movements, 18,611 goods vehicles passed through the Ring Road cordon, comprising 12.5% of all traffic. Of those goods vehicles, 88% were LGVs, 8% MGVs and 4% HGVs;
 - The main route used by goods vehicles entering the city centre is via A38 Corporation Street (Site 1), with 24% of all inbound goods vehicles crossing the cordon via A38 Corporation Street, and 26% of outbound vehicles doing so. Across both the inbound and outbound directions, over 9,000 goods vehicles were

recorded on Corporation Street. Unfortunately the data does not disaggregate between vehicles travelling via the A38(M) from the M6 or via the A5127 Lichfield Road / A38 Tyburn Road;

- Bristol Street (Site 13) is the second most important route for goods crossing the Ring Road and entering the city centre, with over 6,000 goods vehicles passing the count site (across both directions). 17% of all inbound goods vehicles crossing the middle ring road cordon do so via Bristol Street, with 15% of outbound goods vehicles doing the same;
- Other routes which accommodate a relatively high proportion of the total inbound or outbound goods vehicles crossing the Ring Road cordon (5% or greater) include:
 - Great Barr Street to the east of the centre (Site 5);
 - Sherlock Street to the south, linking to Pershore Road (Site 12);
 - Broad Street to the south-west, linking to Hagley Road (Site 16);
 - Summer Hill Road to the west, linking to Dudley Road (Site 21); and
 - New Town Road to the north, linking to Walsall Road (Site 29).
- The site with the greatest proportion of goods vehicles passing through it is New John Street (Site 30), which whilst only has a total inbound flow of 470 vehicles, has 171 (36%) being goods vehicles. New John Street is a minor local access road and is not designed as a strategic route. The land use in the area is largely industrial, which can potentially account for the relatively high proportion of goods vehicles using the route.

From this initial assessment, six high volume freight routes become apparent:

- Corporation Street (Site 1);
- Bristol Street (Site 13);
- Sherlock Street (Site 12);
- Broad Street (Site 16);
- Summer Hill Road (Site 21); and
- New Town Road (Site 29).

Great Barr Street is excluded from this list of key freight routes as whilst it accounts for 5% of total inbound goods vehicles and 5% for outbound, it is not a key route to/from the city. Rather, Great Barr Street is a minor road for local access, being of single carriageway standard with one lane in each direction. The relatively high proportion of vehicles recorded on this road can potentially be attributed to the land use in the area, which is largely industrial – with waste disposal and environmental service depots located in close proximity to the road.

Figures 3.2 and 3.3 present the headline traffic results graphically. Where more than 5% of total goods vehicles across all cordon sites (combined) pass through one count site, this is highlighted in red (Sites 1, 5, 12, 13, 16, 21 and 29).

Figure 3.2 Cordon Traffic Count Results - Inbound

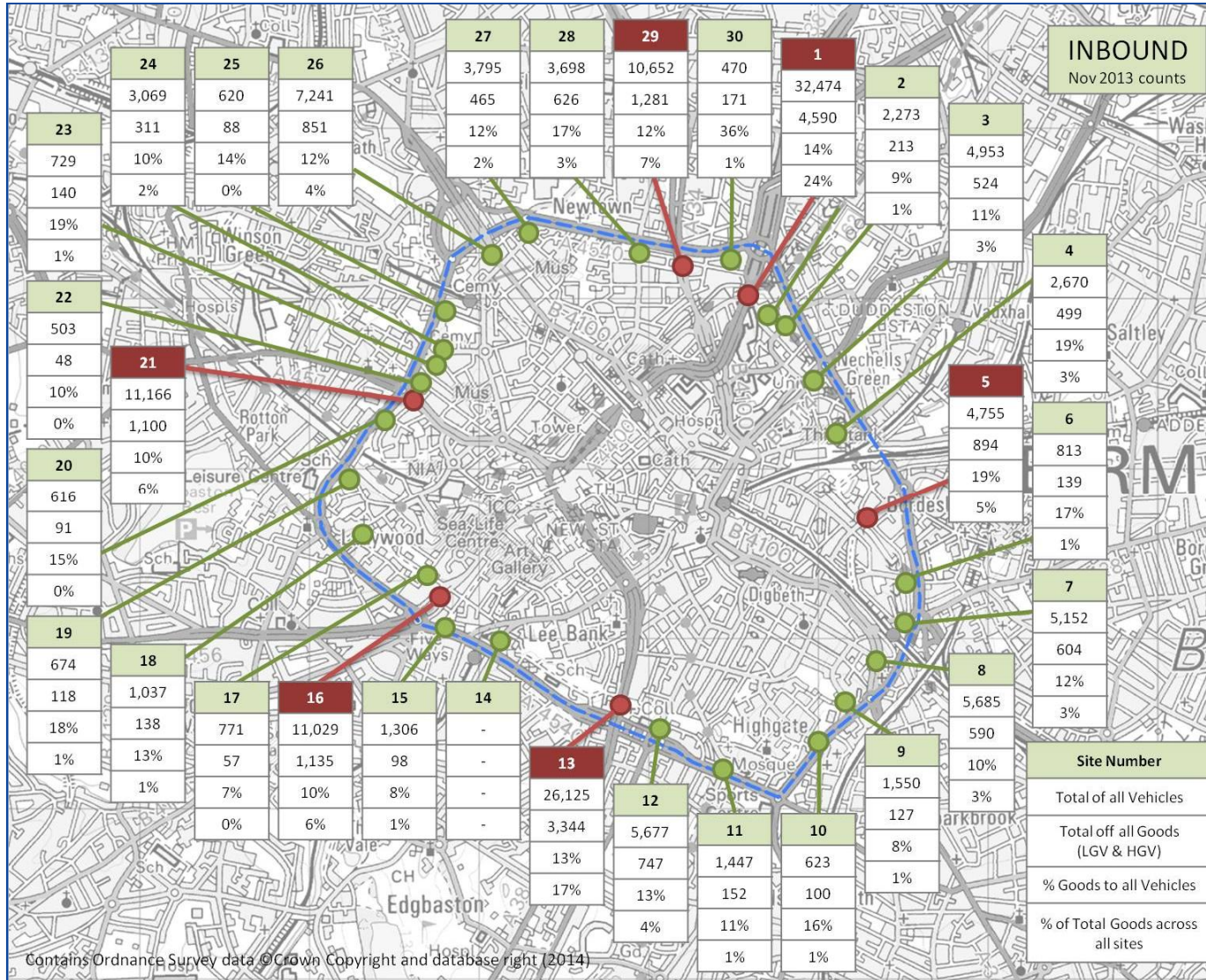
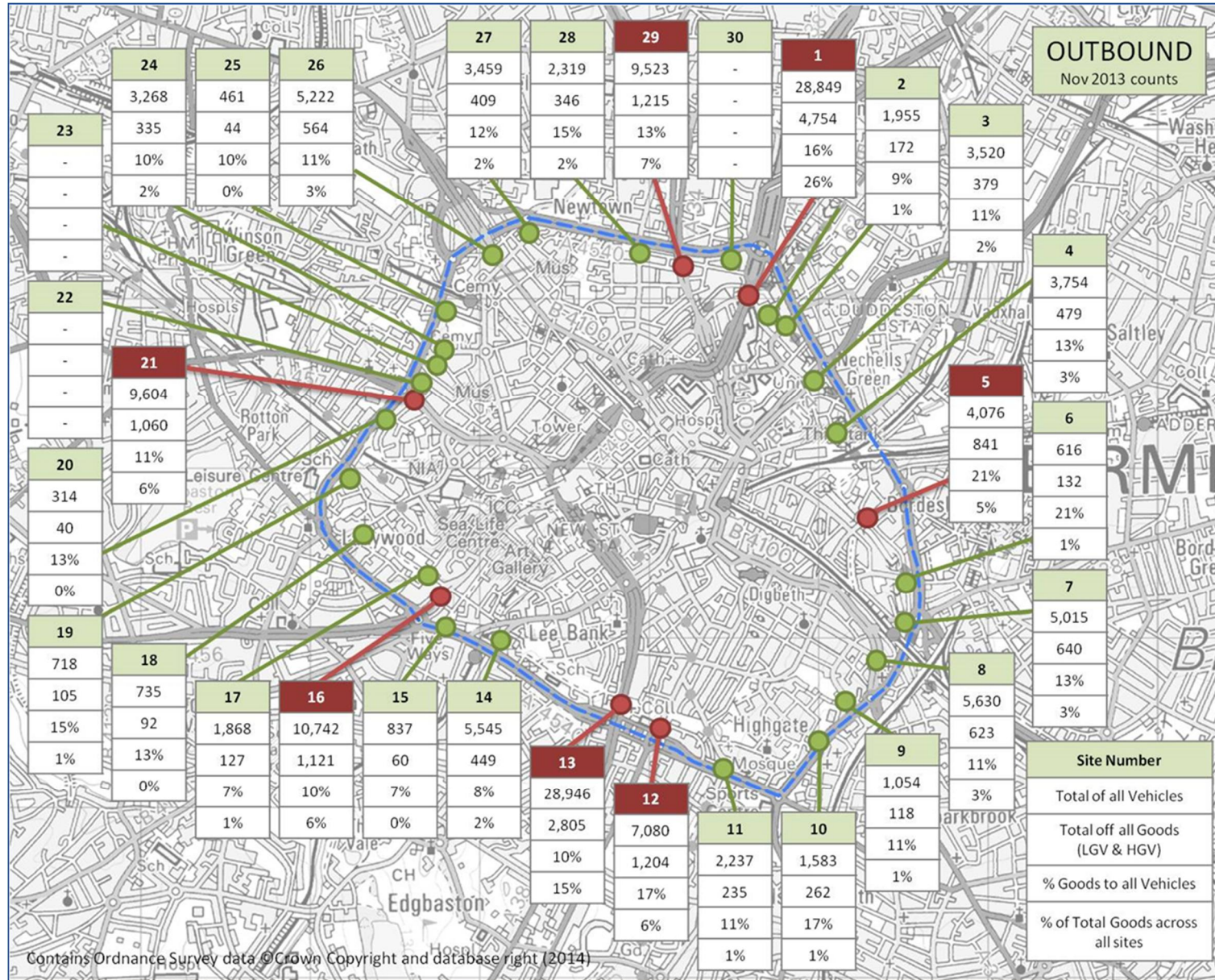


Figure 3.2 Cordon Traffic Count Results - Outbound



3.3 Hourly Flow Profile

12 hour; hourly flow profiles for all good vehicles crossing counts site on the Ring Road cordon are presented in Figure 3.3 for inbound and outbound movements. To allow a better comparison, Figure 3.4 shows the change in flow profile for all vehicles compared to LGVs, MGVs and HGVs, based to each vehicle's 07:00 flow (all starting at 1.0).

This data shows that in the inbound direction, LGV and HGV flows are relatively flat until approximately 12:00, where they begin to slowly fall. However, LGV flows fluctuate throughout the day, with a clear morning peak at 10:00-11:00 (behind the all vehicle peak at 08:00-09:00) and one smaller peak at midday.

In the outbound direction, LGV flows rise steadily throughout the morning, then fluctuate between 12:00 and 16:00, before quickly falling ahead of the evening all vehicle peak. The MGV and HGV flows fluctuate through the day, peaking in the morning, before quickly falling ahead of the evening peak (as with LGVs).

The results show that the hourly flow profiles of goods vehicles does not correspond with that of the general traffic profile in either the inbound or outbound directions. LGV flows, which comprise 88% of total goods flows, remain relatively flat throughout the day in the outbound direction, whilst rising slowly throughout the morning in the outbound direction. In both directions, LGV flows fall rapidly ahead of the afternoon peak.

Figure 3.3 – Daily Flow Profile of Goods Vehicles across Ring Road Cordon Sites

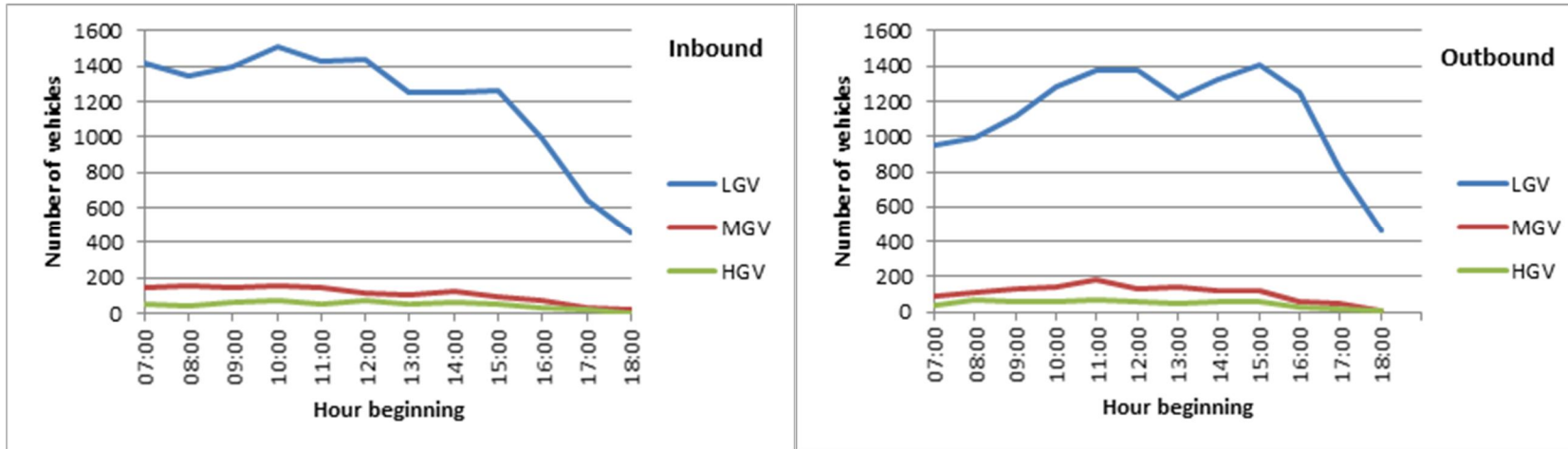
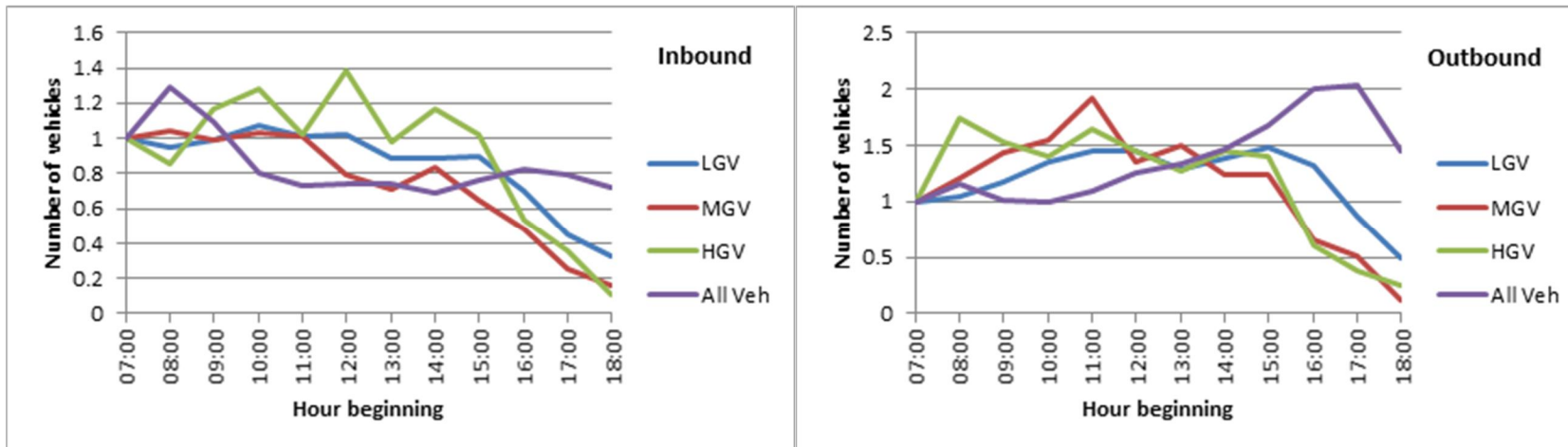


Figure 3.4 – Daily Flow Profile of all Vehicles across Ring Road Cordon Sites – Based to 07:00 Flow Levels



3.4 Freight Journey Times

3.4.1 Observed Journey Times

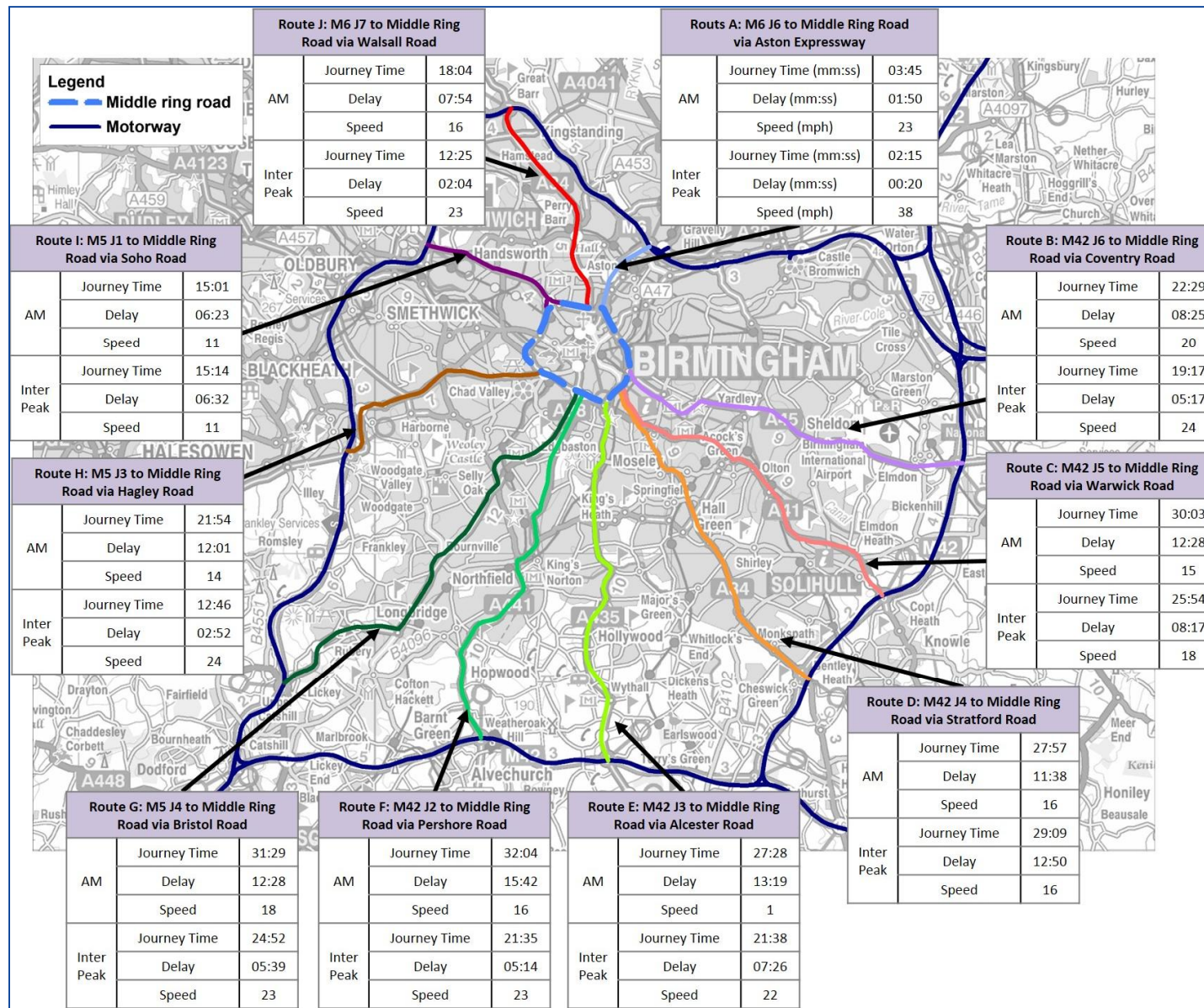
Trafficmaster data showing journey times and journey delay was obtained from Birmingham City Council for 10 corridors into Birmingham City Centre. Trafficmaster is a national data source which uses 'floating' vehicles that are equipped with GPS satellite navigation devices to collect average journey times and speeds on different routes for a range of vehicles. The observed journey times are for all vehicles, unfortunately there is no data available to disaggregate by vehicle type

The analysis has used a full one year data set between September 2012 to August 2013, with times and speeds reported for inbound movements during the AM (07:00-09:00) and inter-peak (10:00-14:00) periods only. Delay has been calculated by comparing journey times in the AM and inter-peak to overnight journey times, which are assumed to be free flow times.

Table C.3 in Appendix C presents average journey times, delay and speeds for a number of routes into the city centre, whilst Figure 3.5 presents this data on a map. Key points to note from this are:

- Severe delays (based on a comparison of given time period with the overnight journey time) ranging from six minutes to 15 minutes is experienced in the AM peak on all routes except the A38(M) Aston Expressway, which has the lowest level of delay and the highest average speed. This route is however different in nature given its motorway designation and lack of junctions at grade;
- Average journey times during the inter-peak are shorter than during the AM peak on all routes except A34 Stratford Road and A41 Soho Road; and
- On a number of routes, the change in delay between the AM and inter-peaks is significant, including the A38(M) Aston Expressway (-82%, so journey time is 82% longer in the AM peak than in the inter-peak), A34 Walsall Road (-74%) and A441 Pershore Road (-67%).

Figure 3.5 AM and Inter-Peak Journey Times on High Volume Freight Routes



3.4.2 Modelled HGV Journey Speeds

Modelled journey speeds from the PRISM model were provided for a number of routes. Data has been provided for the AM and inter-peak periods for model years 2011 and 2031, allowing a comparison of forecast changes in average journey speed. These modelled journey speeds are for HGV only and are an average across the entire route. Table 3.2 presents this modelled data and shows the following:

AM Peak:

- HGV speeds are forecast to reduce the most on the A38(M) Aston Expressway, with a 15% reduction in inbound and 34% reduction in outbound average speeds. Despite this, the A38(M) Aston Expressway is forecast to remain as having the fastest average speeds of all routes into the city considered (which is expected given the nature of the route); and
- The majority of routes will see a slight fall in average journey speeds, except the A456 Hagley Road outbound where speeds are expected to remain at 2011 levels and A34 Stratford Road southbound where average speeds are forecast to increase by 6%. The reason for this is unknown.

Inter-Peak:

- The greatest forecast reduction in average HGV speeds along a route is on the A38(M) Aston Expressway outbound, where there is expected to be a fall in average speed of 23%. As in the AM peak, despite this reduction the A38(M) Aston Expressway remains having the highest average speed both inbound and outbound;
- The A45 Coventry Road inbound will see a relatively high fall in average speed of 11%; and
- The majority of routes will see a slight fall in average journey speeds, except the A34 Stratford Road in both directions, with a 2-4% increase in average route speeds.

Table 3.2 Modelled HGV Journey Speeds

Route	Direction	2011	2031	Difference	% Difference	
AM Speed (MPH)						
1	Bristol Road from M5 J4	Inbound	22	20	-2	-7%
	Bristol Road to M5 J4	Outbound	24	23	-1	-6%
2	Hagley Road from M5 J3	Inbound	20	18	-2	-8%
	Hagley Road to M5 J3	Outbound	25	25	0	0%
3	Walsall Road from M6 J7	Inbound	25	23	-2	-8%
	Walsall Road to M6 J7	Outbound	21	21	0	-2%
4	Aston Expressway from M6 J6	Inbound	44	38	-7	-15%
	Aston Expressway to M6 J6	Outbound	38	25	-13	-34%
5	Coventry Road from M42 J6	Inbound	24	23	0	-2%
	Coventry Road to M42 J6	Outbound	29	28	-1	-3%
6	Stratford Road from M42 J4	Inbound	20	18	-1	-5%
	Stratford Road to M42 J4	Outbound	19	21	1	6%
Inter-Peak Speed (MPH)						
1	Bristol Road from M5 J4	Inbound	24	23	-1	-5%
	Bristol Road to M5 J4	Outbound	24	23	-1	-3%
2	Hagley Road from M5 J3	Inbound	23	22	-1	-6%
	Hagley Road to M5 J3	Outbound	23	23	-1	-3%
3	Walsall Road from M6 J7	Inbound	26	24	-2	-7%
	Walsall Road to M6 J7	Outbound	25	24	-1	-6%
4	Aston Expressway from M6 J6	Inbound	49	47	-3	-6%
	Aston Expressway to M6 J6	Outbound	49	38	-11	-23%
5	Coventry Road from M42 J6	Inbound	28	25	-3	-11%
	Coventry Road to M42 J6	Outbound	30	29	-1	-2%

6	Stratford Rd from M42 J4	Inbound	20	21	0	2%
	Stratford Rd to M42 J4	Outbound	20	21	1	4%

3.5 Freight Destinations

Modelled Origin-Destination (OD) data from the PRISM model was provided, separated by time period and vehicle type (LGV or HGV). Using this data, a number of destination thematic maps were produced revealing the zones within the city which have the greatest number of arriving LGVs and HGVs.

Figures 3.6 and 3.7 show the results of the OD analysis, presenting the zones within the Birmingham box to which LGVs and HGVs are destined in the AM peak (Figures C.1 and C.2 in Appendix C show the same for the inter-peak period). The key points to note from these results are:

- LGV destination zones across the area are generally evenly distributed, reflecting the nature of LGV deliveries. However there appears to be a slightly higher concentration of destination zones in the south-west of the city, concentrated along the M42, from Junction 4a of the M5 to Junction 3 of the M42; and
- HGV destination zones are much less dispersed than LGVs, with a number of higher concentration of destination zones spread across the Birmingham Motorway Box area. These include Birmingham City Centre (within the Ring Road) and directly north (A38 corridor) and west of the city (A41 corridor); the south of the city around the M42; east of the city around Birmingham airport; and other pockets including Tyseley / Acock's Green and Edgbaston.

This data reveals the extent to which freight vehicles penetrate all communities within the Birmingham Motorway Box, though some to a greater extent than others. This supports the need for multiple corridors into the city from the Birmingham Motorway Box for use by freight vehicles, particularly LGVs.

Figure 3.6 LGV Zone Destinations – AM Peak

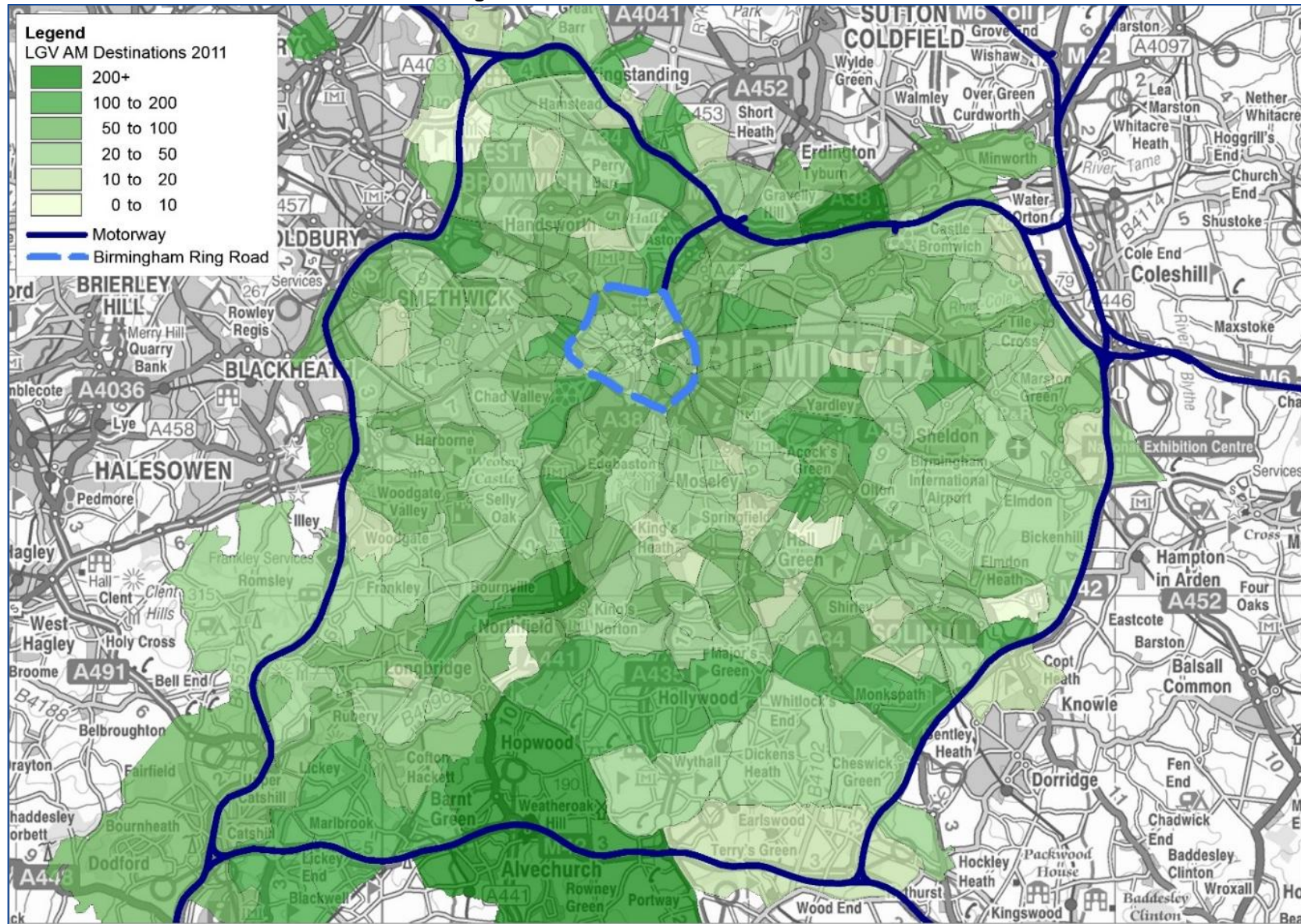
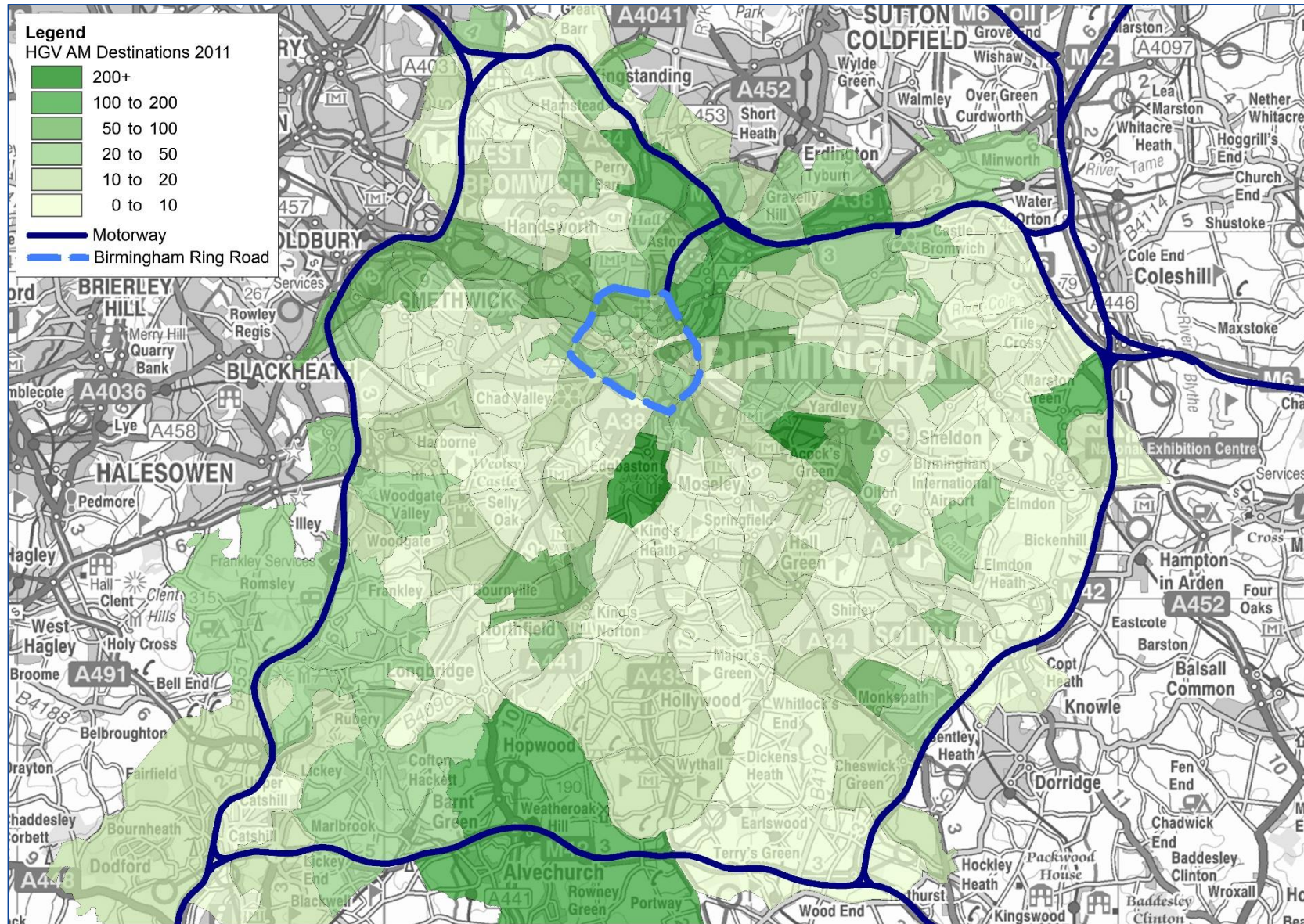


Figure 3.7 HGV Zone Destinations – AM Peak



3.6 Road Traffic Collisions

Analysis of road traffic collisions has been undertaken to understand the relationship between freight vehicles and collisions. Data has been obtained for the period 2011-2013 from the Department for Transport (DfT) in STATS19 format.

3.6.1 Collisions Occurring within Birmingham City Centre

Table 3.3 shows that between 2011 and 2013, 107 collisions occurred within the city centre involving a goods vehicle, with an average killed or seriously injured (KSI) proportion of 12%. This equates to an annual average of 36 collisions per year. Of the collisions involving a goods vehicle, the majority of collisions involved an LGV (79%), with 13% involving an HGV and the remaining 8% involving an MGV. Section 3.2 showed that HGVs make up 4% of inbound and outbound goods vehicle flows across the cordon, meaning HGVs are over-represented in the proportion of collisions occurring within the city centre. This proportional split by goods vehicle classification is presented, by year, in Figure C.3 (Appendix C). The only fatal collision involving a goods vehicle within the city centre occurred in 2011 and involved an HGV. There have been 12 serious collisions involving a goods vehicle, of which 11 involved a LGV and one a MGV.

Table 3.3 City Centre Collisions Involving a Goods Vehicle

Year	Slight	Serious	Fatal	Total	KSI Proportion
Collisions Involving an LGV					
2011	19	7	0	26	27%
2012	25	3	0	28	11%
2013	29	1	0	30	3%
Collisions Involving an MGV					
2011	4	0	0	4	0%
2012	0	1	0	1	100%
2013	4	0	0	4	0%
Collisions Involving an HGV					
2011	5	0	1	6	17%
2012	2	0	0	2	0%
2013	6	0	0	6	0%
Collisions Involving a Goods Vehicle (Total of the Above)					
2011	28	7	1	36	22%
2012	27	4	0	31	13%
2013	39	1	0	40	3%

Table 3.4 goes into further detail by identifying those collisions in the city centre that involved a goods vehicle and either a pedestrian or cyclist. The data shows that between 2011 and 2013, 25 such collisions occurred – meaning 23% of all collisions in the city centre involving a goods vehicle, also involved a pedestrian or cyclist. There was one fatal collision involving a HGV and a pedestrian, two serious collisions involving a LGV and a pedestrian, and two serious involving a LGV and a cyclist.

Table 3.4 City Centre Collisions Involving a Goods Vehicle and either a Cyclist or Pedestrian

Year	Slight	Serious	Fatal	Total	KSI Proportion
Collisions Involving a LGV and either a Pedestrian or Cyclist					
2011	7	1	0	8	13%
2012	6	2	0	8	25%
2013	4	1	0	5	20%
Collisions Involving a MGW and either a Pedestrian or Cyclist					
2011	0	0	0	0	-
2012	0	0	0	0	-
2013	0	0	0	0	-
Collisions Involving a HGV and either a Pedestrian or Cyclist					
2011	2	0	1	3	33%
2012	0	0	0	0	-
2013	1	0	0	1	0%
Collisions Involving a Goods Vehicle and either a Pedestrian or Cyclist					
2011	9	1	1	11	18%
2012	6	2	0	8	25%
2013	5	1	0	6	17%

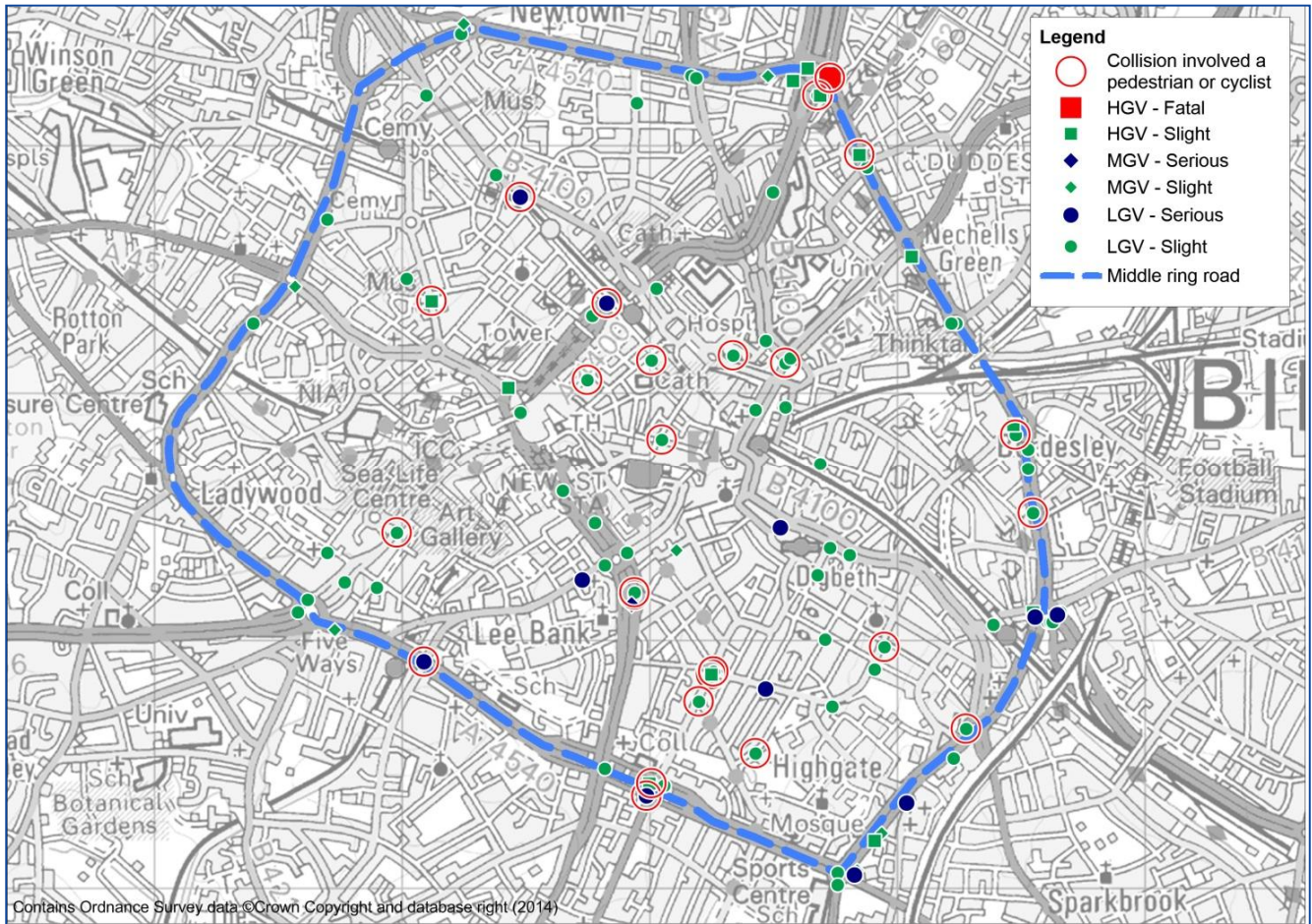
Table C.4 (Appendix C) presents the number and proportion of collisions occurring within the city centre involving a goods vehicle and either a cyclist or pedestrian by age banding. This shows that none of the accident reported included children under the age of 16, with most collisions involving a pedestrian or cyclist aged between 26 and 55 (80% of all collisions).

Table C.5 (Appendix C) summarises the number of city centre collisions involving a goods vehicle by time period. The period with the highest number of such collisions per hour is the inter-peak 10:00 - 15:00.

Figure 3.8 presents the spatial distribution of goods vehicle collisions within the city centre, disaggregating collisions by vehicle type, severity and involvement of a pedestrian or cyclist. It can be seen that there is a cluster of collisions in the vicinity of A38 Corporation Street, which can be expected given the high volume of goods vehicle passing through this location (as identified in Section 3.2). It is also at this location where the only fatal collision involving a goods vehicle occurred. Collisions are then dispersed throughout the centre and on the middle ring road, typically in areas of high flow and at junctions, such as the A4540 Lee Bank Middleway / A441 Pershore Road / Sherlock Street junction.

In addition to the information presented for the city centre, accident analysis has also been undertaken for a number of locations outside the city centre, including the A38 Bristol Road corridor. This analysis is set out in Appendix C.

Figure 3.8 Spatial Distribution of Collisions involving a Goods Vehicle within the City Centre



3.7 Key Findings from the Technical Review

Key findings of the analysis are as follows:

- Of all goods vehicle entering and leaving the city centre, LGVs make up 88%, MGVs 8% and HGVs 4%;
- Over 25% of goods vehicles entering and exiting the city centre do so via A38 Corporation Street, followed by the A38 Bristol Street to the south of the city centre;
- Entering the city centre, LGV and HGV flows are relatively flat until approximately 12:00, when they begin to slowly fall;
- Severe delays (based on a comparison of given time period with the overnight journey time), ranging from six minutes to 15 minutes, are experienced in the AM peak on all routes except the A38(M) Aston Expressway, which has the lowest level of delay and the highest average speed. This route is however different in nature given its motorway designation and lack of junctions at grade;
- An annual average of 36 collisions occurred each year involving a freight vehicle between 2011 and 2013 in Birmingham City Centre. This includes one fatality, which involved an HGV colliding with a pedestrian. The data shows that HGVs are over-represented in terms of accident collisions;
- 23% of all collisions involving a goods vehicle also involved a pedestrian or cyclist. Of these accidents, none involved a child under the age of 16; and

- The results of the accident analysis do not reveal a serious concern regarding the relationship between freight vehicles and collisions. However, further work can be done to improve the safety of all road users, particularly pedestrians and cyclists, to reduce the total number of collisions occurring and in particular those resulting in serious or fatal injuries. The freight industry is already embracing moves to improve safety for other road users and it is important that this momentum is maintained in this Servicing and Logistics Package.

4 One-to-One Consultation & Engagement

4.1 Setting the Scene

Following EU best practice guidance on the development of Sustainable Urban Mobility Plans (SUMPs), coupled with emerging best practice amongst other UK local authorities, it was considered essential to engage at a professional and industry level on the Servicing and Logistics package. This would effectively fill some of the gaps in the original Green Paper and help the wider ‘logistics’ sector to become more actively involved in the shaping of the final Birmingham Connected strategy.

The focus on freight within Birmingham Connected is vital because of the key economic function that servicing and logistics provides to both Birmingham and the wider West Midlands conurbation, and comes in response to the observations of the West Midlands Freight Council to the Green Paper.

For this reason there was an intensive period of consultation and engagement with industry professional bodies and associations, individual logistics providers and their customers, and consultation with business intermediary groups such as the Chamber of Commerce and the Federation of Small Businesses. Given the relatively short timeframe for compiling the White Paper, Atkins strongly recommends that there is ongoing dialogue both with key ‘industry players’ and with the umbrella / intermediary organisations that have been identified below, as they will give a continual sense check on the commercial viability, cost-efficiency and the long term sustainability of the measures proposed to support freight.

There are many interventions that market themselves as already addressing freight issues, such as consolidation practice, backfilling and other collaborative activity. But to achieve a step change in freight practice will require innovation, investment in technology and the ‘sensitisation’ of tools already developed (i.e. in London) to support the Birmingham economy. Investment of this kind can only take place if there is associated ‘in kind’ support and progress within the supply chain sector and therefore it is not surprising that the measures with the best rate of return (as per the scoring system outlined later in the report) are those associated with the behaviour and logistics operations, rather than expensive physical partitioning of road users.

It was considered essential to make a step change in the way in which ‘freight’ is treated within the Birmingham Connected process, ensuring that the wider needs of servicing and logistics (from ‘white van’ through to more traditional HGV movements) are considered holistically. It is also important to make sure that the various types of operation and market sector are properly represented within the engagement process, and that there are opportunities for individual operators to make their own contributions.

The consultation and engagement process was spread over three months (June - August) and tackled a number of audiences, including those outlined in Figure 4.1.

Figure 4.1 Key Audiences for One-to-One Consultation



In addition to the key audiences set out in Figure 4.1, a number of consultation were carried out internally within Birmingham City Council, covering traffic management, Intelligent Transport Systems (ITS), markets, taxi

operations, New Roads and Street Works Act (NRSWA), planning and other technical areas impacting on, or enabling the freight elements of Birmingham Connected. Consultation with key audiences for freight collaboration such as Business Improvement Districts also featured.

Specific presentations took place with the West Midlands Regional Freight Council and the Birmingham Chamber of Commerce, supported by one to one sessions with a number of organisations and businesses.

4.2 One to One Engagement Audience

The one to one interviews were semi-structured around a questionnaire to ensure that the full value of the logistics sectors' expertise was harnessed and that the conversation covered their perspectives on the existing freight framework, the full range of interventions, their vision for 20 years and their blue sky vision for 50 years.

The one to one meetings took the form of 'single conversations' with the following organisations:

- Freight Transport Association (FTA) – regional: Sally Gilson;
- Chartered Institute of Logistics and Transport (CILT) – regional: Don Hambleton and Dave Grahamslaw;
- The Big Yellow Storage: Luke McLaughlin;
- Speedy Services (Construction Sector): Brian Hancox;
- BT Fleet (Utilities and Statutory Undertaker Sectors): Alan Marshall and Mark Paton;
- Dairy Crest (Manufacturing / Food Supply): Gavin Rawson;
- Sainsbury's (Retail): Kevin Greenaway and Torrin Cracknell;
- Mondelez (Supply Chain / Distribution for Cadburys): Rob Lawton; and
- Road Haulage Association (RHA): Joy MacCauley, plus Julian Pottinger (Littlepot) on behalf of the RHA.
- Strategic engagement with umbrella organisations has consisted of:
 - Freight Council (West Midlands) – via Sally Gilson.
 - Consultation with Key Birmingham City Council officers and its delivery partners has included:
 - Kevin Cummins – West Midlands Freight Quality Partnership Coordinator;
 - David Harris – Transport Planning / Policy;
 - Richard Leonard – Transport Planning / Policy;
 - Andrew Radford – Development Directorate (ITS solutions);
 - Heike Schuster-James - Digital Birmingham;
 - Sylvia Broadley - Sustainability/Environment (Green Fleet Change Manager);
 - Ian Robinson – UTMC Manager (Amey);
 - Emma Hardwick /Diana Whittaker – NRSWA processes;
 - Richard Cowell – Birmingham Wholesale Market;
 - Clare Perkins - Colmore BID;
 - Mike Olley – Broad St BID;
 - Chris Neville – Taxi Licensing; and
 - Celine Cluzel – Element Energy (delivering fuel efficiency and low carbon consultancy to Birmingham City Council in terms of fleet development and alternative fuel sources).

Atkins also engaged with Dominic Paolo (Mouchel) on behalf of the Highways Agency West Midlands area, focusing particularly on intelligent transport systems and the role of 'smart' motorways and ITS to deliver an effective freight strategy.

Finally, in addition to these 'local' consultees, Atkins engaged with:

- Transport for London (TfL): Chris Clements / Fiona Rose, consisting of a peer review and the opportunity to learn best practice from London in terms of its servicing and delivery plans, ITS trials, LEZ and quiet deliveries approach;
- Road Haulage Association (RHA): Chrys Rampley / Joy MaCauley;
- Freight Transport Association (FTA): Chris Snelling;
- British Retail Consortium: Andrew Bolitho; and
- Severn Wye Energy (Audrey Healy) and TTR (Suzanne Ballard) who are managing the wider 'SUMP' network across the UK and who have contacts into EU cities that are innovating on freight. Atkins also sought wider EU feedback as part of their best practice networks.

4.3 Key Expectations from One to One Consultations

Building on the positive support for Birmingham Connected from the West Midlands Regional Freight Council meeting on Wednesday 24th June, the key objectives for the subsequent consultation were identified as:

- Ensuring that the definition of 'freight' is more widely defined (i.e. to tackle the breadth of servicing and logistics needs across the city). This would range from small-scale deliveries to independent shops, through to larger scale 'heavy' freight movements, and would need to tackle the needs of SMEs and their supply chains;
- Tackling the decision-makers and procurement behaviours. Many of the delivery movements in the city are customer driven and the timing and nature of deliveries are often laid down well ahead of any physical vehicle using a route. Proper recognition of the role of forward planning, collaborative action and looking at combined procurement and delivery options need to be tackled;
- Embedding these wider 'freight' considerations within the Birmingham Connected process so it is not a 'silo' activity. A key issue is the full integration of servicing and logistics into Green Travel Districts (GTDs) and ensuring that the travel planning and forward action planning carried out across these areas embraces the opportunities for freight;
- Looking at ways to actively reduce, re-time, re-mode and re-route freight movements in the city centre, on the key arterials and in neighbourhood areas;
- Listening actively to the industry and establishing the types of measures (including 'blue sky') that they would welcome and believe would be workable in the Birmingham / West Midlands context – and those that would need to be put into the long term timeframe because they rely on major changes in government policy, pricing and other mechanisms;
- Understanding the day to day issues faced practically by different logistics sectors, and the type of mechanisms they would consider to tackle these (physical, operational and behavioural);
- Ensuring that the emerging servicing and logistics solutions properly reflect the true wide range of freight, right from 'dotcom' through to distribution, from manufacturing to service sectors. Many people do not see the Tesco home delivery van as 'freight', just a local service but should it be included in Birmingham Connected?;
- Considering best practice from TfL and other cities reflects 'servicing and delivery' strategies rather than 'freight';
- Proactively targeting the soft / behavioural issues (around customer purchasing and procurement, travel planning, Green Travel Districts, internal management and operations), as well as the 'hard' solutions (including ITS, TROs / parking management, capacity management, and physically changing road layout). The servicing / deliveries angle neatly covers the operational / on-road issues but the logistics angle tackles the management approach and thinking that causes the freight in the first place; and
- Road testing the emerging ideas and solutions in an iterative manner and understanding how far the supply chain industry has self-managed and tackled these issues. A key point is that sub-optimal supply

chains still operate due to customer demand and their behaviours rather than any unwillingness on the part of logistics providers part to maximise loadings/backfill and efficient routing and timings.

In order to help focus the key stakeholders, Atkins used a set of 'prompt' questions, to stimulate debate and ideas. These were used in the one to one meetings and also issued out to stakeholder networks to elicit their own responses (Business Improvement Districts, Road Haulage Association, etc). The key questions that were used as a guide are set out in Table 3.4.

Table 3.4 Interview Questionnaire

Question	
1	What are the biggest logistics challenges for your organisation in Birmingham today?
2	How have you needed to change your operational profile to address issues such as delay / congestion?
3	What kind of metrics do you hold in terms of these challenges?
4	How responsive are your customers to adjusting their expectations and delivery times or are they 'narrow' in their outlook?
5	What measures 'on the ground' would make servicing and deliveries work better?
6	What management and process measures would make the Birmingham system work better?
7	How do you see the 'freight' network in Birmingham in the future?
8	What are your biggest concerns about the viability of servicing and delivery activities in the future?
9	What ITS solutions do you see as needed to optimise freight as part of your longer terms vision?
10	What opportunities do you see in relation to fleet renewals and plans for the use of ULEV?
11	What data / insight material would you be willing to share on a confidential basis?
12	Are there any other points?

4.4 Summary of One to One Consultation Feedback

The consultation and engagement process enabled the development of a stronger picture of the logistics needs, and acceptable solutions that need to be taken on board within the short, medium and longer term timeframes of the Birmingham Connected. Quite deliberately, the questionnaire responses demonstrate a breadth of needs and issues depending upon the specific sector and their day to day logistics patterns driven by their customers.

The key findings from the interviews revealed that:

- There was a willingness to look at technology and behaviour as key components of the forward strategy, given the 'moving feast' of the logistics sector, particularly retail;
- Having certainty on routing timings / delay and joined up information between the Highways Agency network and the wider Birmingham / West Midlands local authority network was seen as crucial (specifically journey times on the key arteries and providing advance warning of delays so drivers can self-select which junctions they use);
- Consolidation could work in both local centres and in the city centre, but it would need to be selective and (for example, foodstuff and chemicals could not mix, and high value items would be inappropriate);
- The existing supply chain processes already optimise the level of consolidation and full loading that can occur. This is customer driven and specific logistics centres already consolidate as best possible (for example, Hams Hall in Warwickshire), so that local authority brokerage for major retailers etc is not likely to be of value;

- Linked to the above, local authority brokerage and support for consolidation and joint procurement for SMEs and smaller clusters of businesses that need to work together (aka London 2012 Olympics approach) would be welcomed and seen as valuable for those smaller businesses that still have an opportunity to generate a fair amount of freight traffic;
- Use of new technology must not conflict with health and safety issues, therefore use of sat navs and hand held devices is actively discouraged / prohibited and any 'live' traffic information and re-routing should be addressed through voice messaging and roadside ITS;
- Use of physical measures such as designated freight parking areas and hold back areas is needed but they need to be well-signed;
- Use of technology to give advantage to HGVs and to keep them moving along with other traffic is welcomed (for example, the advance traffic signal detection as being developed in London);
- Use of collaborative planning and support tools was welcomed (for example, 'freight friends' schemes where larger retailers offer out their delivery space to other smaller independent traders for use in loading / off-loading, possibly using more sustainable vehicles / cages to transport the goods to their final destination). This relies more on brokerage and communication;
- Use of the Green Travel Districts and the existing Business Improvement District structure to facilitate the spreading of peak hours and a more flexible approach to servicing was welcomed;
- Use of Freight Action Plans to try and get procurement and sourcing aligned was welcomed, particularly between smaller enterprises and businesses;
- There will still be a need for HGVs and smaller HGVs to access the city centre as many deliveries are made to multiple locations. Whilst the hierarchy of vehicles tends to match the end destination 'family' (e.g. supermarket superstore versus local district store versus petrol station outlet) there is still a requirement to cross the city so the retention of the Birmingham tunnels is vital to the reliability of this process, and to avoid unnecessary heavy goods vehicle traffic interspersing with local traffic or pedestrians; and
- There is a need for Birmingham City Council to be more of an enabler in terms of servicing and logistics. There is a particular concern regarding the strict tightening of parking waiting times and enforcement of penalties, particularly for serving emergency repairs and access to telecoms and other essential IT infrastructure. The end result has been an acceptance of the fine regime, which has to be borne by the utility provider, not the end customer. A more flexible approach to active street management and the 'human enforcement' aspects were sought.

The full details of each of the discussions is set out, for evidence purposes, in Appendix D, but the above summary provides a generally positive view of the industry towards Birmingham Connected and the way in which it is linking freight and logistics management to the overall aims of quality of place and the enhanced environment and quality of life that Birmingham City Council wants to offer its residents, workers and visitors. There is a strong indication that the role that freight operators and their customers can provide is welcomed and supported.

It should be noted that now dialogue has been started across the industry sectors, there is an expectation that this will be the start of an enhanced profile for freight and potentially more engagement via the Freight Quality Partnership (FQP) process. Whilst Atkins does not expect the overall thrust of the findings to change, responses to consultation and engagement will feed through on an ongoing basis to the end of September 2014 and potentially beyond.

4.5 Ongoing Engagement

In order for the logistics sector to enact many of the ideas put forward in Birmingham Connected, ongoing dialogue and road-testing is crucial to the successful delivery of expected outcomes. Unlike 'single event' consultation, which takes place when a physical scheme is introduced, the industry sector can offer a great deal in terms of expertise, understanding and practical planning. Given the need that many initiatives focus on the more behavioural or operational practice interventions, the capacity to make a step change in freight patterns must be worked through with the following structure in order for it to succeed harnessing these skills:

- Freight Council / FTA / FQP vehicle (already existing);

- RHA;
- CILT;
- Chamber of Commerce and FSB as key intermediary bodies;
- Key industry sector providers (construction, retail, manufacturing logistics, utilities etc);
- Representative SMEs; and
- Full integration within BIDs and wider Green Travel Districts as they emerge.

Hence there is a clear need to consult across the board (beyond the Freight Council) with the wider 'freight family', covering large businesses, SMEs, professional organisations and intermediary bodies. It is critical that the consultation momentum is continued where possible.

This will need to be complemented by strong support from the Highways Agency, LEPs and surrounding West Midlands Metropolitan Councils which will need to follow a similar corridor based 'SUMP' process in order to realise the rerouting and timing strategies, particularly in relation to major arteries off the Birmingham Motorway Box.

Through this development process, not only are there now a series of measures that are seen as effective and practical; but a logistics sector that is supportive of the 'glue' role of Birmingham Connected and a sector that wants to be engaged in the detail of the individual measures as they come on stream.

5 Development of ‘Menu of Measures’

5.1 Introduction

Following the technical stage of the project, a review of best practice (See Appendix E) and the consultation and engagement process, a ‘menu of measures’ was devised, setting out a list of the possible servicing and logistics measures for four different typologies in the city:

- City centre;
- Arterials and strategic routes;
- Local centres and neighbourhoods; and
- Residential streets.
- Each of the measures has been categorised within three different groups:
- Physical – for example, new charging points for electric vehicles;
- Operational – for example, a new online freight atlas; and
- Behavioural – for example, collaboration in the procurement process.

The final Birmingham Connected strategy should look to encompass all of the above types of measure, as it would not be possible to address the issues identified through focussing just on physical interventions, for example.

5.2 Scoring of Measures

Having set out a draft ‘menu of measures’, it was necessary to undertake some filtering to determine which measures would be appropriate in a Birmingham context, based on the issues identified in the technical review, best practice review and emerging findings from the consultation process.

Each measure was scored against a range of criteria, as detailed below:

- Extent to which the measure works with the four ‘Rs’, as used for the London 2012 Games Freight Management Strategy:
 - Reducing deliveries;
 - Re-moding deliveries;
 - Re-timing deliveries; and
 - Re-routing deliveries.
- Which logistic and servicing sectors are impacted by the measure, ranging from major retailers to construction and the office service sector;
- Deliverability of the measure, under the following criteria:
 - Whether the measure could work in Birmingham and its relevance;
 - Whether the measure can be delivered in Birmingham using a technically sound approach;
 - Whether the measure can be delivered in Birmingham using the skills of Birmingham City Council and other stakeholders;
 - Whether the measure can be delivered in Birmingham and meet customer needs;
 - Whether the measure can be delivered in Birmingham with an acceptable impact on local communities;
 - Whether the measure is financially sustainable; and

- The likely strength of the Benefit Cost Ratio (BCR).
- Whether the measure is aligned to the following SUMP goals:
 - Economy;
 - Carbon and emissions;
 - Safety and health;
 - Quality of life; and
 - Equality.

It should be noted that the above scoring process was undertaken by Atkins, based on the data and knowledge captured to that point in time. A key subsequent stage in the methodology, as detailed later in the report, is the road-testing of the scores assigned, to ensure that they are appropriate. Further details on these criteria and the methodology can be found in Appendix F.

5.3 West Midlands Freight Strategy

Before looking at measures, it is important to ensure that any proposals for Birmingham align with the ambitions for the wider region. As such, this sub-section provides a brief summary of the West Midlands Regional Freight Strategy, as produced by Centro (now the West Midlands ITA) in 2013.

5.3.1 Objectives of the West Midlands Freight Strategy

The objective of the current West Midlands Freight Strategy is to deliver investment in freight with the vision of ensuring that freight is safer, more reliable and efficient.

The two key objectives of the strategy are to:

- Support sustainable economic growth; and
- Reduce carbon emissions. Centro is co-ordinating the development of the West Midlands Freight Strategy in partnership with seven metropolitan local authorities including Birmingham City Council.

The Freight Strategy recognises that the West Midlands area has a diverse economic structure including service, manufacturing, technology, retail and transport. Due to the diverse structure differing freight demands are created within the area and include the following. The differing freight demands are reflected by the mode used to transport the freight into and out of the area.

5.3.2 Key Issues identified in West Midlands Freight Strategy

In producing the document, Centro liaised with stakeholders to identify a number of key issues which need to be addressed to meet and support the objectives of the freight industry. They are as follows:

1. **Accessibility to and Journey Reliability on West Midlands Motorways and Trunk Roads:** Stakeholders highlighted that, although reliable journeys on motorways and trunk roads are important, access to motorways via junctions in the West Midlands area was also an issue;
2. **Maximising Rail Freight Accessibility and Connectivity:** In order to capture economic and carbon benefits of rail freight there is a need to enhance business access to the rail freight network and to promote new rail freight corridors'
3. **Imbalance of Road Freight on the M6 and M6 Toll:** It is identified that, currently, 7,000 HGV trips per day occur on the M6 which could otherwise occur on the M6 Toll. This would reduce congestion on the M6;
4. **Urban Road Network Journey Reliability:** Stakeholders identified that journey reliability for localised urban freight and 'last mile' road freight was a key concern, as it increases business costs and reduces competitiveness;

5. **Maximising Water Freight:** In the West Midlands area more than 100 usable canal miles remain today including Grand Union, Stratford, Worcester and Wolverhampton canals. They provide access to key centres such as Birmingham, Wolverhampton and Coventry;
6. **Efficient Deliveries to Centres and Towns:** A key concern was that restrictions for deliveries into centres is reducing flexibility for deliveries and may be inadvertently creating demand for on street unloading during peak hours. Finally there is a need to work with delivery companies to reduce the number of missed calls;
7. **Improving Air Quality:** Road freight movement is recognised to be significant contributor for poor air quality. Currently six of the seven local authorities have declared their area as an Air Quality Management Areas (AQMA) in relation to NO₂ levels (except Solihull) and Birmingham has also declared itself as an AQMA in relation to particulate matter (PM₁₀);
8. **Improving Freight Vehicle Road Safety with Vulnerable Road Users:** HGVs and LGVs have interaction with other road users on a daily basis. The main issue raised regarding this is the interaction between HGVs and LGVs and other vulnerable road users such as cyclists and pedestrians;
9. **Safe and Secure Overnight HGV Parking:** A report by the DfT in 2011 concluded that there were insufficient amount of lorry parking facilities within the West Midlands area. Furthermore, in 2010, the West Midlands area had a total of 252 recorded crimes in relation to HGVs. Birmingham, Sandwell and Walsall had the highest levels of recorded crime;
10. **Air Freight – Maximising Economic Benefit, Minimising Carbon Impact:** The aim should be to maximise the economic value of airports in and around the area, particularly Birmingham International Airport. Additionally, good road access to these airports will also be required; and
11. **Providing the Strategic Rail Freight Interchanges and Intermodal Rail Freight Interchange Capacity to Meet Future Growth:** Centro is keen to see the widest range of businesses use rail freight for their national and international freight movements. However, stakeholders have raised concerns that the location of sites (away from central areas) is not very conducive for SMEs.

5.3.3 Use of the West Midlands Freight Strategy in Birmingham Connected

The West Midlands Freight Strategy has already identified a number of important proposals. Hence this represents a starting point for the 'menu of measures':

1. **Additional Managed Motorway Schemes:** The Highways Agency (HA) started its 'managed motorway' scheme in 2006 and a post study of the first trial between J3a and J6 on the M42 found that the scheme had resulted in the reduction of collisions per month, increase in driver's ability to predict their weekday journey times and a reduction in fuel consumption and vehicle emissions. Although, the HA has completed a number of other 'managed motorway' schemes in the area since then, the strategy has identified other schemes that it believes are crucial;
2. **Safe and Secure Overnight HGV Parking:** Although HGV parking along the national routes is required, localised HGV parking facilities are also required to meet the demands. This will be support deliveries to and from centres, industrial areas and business parks. Such facilities allow drivers the flexibility to make deliveries and meet driver time regulations. The strategy has identified a number of potential sites including four sites in Birmingham including West Birmingham, East Birmingham, North Birmingham and South-West Birmingham.
3. **Freight Consolidation Centres:** Consolidation centres have been developed on the premise to reduce the number individual deliveries required to serve businesses and other organisations within a centre through consolidation of loads into a smaller number of vehicles. The strategy found that the following types of consolidation centres are feasible in the metropolitan area:
 - a) **Urban Freight Consolidation Centres** – by their nature are principally focussed on consolidating deliveries to the retail/supermarket sectors. A study found that an urban freight consolidation centre in Birmingham would be of benefit.
 - b) **'New Development' Consolidation Centre** – They are smaller consolidation centres specifically designed for new developments.

- c) **Construction Consolidation Centres** - Construction consolidation centres look to reduce on-site storage and deliveries required for construction of new developments therefore reducing the number of road based journeys. Birmingham New Street Gateway is an example of this whereby materials required each day are brought into the station from on offsite construction consolidation centre on a daily basis.
 - d) **'Business / Sector Cluster' Consolidation Centres** – Centro believes that there is opportunity for this to serve single employment centres, business districts or public centre clients. However, this does require co-operation between businesses.
4. **Supporting a Greater Use of Water Freight** – The West Midlands Freight Canal Study highlighted significant potential for the movement for low value, time unrestricted freight movements such as domestic waste or construction aggregates. The study identified 49 sites in Birmingham and 27 in Coventry. However, the majority of these were not protected for freight related activities or developments.
5. **Enhanced Local Deliveries** – This proposal focuses on efficient and effective local deliveries to homes and businesses in local centres which includes making efforts to reduce missed home calls. Currently, the mixed use nature of local centres and competing demands for kerb space has limited the ability for efficient and effective deliveries as a consequence of inappropriate parking, noise restriction order and a lack of loading bays and other facilities. As part of the proposal in the strategy the following will be undertaken:
- a) **Adoption of loading / unloading code of practice** by all local highway authorities for supporting urban deliveries.
 - b) **Trial of quiet delivery demonstration scheme and other time restrictions.**
 - c) **Explore the use of 'Delivery Service Plans'** to understand how businesses can save resources through more efficient use of deliveries and suppliers.
 - d) **Greater use of intelligent transport systems** such as apps, websites, personalised routing systems and loading bay booking systems. To objective would be to provide high quality information and interactive personalised services to meet individual needs.
 - e) **Supporting efforts to reduce missed home deliveries** as well as supporting delivery companies presently expanding the use of personalised delivery options such as collections at rail or bus stations and shopping malls. An example of this is the Amazon collection and drop off point for returns in the Bull Ring Shopping Centre in Birmingham.
6. **Maximising the Economic Benefits of our National Airports:** Birmingham Airport has been identified as having capacity to increase its freight handling capacities. In particular, this is as a result of the extension of the runway, operational in 2014. The West Midlands Economic Forum has suggested that the airport has the capacity to increase its freight handling capacities to 800,000 tonnes per annum by 2030.

5.4 Proposed 'Menu of Measures'

The measures are set out in the following tables:

- City Centre – Table 5.1;
- Key Arterials and Strategic Routes – Table 5.2;
- Local and District Centres – Table 5.3; and
- Residential Streets / Neighbourhoods – Table 5.4.

Note that these four categories used are deliberately not consistent with the link / place matrix developed by Work Package 1. This is because, for the purpose of initially identifying and road-testing measures, it was felt that a breakdown into the However, later in the report, the measures are mapped against the 5*5 matrix as developed by that package.

The left column in each table indicates the type of measure:

- Physical measures – denoted 'PHY';

- Operational – denoted ‘OP’; and
- Behavioural – denoted ‘BE’.

Supporting comments have been provided in the ‘Initial Scoring’ column for all the measures which have been scored as ‘amber’ or ‘red’ in the RAG assessment.

The full menu is provided electronically in Appendix F, showing individual scores allocated to measures.

Table 5.1 'Menu of Measures' – City Centre

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
PHY	Provide electric charging points for LGVs within city centre servicing areas	Technology becoming wider for private vehicles, but is now being trialled by TfL for commercial vehicles in London	Concerns surrounding technology availability (currently being trialled in London) plus concerns regarding fit with operational profile (i.e. do operators have sufficient city centre layover for this to be useful?). Also concerns regarding site availability and ownership of infrastructure
PHY	Introduce a permanent Low Emission Zone in the city centre area	In response to the air quality problems noted in the city. Birmingham is noted as one of the worst cities in the UK. A Low Emission Zone was introduced in Lyon in 2007, in an attempt to reduce the environmental impact of freight in the city centre. Birmingham has designated itself as an AQMA. Important to note the results of the Amey trial	Despite the green scoring, it is important to note the resistance from the industry regarding this measure
PHY	Ban deliveries for certain hours during the day unless an electric / low emission vehicle is used	Similar in nature to a full time Low Emission Zone, but would involve introducing timescales for different vehicle types to adhere to. Would give strong control in regard to re-timing	Dependent on the speed of vehicle technology. Could be some undesired consequences regarding more polluting vehicles accessing overnight
OP	Replace existing 2005 Freight Atlas with an online version linked to SatNAV technology	Current version expired in 2005. There is a general desire for an updated version which could incorporate some of the emerging plans from Birmingham Connected but the use of a sat nav based system is not supported by the industry	
PHY	Route HGVs away from shared space areas during daytime	Accident analysis confirmed that HGVs are over-represented in terms of accident collisions. In addition, 23% of all collisions involving a goods vehicle also involved a pedestrian or cyclist. In Ljubljana, Slovenia, access for deliveries into the pedestrian zone is only between 06:30 and 09:30 to avoid conflicts with shoppers and tourists	
PHY	Provide clearer signing to denote 'unsuitable' routes for different types of freight vehicle	Could be linked to the updated Freight Atlas	

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
PHY	Make LGVs use preferred routes to avoid pedestrian conflict	Similar to that above for HGVs. This is to avoid rat-running by LGVs which may bring them into conflict with pedestrians in busy areas. In Ljubljana, Slovenia, vehicles exceeding 3.5 tonnes cannot enter the pedestrian zone at any time	
OP	Provide a logistics control centre to allow advance journey planning, real-time advice on routing and advice on hold-back when emergencies occur	In response to numerous concerns during the one to one consultations that journey delay is a major problem in the supply chain	
OP	Provide advance warning of temporary and emergency roadworks on a live real-time map, showing anticipated delays with forward alert service	As above. It is key that roadworks are included – to allow for flexible route planning by logistics operators	
PHY	Provide hold-back parking bays to allow safe waiting away from the city centre core area. VMS or similar would be used to provide information to users on the conditions on the route ahead	In response to concerns that there are insufficient hold-back areas to allow for vehicles to wait prior to a delivery slot being available. Noted as a concern across many sectors, including construction. The one to one consultation highlighted that the existing parking area on Brewery Street is not well publicised. The West Midlands Freight Strategy states that a report by DfT recognises that there were insufficient amounts of lorry parking facilities within the West Midlands area	Strong link (and associated deliverability risk) with the VMS / ITS strategy documented elsewhere
PHY	Provide parking areas to avoid illegal pavement parking. Could take the form of 'stop and drop'	Generally, the feeling during the one to one consultation was that there are major problems in finding suitable loading / unloading areas for the shopping areas which don't have specific servicing areas. Consultation with many operators confirmed that the level of enforcement appears unreasonable (particularly of recent) and access for servicing / repairs for companies like BT is particularly troublesome. The end result for many companies has been acceptance of the fine regime. All the measures to the left focus on either provision of additional bays (which may be required in specific locations), but the focus is really on more efficient use of existing bays. Examples of the measures include providing real-time information on the utilisation of loading bays. The West Midlands Freight Strategy makes reference	
PHY	Introduce designated freight delivery bays at regular intervals throughout the central area		
OP	Allow purchase of pre-paid parking meter cards to avoid fines / charges		May be issues of affordability, but needs to be off-set against possibility of incurring a fine
OP	Provide electronic information on the availability of loading bays and the possibility to pre-book these (see trial in Birmingham)		
PHY	Provide 'virtual' parking bays protected by rising bollards and linked to automated booking system		

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
PHY	Provide real-time loading bay sensors to show occupancy or otherwise	to the adoption of a loading / unloading code of practice	Well developed technology for individual bays but limited use for commercial vehicles etc
OP	Launch a 'servicing yard freight scheme' allowing emergency repair companies to work from retailer yards, etc	Given the problems outlined above, this measure would make better use of existing servicing facilities	May not be sufficient availability to be useful
BE	Set up a code of conduct for utilities / statutory undertakers that need to attend emergencies	These measures have been included following the one to one consultation with BT, which raised a number of issues regarding access to sites. In the case of BT, the van or servicing vehicle acts as the 'toolbox' and hence working remotely from the vehicle is not a workable solution	
OP	Provide ability to request, pay for, approve and issue operational notices to ensure these are provided to contractors ahead of site visits		May be issues around equity and determining which providers should be included in such a scheme
OP	Introduce a dispensation system for certain types of emergency / business critical deliveries (gas, electricity, etc)		
PHY	Design safe street to prevent pavement overrun but without street clutter and access problems for disabled people	Aiming to improve the environment for pedestrians in the city centre	Useful measure but likely to be difficult to achieve a high BCR. Should represent 'business as usual' in the future
PHY	Provide high quality pavements to avoid damage to kerbs, dropped kerbs, pavements and tactiles etc		
OP	Consider 'tidy street' measures to allow consolidation of waste for on-street collection	Already done to a large extent, but there is clear scope to reduce street clutter in a number of environments in Birmingham to avoid conflict with deliveries	BCR likely to be questionable, despite it being relatively cheap to introduce
PHY	Create a city centre logistics hub for smaller businesses / goods and fleet of electric vehicles or cycles for onwards deliveries	Both of these measures are looking at small scale consolidation, in line with the opportunities outlined by Centro in the West Midlands Freight Strategy. The measures include the use of cycle / sustainable logistics for the last mile delivery	Depends on market sector size and hence potentially questions around commercial viability
PHY	Introduce cycle logistics hubs to cater for light / small unit goods within the Ring Road		
PHY	Transport rail freight (light goods - similar to Colas Euston trial) via city centre railway stations (potentially using Curzon Street in the future)	Colas Rail is currently running a trial of services into London Euston at night. This measure is relatively broad and consists of making more use of rail freight as a whole, be it at the existing city centre railway stations, at the new high speed station or at existing rail freight terminals close to the city centre, such as Landor Street. Hence a variety of different measures could be looked at relating to rail freight	Shown as red based on using passenger stations, but likely to be green if using facilities such as Landor Street for increased rail freight. See text in Chapter Seven

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
PHY	Transport freight using Midland Metro Light Rail System (similar concept to the 'Freight Tram' used overseas)	The system is being expanded to penetrate the city centre more fully. Hence there is an opportunity to consider its use for freight (potentially overnight), similar in nature to those used in Amsterdam	Tried in Europe, but feasibility of this remains questionable, with reliance on loading at some point between Birmingham and Wolverhampton. See text in Chapter Seven
PHY	Use canal network for transport of construction materials / similar	In line with the aspiration of Centro set out in the West Midlands Freight Strategy. The West Midlands Freight Canal Study highlighted significant potential for the movement of low value, time unrestricted freight movements such as domestic waste or construction aggregates	Score reflects the limited impact this measure is likely to have. See text in Chapter Seven
OP	Provide signage from the Ring Road for goods vehicles to access specific delivery 'quarters'	Linked to the re-routing element of the strategy, aiming to embed better journey making decisions rather than having vehicles using inappropriate routes	
PHY	Provide freight access gates (at key points from the Ring Road into city centre quadrants')	Measure requires proper development, but the theory would be that deliveries could be made via freight only routes from the Ring Road. Could be linked to use existing bus gates, such as those at Highgate	
OP	Allow 24/7 deliveries in the city centre with a quiet deliveries charter and flexibility within the planning process	This would aim to spread the daily profile of deliveries. The West Midlands Freight Strategy advocates the trial of quiet delivery demonstration schemes and other time restrictions	Depends on proximity to existing and future residential development
BE	Provide a freight action plan and business service advice (e.g. London 2012 Freight Advice Programme) for large businesses, clusters of SMEs and smaller organisations with complex supply chains	Would entail in-depth dialogue with businesses to really understand their supply chain and rationalise deliveries	
BE	Provide freight advice leaflet and mapping to city centre businesses via online tool / phone app	Needs to be capable of audio / in-vehicle delivery, following feedback from some of the consultees regarding avoiding the use of SatNav based products	
BE	Offer driver training programme (lower emissions and considerate driving)	Could be linked to a loading / unloading code of practice, as desired in the West Midlands Freight Strategy	
BE	Develop sustainable freight initiatives / logistics demonstration projects, leveraging off EU funding (site specific)	Making use of the extensive case study material which is available from the EU	

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
BE	Promote use of cycle logistics for last mile deliveries	Already happening to a limited extent, but there is clear scope to increase this, particularly given the relatively	
BE	Embed freight and logistics solutions into city centre business travel plans / Green Travel Districts	A review of a selection of travel plans for new developments in Birmingham showed that the servicing and logistics element receives little or no attention	
BE	Use the planning process aggressively to secure quality servicing and delivery plans as part of construction and steady-state transport activity	To engrain good servicing behaviour from the outset, avoiding the need to 'retrofit' this or rely on the other measures outlined in the menu	

Table 5.2 'Menu of Measures' – Key Arterials and Strategic Routes



Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
PHY	Remove pinchpoints from the network such as narrow lanes and splitter islands	To benefit both the movement of freight but to ensure instances of poor or sub-standard crossings are removed, thereby aiming to help pedestrian movement	
OP	Introduce clear shop front policy to avoid blocking pavement for deliveries and pedestrians	Similar to that suggested for the city centre environment, to ensure that deliveries are not hindered by excessive street clutter	
PHY	Provide adequate bays for parking bays with sufficient width for LGV / MGVs to stop and drop	All these measures seek to make better use of the available delivery space, but with the provision of new loading / unloading facilities where this is not practical	
PHY	Allow flexible use of taxi ranks to allow for deliveries in off-peak periods		Depends on location specific circumstances and exact time of day. Overnight deliveries could clash with busy periods at taxi ranks. Issues of legality would need to be considered
BE	Create local trader 'freight friends' parking schemes that allow cross-parking / utility vehicles to share spaces		
OP	Introduce a blue cone scheme to cordon off kerbside parking at certain times of day to allow for deliveries		
PHY	Allocate spaces within public car parks for logistics and servicing vehicles		Heavily dependent on turnover / income etc – hence local circumstances
OP	Introduce ITS solution to pre-book loading bays on busy routes to optimise planned usage and reduce poor parking		
PHY	Provide VMS signage on key freight corridors - including reliable information on journey times		The West Midlands Freight Strategy identifies that there should be greater use of ITS, part of which would relate to delivery vehicle routings. Hence the measures are based on
OP	Link to Highways Agency strategic signage – development of a more informative signage system linked to the control centre for Birmingham/local authorities		
PHY	Use VMS signage on motorways to give reliable journey time information into city on radial routes		

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
OP	Introduce parallel route warning system - encouraging freight to stay on existing corridor where feasible		Depends on availability of parallel routes to accommodate some demand
PHY	Introduce freight gates to allow freight to get past stationary traffic	The analysis of modelled PRISM HGV journey times showed that the average speeds vary considerably on the radial routes. The one to one consultation confirmed that journey reliability is a major problem on the radial routes in Birmingham and hence these measures look at different ways to provide a level of priority over general traffic	
OP	Introduce ITS strategy to allow advance detection of HGVs to change lights to green to keep traffic moving		
PHY	Allow freight to use bus lanes in peak periods	This measure would see delivery vehicles being able to use the facilities throughout the day, providing a benefit over general traffic lanes. Some bus lanes in Birmingham are in place 24 hours per day, but some allow general traffic to use them outside of core hours	Useful from a freight perspective but significant concerns from a wider Transport Planning perspective
PHY	Introduce freight consolidation centres to service Birmingham and other major towns, situated close to motorway junctions	The West Midlands Freight Strategy advocates the use of freight consolidation, at appropriate locations and for appropriate materials. A feasibility study undertaken by Birmingham City Council confirmed the concept was worthy of more detailed consideration. The one to one consultation showed a willingness to contribute / participation, but funding remains an issue	
PHY	Introduce neighbourhood local consolidation (with 24/7 operation) booth or similar (temporary modular structure or potential re-fit of vacant unit to increase vibrancy)	This would see consolidation but at a more local level than that outlined above. A vacant unit in a row of shops could be used to host this facility, allowing out of hours deliveries. The West Midlands Freight Strategy advocates use of a variety of methods of consolidation for differing environments	Identified as a useful measure but not tried and tested in the format being proposed
OP	Ensure that GTDs actively encourage a consortium approach to logistics within each area	The Green Travel Districts provide clear geographical scope for targeting use of a number of initiative, including a consortium approach to logistics, whereby supply chains are rationalised and costs are potentially shared across a number of businesses	
OP	Form local traders' freight consortium to allow full utilisation of rear / frontage servicing to benefit other shops	Similar to 'Freight' Friends', in that the objective is to make best possible use of existing facilities	Site specific circumstances may limit the usefulness of this

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
OP	Maxi Taxi delivery system working through the freight consortium to offer home delivery from local shops to customers who find it difficult to access services	Is of benefit to the customer rather than the logistics provider	
OP	Allow 18/7 deliveries (05:00 to 23:00) with quiet deliveries charter and flexibility through the planning process	Provides clear alignment with the re-timing objectives, with the aim being to spread deliveries across a longer window, therefore reducing pressure on the highway during the peak and inter-peak periods	A blanket approach is unlikely to be appropriate – but may work in some locations to spread the daily delivery profile
BE	Create GTD lite freight partnerships that allow mutual sharing of servicing and delivery space	A specific measures for the Green Travel Districts, promoting sharing of facilities	
BE	Create area wide travel plans targeted at groups of SMEs with a single umbrella logistics plan	Aiming to address the procurement streams of groups of businesses	
BE	Introduce joint procurement / brokerage service to allow SMEs to pool purchasing power and generate 'single' deliveries		
BE	Launch an electric freight vehicle grant scheme to allow SMEs to apply for a shared electric delivery plan	To spread the cost of this sustainable measure across a number of different businesses, considerably increasing the commercial viability	
BE	Introduce strategic GTDs at motorway junction locations to include logistics and distribution companies	Requires alignment with GTD package	
BE	Improve awareness and usage of Birmingham City lorry / coach park as part of hold back area approach. Also scope to create new lay-by facilities covered by VMS to alert on upcoming conditions	The one to one consultation highlighted that this facility is not necessarily well known and hence it could play a larger role than it does currently in holding back deliveries. The West Midlands Regional Freight Strategy advocates providing safe overnight parking and hence better use of the Birmingham City lorry / coach park aligns with this. Changes to the charging structure at this site were made in March 2014 to try to encourage greater usage	Currently only one such formal facility, hence limited level of impact when considering city-wide impacts

Table 5.3 'Menu of Measures' – Local & District Centres

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
PHY	Provide designated servicing points for each local centre	May be an extension of 'business as usual' in some case, but the measure is to ensure that the problems seen within the city centre and on the strategic routes is not replicated at local and district centres	
PHY	Share a freight delivery pod across local centre traders		
PHY	Introduce hold-back locations which are clearly signed and mapped	As also proposed for the city centre, to ensure that deliveries are not parking and causing a hazard whilst waiting to make a delivery. These areas would require clear designation to avoid use by general traffic	
BE	Provide access / local routing maps	Measures designed to provide an awareness of any potential hazards or issues in the vicinities, such as schools. The one to ones confirmed that many companies making regular deliveries already have a good local knowledge, but this could be particularly applicable to those deliveries which are infrequent or for companies whose drivers do not have regular patches	
BE	Provide on-line factsheets for logistics providers and retailers covering the local area, including school locations		
OP	Introduce a light consolidation approach through partnership working. Allow pick-up of goods (particularly .com)	Similar to that proposed on the arterial routes. This could consist of allowing	
OP	Introduce a trader consortium for logistics deliveries to reduce demand for deliveries	To reduce the number of freight movements being made, through smarter supply chains and collaboration wherever possible	

Table 5.4 'Menu of Measures' – Residential Streets

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Commentary / Justification	Initial Scoring
PHY	Design environment to prevent all HGV movements - for example, gateway treatments	In localised cases where there may be HGVs making inappropriate routing choices. May require more detailed survey work to determine where and why this is occurring. Use of gateway treatments is recommended to try to discourage this	
PHY	Provide delivery bays at strategic locations in each street	Provision of additional bays in instances where there are acute shortages. Note that this needs to be considered in line with the other measures, as the general re-timing strategy should serve to flatten the delivery profile	
OP	Introduce electric vehicle deliveries from local centres	Embracing the use of sustainable vehicles wherever possible	
OP	Provide ability for goods to be left at a local pick-up hub (for example, in the district centre) if people are out	This measure seeks to avoid unnecessary delivery mileage. This is consistent with the West Midlands Freight Strategy's aspiration to reduce 'missed home' deliveries. The West Midlands Freight Strategy advocates the use of railway stations etc for this purpose too	
BE	Ensure Construction Traffic Management Plans route vehicles away from residential areas	Should be 'business as usual' but this measure is to ensure that the guidance is being used properly and consultants / councils working with CTMPs are considerably local issues sufficiently and instead encouraging use of the most suitable routes	
BE	Introduce flexible timing restrictions through the planning process - for example no deliveries near a school between 08:00 and 09:00	Seeking to ensure the industry works hard to avoid sensitive locations	
BE	Introduce an anti- rat run campaign	Similar to the gateway treatment described above, again to ensure that routings are not made through inappropriate locations	
BE	Agree a code of conduct for white van / small deliveries supported by FTA and other parties	In line with the West Midlands Regional Freight Strategy	

6 Workshop and Testing of ‘Menu of Measures’

6.1 Introduction

Having developed the draft ‘menu of measures’, it was necessary to ‘road test’ this with the wider freight industry. This chapter provides details on the stakeholder workshop held as part of the consultation and engagement process.

6.2 Workshop Purpose and Format

Building on the findings of the one to one consultation, the purpose of the workshop was to engage with the freight industry in order to:

- Determine the freight industries’ main causes for concern in Birmingham; and
- Help inform the development of the ‘menu of measures’ by obtaining the view of industries towards the perceived appropriateness, need and potential success of each measure.

The results of the workshop were used to finalise the measures to address the challenges of freight delivery within Birmingham.

The workshop was held on 24th July from 08:30 to 11:30, with the attendance outlined in Table 6.1.

Table 6.1 Workshop Attendees

Name	Organisation
Brian Hancox	Speedy Services
Don Hambleton	Regional Officer, CILT
Jamie Wiseman	Epyx
Louise Thompson	OSS Group
Michael Woodhouse	Warburtons
Sally Gilson	Freight Transport Association
Wayne Vale	Warburtons
Jim Wright	Asda
Julian Pottinger	Little Pot Transport (Road Haulage Association)
Graham Ben	Fed Ex UK
Jon Harris	Atkins / Harris Ethical (Facilitator)
Kelly Kilby	Atkins (Facilitator)
Andy Clark	Atkins (Facilitator)
Kevin Cummins	Birmingham City Council
Chris Stack	PJA (Representing Birmingham Connected Package 4 – Green Travel Districts)
Matthew Tozer	WSP (Representing Birmingham Connected Package 2 – Public Transport)

The workshop began with an ice breaker session, where the attendees were asked to respond to two questions:

- What are the biggest logistics challenges for your organisation in Birmingham today – and how have you overcome some of your challenges?; and
- How do you see the ‘freight’ network in Birmingham in 20 years’ time?

The group was then split into two in order to undertake the following three sessions using a ‘world cafe’ style approach:

- Session 1: City Centre:
 - The attendees were presented with the ‘menu of measures’ developed for the city centre (as detailed in Chapter 5) and asked to discuss these within their group in order to ascertain whether they agreed with the general approach, the scoring of each measure and whether additional measures needed considering.
- Session 2: Arterials and Strategic Routes:
 - As per Session 1 but considering the strategic routes.
- Session 3: Local Centres and Neighbourhoods (two environments combined given the lower number of measures in the menu):
 - As per Session 1 but considering local centres and neighbourhoods.

Facilitators were split between the teams in order to ensure all measures were discussed. All attendees were given equal opportunity for involvement and to take notes.

6.3 Workshop Findings

The RAG assessment provided in the previous chapter was updated based on the results of the workshop, and the amended scores are set out later in this chapter. For example, some measures which were scored ‘green’ in the initial assessment were downgraded to ‘amber’ following the workshop. On the flip side, a number of measures were upgraded, reflecting a higher level of suitability. Note that at this stage the objective was to agree the appropriateness of the tool and its acceptability rather than allocate precise locations. For example, in regard to freight consolidation, the aim was to establish the level of support for the concept, rather than to establish the locations in Birmingham where this may or may not work.

Overall, the workshop process validated the ideas and proposals put forward, with the following caveats

- Certain locations / sectors were highlighted as not being appropriate for some of the interventions;
- Timing of introduction of some of the measures depends on wider changes in government policy and funding – so they were pushed back into the medium / longer term timeframes;
- The use of behavioural mechanisms was appreciated but there would be the need for a key body (professional association, local authority etc) to play a brokerage or ‘glue’ role; and
- Additional scope for water and rail but this would need to be seen in context with the wider economic regeneration objectives and road-based arterial network.

The results of this workshop were written up and are presented in the following sub-sections.

6.3.1 Question 1: The Biggest Logistics Challenges in Birmingham Today?

The biggest challenges identified by attendees were broadly split into four categories:

- Parking:
 - The lack of adequate parking for freight vehicles; and

- Other vehicles parking illegally and obstructing the flow of traffic, impacting heavily on journey times, fuel consumption and vehicle emissions.
- Road Conditions:
 - In terms of poor road maintenance and preparation for winter weather.
- Vehicle Access and Restrictions:
 - Including general road closures and road works, as well as specific restrictions on freight vehicles.
- Traffic Volume:
 - Congestion was raised as a serious concern, particularly in the morning peak.

The necessity to balance the needs of all road users, including buses (red routes/bus lanes), pedestrians and cyclists was also noted as a less serious concern.

A number of attendees shared their success stories at overcoming challenges, including:

- Liaising with customers to re-time deliveries or works to avoid peak period traffic;
- Re-timing deliveries to early in the morning;
- Planning routes better; and
- Using larger vehicles to carry out fewer trips over smaller vehicles making many trips.

6.3.2 The 'Freight' Network in Birmingham in 20 Years' Time?

Responses to the question fell into three categories – physical, operational and behavioural – with the results presented below:

- Physical:
 - The notion of freight lanes on certain routes received a lot of support;
 - Designated freight drop off / collection points; and
 - Better and cheaper public transport options to ease the amount of cars driving into the city;
- Operational:
 - Use of VMS to show clear route and traffic information;
 - 24 hour freight access (i.e. no restrictions);
 - Greater uptake of alternative fuels and more sustainable modes;
 - Greater levels of safety, reliability and efficiency;
 - Fewer HGVs during peak hours; and
 - Better planned road works to reduce the impact on traffic.
- Behavioural:
 - Reduce unnecessary trips on the wider network, such as school runs; and
 - Better driving standards and greater respect for HGVs.

This tended to validate the menu approach of considering the three aspects separately.

6.3.3 Session 1 to 3

There was general support for the approach taken to developing the menu of measures for the study.

The results of Sessions 1 to 3 have been summarised in Table 6.2 (city centre), Table 6.3 (arterial and strategic routes) and Table 6.4 (local and district centres) Table 6.5 (residential streets), showing:

- The comments received against each measures (where no comments have been made, general support for the measure was assumed); and
- Based on the comments received, whether the priority of the measure (as identified earlier, in Chapter Five) has been validated, or if it has been changed.

Table 6.2 'Menu of Measures' Post-Workshop – City Centre

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
PHY	Provide electric charging points for LGVs within city centre servicing areas	Concern regarding availability of technology. Concern that this would require dwell time which drivers do not have. Charging is more likely to be done at the courier's own facility before the journey is started	-
PHY	Introduce a permanent Low Emission Zone in the city centre area	There was an acceptance that this may happen and it would be beyond the control of the industry, but concern was raised regarding the possible unwanted effect of shifting more polluting vehicles elsewhere. Hence downgraded from green to amber. There was also concern regarding the introduction of another 'tax' to the industry	Changed from green to amber (downgraded)
PHY	Ban deliveries for certain hours during the day unless an electric / low emission vehicle is used	Linked to the above concerns	-
OP	Replace existing 2005 Freight Atlas with an online version linked to SatNAV technology	Most companies do not encourage the use of SatNav and hence would not back a move to a SatNav based atlas	Changed from green to red (downgraded)
PHY	Route HGVs away from shared space areas during daytime	Acceptance that this may be a useful measure but with a health warning that it may significantly increase HGV movements at certain times of the day	-
PHY	Provide clearer signing to denote 'unsuitable' routes for different types of freight vehicle	-	-
PHY	Make LGVs use preferred routes to avoid pedestrian conflict	Feasibility of this may be questionnaire. It was clear that whilst in theory it is a useful measure, the exact location would require detailed work	-
OP	Provide a logistics control centre to allow advance journey planning, real-time advice on routing and advice on hold-back when emergencies occur	Acceptance that this would be a strong measure, but the messages must be in plain English, avoiding using road numbers	-
OP	Provide advance warning of temporary and emergency roadworks on a live real-time map, showing anticipated delays with forward alert service	-	-
PHY	Provide hold-back parking bays to allow safe waiting away from the city centre core area	There is a strong need for this but concern was raised about the availability of land / street space to implement the measure	Changed from amber to green (upgraded)
PHY	Provide parking areas to avoid illegal pavement parking. Could take the form of 'stop and drop'	There is a big need for additional parking, so strong support for this measure and those which are similar	-

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
PHY	Introduce designated freight delivery bays at regular intervals throughout the central area	As above	-
OP	Allow purchase of pre-paid parking meter cards to avoid fines / charges	Availability was noted as a concern – especially with occasional drivers / visitors who may be unfamiliar with the ability to be able to buy a pre-paid card	-
OP	Provide electronic information on the availability of loading bays and the possibility to pre-book these	There was strong support for providing information on the availability of parking bays, but a mixed reaction in regard to being able to pre-book these, as it may reduce operational flexibility	-
PHY	Provide 'virtual' parking bays protected by rising bollards and linked to automated booking system	Example 'Snap' is already in place (private pre-bookable parking for freight)	-
PHY	Provide real-time loading bay sensors to show occupancy or otherwise	Strong support for this measure	Changed from amber to green (upgraded)
OP	Launch a 'servicing yard freight scheme' allowing emergency repair companies to work from retailer yards, etc	General support for this measure, with a number of attendees quoting examples of where this already takes place, albeit not on a formal basis	Changed from amber to green (upgraded)
BE	Set up a code of conduct for utilities / statutory undertakers that need to attend emergencies	This could be endorsed by the freight industry	-
OP	Provide ability to request, pay for, approve and issue operational notices to ensure these are provided to contractors ahead of site visits	Birmingham City Council process which should be able to adapt to changing circumstances	-
OP	Introduce a dispensation system for certain types of emergency / business critical deliveries (gas, electricity, etc)		-
PHY	Design safe street to prevent pavement overrun but without street clutter and access problems for disabled people	To be effective, would need to be complementary measures relating to driver training	-
PHY	Provide high quality pavements to avoid damage to kerbs, dropped kerbs, pavements and tactiles etc	General support for this, especially when linked to parking	Changed from amber to green (upgraded)
OP	Consider 'tidy street' measures to allow consolidation of waste for on-street collection	Can work well in terms of wider 'place-making'	-

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
PHY	Create a city centre logistics hub for smaller businesses / goods and fleet of electric vehicles or cycles for onwards deliveries	Most businesses try to consolidate as far as possible already. Need to be careful regarding mix of content. Some attendees noted that licensing means only their own goods can be carried. The measure has been kept as amber on the basis that the same obstacles would need to be overcome for strategic consolidation, which received more support at the workshop	-
PHY	Introduce cycle logistics hubs to cater for light / small unit goods within the Ring Road	The case study of Cambridge was brought up – which has been a success	-
PHY	Transport rail freight (light goods - similar to Colas Euston trial) via city centre railway stations (potentially using Curzon Street in the future)	The audience at the workshop was not able to provide detailed comments on this, and hence the original score has been retained, albeit with the caveat that the red score reflects the lack of tried and tested examples, but the opportunity to tie in with Landor Street may be significant	-
PHY	Transport freight using Midland Metro Light Rail System (similar concept to the 'Freight Tram' used overseas)	As above, hence original scoring retained	-
PHY	Use canal network for transport of construction materials / similar	As above	-
OP	Provide signage from the Ring Road for goods vehicles to access specific delivery 'quarters'	-	-
PHY	Provide freight access gates (at key points from the Ring Road into city centre quadrants')	-	-
OP	Allow 24/7 deliveries in the city centre with a quiet deliveries charter and flexibility within the planning process	Strong support for this measure, as longer delivery hours would suit many logistics firms	Changed from amber to green (upgraded)
BE	Provide a freight action plan and business service advice (e.g. London 2012 Freight Advice Programme) for large businesses, clusters of SMEs and smaller organisations with complex supply chains	There was general acceptance that the planning in London in advance of the London 2012 Olympic Games worked very well.	-
BE	Provide freight advice leaflet and mapping to city centre businesses via online tool / phone app	There was a feeling that paper copies would be of limited value, but the information electronically would be useful. Need to be careful in delivery of this – could voice instructions be provided?	-

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
BE	Offer driver training programme (lower emissions and considerate driving)	General acceptance that an improvement is needed, but concern regarding where the cost would sit, particularly for smaller businesses. Could be linked to other initiatives such as business support and driver CPC	-
BE	Develop sustainable freight initiatives / logistics demonstration projects, leveraging off EU funding (site specific)	-	-
BE	Promote use of cycle logistics for last mile deliveries	There was agreement in principle, but the need to consider the most cycle friendly locations, rather than a blanket push on this measure. There was some concern over the level of impact this would have, even if push aggressively	-
BE	Embed freight and logistics solutions into city centre business travel plans / Green Travel Districts	Strong agreement on this, as there are numerous issues at the moment	-
BE	Use the planning process aggressively to secure quality servicing and delivery plans as part of construction and steady-state transport activity	As above	-

Table 6.3 'Menu of Measures' Post-Workshop – Key Arterials and Strategic Routes

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
PHY	Remove pinchpoints from the network such as narrow lanes and splitter islands	Strong support for this, plus the need to remove excess street furniture. Turning restrictions on dual carriageways were noted as being problematic	-
OP	Introduce clear shop front policy to avoid blocking pavement for deliveries and pedestrians	Support for this measure and the need more generally to work closely with individual retailers and premises	-
PHY	Provide adequate bays for parking bays with sufficient width for LGV / MGVs to stop and drop	Strong support	-
PHY	Allow flexible use of taxi ranks to allow for deliveries in off-peak periods	There was a mixed reaction to this measure, with many expressing concern about the practicality of this	Changed from amber to red (downgraded)
BE	Create local trader 'freight friends' parking schemes that allow cross-parking / utility vehicles to share spaces	Topic covered under the discussion on city centre – strong support expressed and some examples of where it is already happening	-
OP	Introduce a blue cone scheme to cordon off kerbside parking at certain times of day to allow for deliveries	Considered a useful measure but enforcement would be a worry	-
PHY	Allocate spaces within public car parks for logistics and servicing vehicles	Strong support generally but a few specific issues flagged up, including the need to monitor and enforce usage, plus the need for spaces to be appropriately sized to accommodate goods vehicles	Changed from amber to green (upgraded)
OP	Introduce ITS solution to pre-book loading bays on busy routes to optimise planned usage and reduce poor parking	There were mixed views around being able to pre-book parking bays, with attendees expressing concern regarding a potential charge being applied	-
PHY	Provide VMS signage on key freight corridors - including reliable information on journey times	Strongly supported, given the need for more reliable journeys and based on the session earlier in the workshop when many noted poor journey reliability as a major cause for concern	-
OP	Link to Highways Agency strategic signage – development of a more informative signage system linked to the control centre for Birmingham/local authorities	Strong support for this measure and the need to create a real-time network	-
PHY	Use VMS signage on motorways to give reliable journey time information into city on radial routes	As above	-
OP	Introduce parallel route warning system - encouraging freight to stay on existing corridor where feasible	Support for this and an appreciation of the need to ensure that vehicles are directed to stay on appropriate routes wherever possible	Changed from amber to green (upgraded)

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
PHY	Introduce freight gates to allow freight to get past stationary traffic		
OP	Introduce ITS strategy to allow advance detection of HGVs to change lights to green to keep traffic moving	Good idea and builds on the trial being undertaken in London, which many attendees showed an awareness of	-
PHY	Allow freight to use bus lanes in peak periods	Strong support at the workshop, but score has been kept as red based on the wider Transport Planning implications of introduced freight to bus lanes	-
PHY	Introduce freight consolidation centres to service Birmingham and other major towns, situated close to motorway junctions	Potentially a strong measure, but requires careful consideration of audience. There are issues around the mixing of goods and licensing arrangements.	No change to score, but subsequent liaison with the Road Haulage Association confirms that some customers see interaction with their customers as key, hence losing this day to day interface will not work for all movements
PHY	Introduce neighbourhood local consolidation (with 24/7 operation) booth or similar (temporary modular structure or potential re-fit of vacant unit to increase vibrancy)	Noted as good use of vacant plots and buildings, but the same health warnings as the more strategic consolidation were raised, including difficulties in mixing different types of stock	-
OP	Ensure that Green Travel Districts actively encourage a consortium approach to logistics within each area	Support for the measure but concerns regarding who would pay for the facilities. FedEx quoted the example of Northern Scotland where deliveries to some islands are already consolidated	-
OP	Form local traders' freight consortium to allow full utilisation of rear / frontage servicing to benefit other shops	Noted that Business Improvement Managers could seek funding for this, but potential conflict with local traders	-
OP	Maxi Taxi delivery system working through the freight consortium to offer home delivery from local shops to customers who find it difficult to access services	Other companies already do something similar, so strong support for this	-
OP	Allow 18/7 deliveries (05:00 to 23:00) with quiet deliveries charter and flexibility through the planning process	Support for lengthened delivery windows, but attendees would rather see 24/7 operation permitted, hence there is scope to go further with this measure	Changed from amber to green (upgraded)
BE	Create Green Travel District lite freight partnerships that allow mutual sharing of servicing and delivery space	Funding identified as a potential issue	-

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
BE	Create area wide travel plans targeted at groups of SMEs with a single umbrella logistics plan	Strong support	-
BE	Introduce joint procurement / brokerage service to allow SMEs to pool purchasing power and generate 'single' deliveries	Strong support	-
BE	Launch an electric freight vehicle grant scheme to allow SMEs to apply for a shared electric delivery plan	Concern was raised regarding how complicated the existing procedure is for this, plus concern about the level of funding available being insufficient	-
BE	Introduce strategic Green Travel Districts at motorway junction locations to include logistics and distribution companies	-	-
BE	Improve awareness and usage of Birmingham City lorry/coach park as part of holdback area approach	Noted that Birmingham City Council reduced prices to encourage greater use of this facility, which has increased demand. Some attendees noted that there is scope for the publicity of this facility to be much increased	Changed from amber to green (upgraded)

Table 6.4 'Menu of Measures' Post Workshop – Local & District Centres



Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
PHY	Provide designated servicing points for each local centre	Enforcement will be an issue as shoppers / residents may park in spaces designed for freight. It may be difficult in existing centres due to the layout and costs to local businesses if they have to pay for a secondary delivery company to deliver goods. The idea of "community chest" funds for local district centres was raised	-
PHY	Share a freight delivery pod across local centre traders	There was general support for a facility of this nature, with some attendees noting that lockers are already used, for example at petrol stations. Finance was raised as a potential concern	-
PHY	Introduce hold-back locations which are clearly signed and mapped	Similar response to that for the arterial routes, in that there is a desire for this to be introduced, but some concern over the availability of land to do so	-
BE	Provide access / local routing maps	Electronic map for local routes should be provided, rather than hard copy versions	-
BE	Provide on-line factsheets for logistics providers and retailers covering the local area, including school locations	Many businesses already actively avoid schools. But if customers wants delivery at the time, often have to do it. Some attendees noted that there should be better management of restrictions around schools to reduce poor driver behaviour by parents	Changed from green to amber (downgraded)
OP	Introduce a light consolidation approach through partnership working. Allow pick-up of goods (particularly .com)	-	-
OP	Introduce a trader consortium for logistics deliveries to reduce demand for deliveries	Need to introduce a 'champion' – for example, Business Improvement Managers	-

Table 6.5 'Menu of Measures' Post Workshop – Residential Streets

Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
PHY	Design environment to prevent all HGV movements - for example, gateway treatments	There was general agreement that HGVs shouldn't use residential roads unless specifically making a delivery/servicing a property on that road. However, concern was raised as to the extent at which HGV use of residential streets was really an issue. The feasibility of implementing was also challenged, given the need for refuse collection, emergency vehicles, etc to access residential streets.	
PHY	Provide delivery bays at strategic locations in each street	Practicality of this was questions given the need to deliver goods to a person's door, with a designated bay not necessarily being in the right place for this.	
OP	Introduce electric vehicle deliveries from local centres	There was general support for the concept but concerns were raised that in the short term the technology is not yet ready.	
OP	Provide ability for goods to be left at a local pick-up hub (for example, in the district centre) if people are out	Strong support for this, there are already examples of this occurring.	
BE	Ensure Construction Traffic Management Plans route vehicles away from residential areas	It was noted that construction traffic does try to avoid residential areas already.	
BE	Introduce flexible timing restrictions through the planning process - for example no deliveries near a school between 08:00 and 09:00	Feedback suggested most companies actively avoid deliveries in school areas already, though if customer wants a delivery at this time they will deliver.	
BE	Introduce an anti- rat run campaign	Targeting to the right road users is important, as this is more of an issue with LGVs and cars than HGVs.	
BE	Agree a code of conduct for white van / small deliveries supported by FTA and other parties	General support	

6.4 Additional Measures

As well as a tool to validate the measures already outlined in the menu, the workshop provided a useful opportunity for attendees to highlight additional measures for consideration. The following suggestions were raised, and commentary is provided to determine whether the measure has been considered further.

- City Centre:
 - Introduce ‘Cargohopper’ style deliveries in the city centre – similar to those used in Amsterdam and Utrecht. These are small sustainable vehicles (similar in style to a traditional ‘milk float’), which make sustainable deliveries in the centres of those cities. Whilst this package does not dictate the specific types of vehicles which should be used in the future, it is prudent that any future freight consolidation work considers the most appropriate vehicle types for transporting goods from the Ring Road (or the location of the consolidation facility, should it not be at the Ring Road) to destinations in the city centre, be it a small ‘Cargohopper’ style deliveries or larger more traditional shaped vehicles; and
 - Promote consolidation within buildings to reduce deliveries. This is similar in nature to the measure already outlined in the menu which suggests there should be joint procurement between adjacent / local SMEs. Promoting consolidation within large organisations is clearly a sensible suggestion, potentially following the example set by Birmingham City Council. This measure has been adopted later in the report in the emerging strategy. It applies equally to the city centre and other areas of the city.
- Strategic and Arterials:
 - Remove tolls on the M6 Toll during periods of high congestion. The industry suggested that this measure would help to improve the flow of freight through the West Midlands during times of congestion on the M6. This issue is likely to be more of a regional concern and hence it will be fed back to the West Midlands ITA for consideration in any forthcoming regional freight strategies. A suggested measure that may be relevant to this Servicing and Logistics Package is better education / training (etc) around better use of the M6 Toll, to allow more companies to realise its benefits; and
 - Introduce freight lanes – similar in nature to bus lanes. This refers to dedicated freight lanes for goods vehicles, and hence is a major intervention than that outlined in the menu, which refers to use of bus lanes by goods vehicles. There is also some slight overlap with the measure already in the menu which refers to limited introduction of freight-only routes in the city centre, perhaps linked to the freight consolidation centres. The workshop with the other workstreams, notably Package 1 (Roadspace Allocation) and Package 2 (Public Transport) confirmed that provision of brand new lanes in an already congested urban environment will not be practical, and hence this proposal has not been taken further. Similarly, allowing freight into bus lanes during daytime hours will be problematic. For this reason, the solution is considered to be twofold:
 - Limited provision of freight only routes, linked to the freight consolidation centres. The exact locations would be subject to detailed study; and
 - In terms of providing some level of priority to freight in general traffic, it is suggested that advanced vehicle detection is provided at some key junctions on the strategic freight routes, to avoid large freight vehicles from congestion due to slow acceleration, etc.

7 Proposed Strategy

7.1 Introduction

This chapter outlines the emerging Servicing and Logistics Package, based on the technical work and engagement with industry and sector stakeholders. The chapter is set out as follows:

- Designation of the strategic freight network – showing the strategic and non-strategic routes;
- Alignment of measures with link / place matrix;
- Application of measures on strategic freight corridors;
- Application of measures in Green Travel Districts;
- Consideration of multi-modal interventions;
- Modelling the impacts in PRISM;
- Costing of measures;
- Implementation and monitoring of measures; and
- Impact on people with disabilities.

7.2 Designation of the Strategic Freight Network

Figure 7.1 presents the proposed strategic freight network for Birmingham. The evidence obtained in the data review process helped inform the proposed network by revealing the nature of existing freight traffic demand and the appropriateness of routes for carrying freight traffic (such as whether routes are built to single or dual carriageway standard). This has been supported by feedback obtained through the stakeholder consultation process and discussions with Birmingham City Council officers.

The strategic freight network corridors identified in Figure 7.1 are:

- A38(M) Aston Expressway;
- A45 Coventry Road;
- A38 Bristol Road;
- A456 Hagley Road; and
- A34 Walsall Road.

Looking north of the Birmingham Motorway Box, the strategic freight route towards Sutton is the A38 corridor rather than the less suitable A5127. Further details regarding the proposed strategy for the Sutton area are provided later in this chapter.

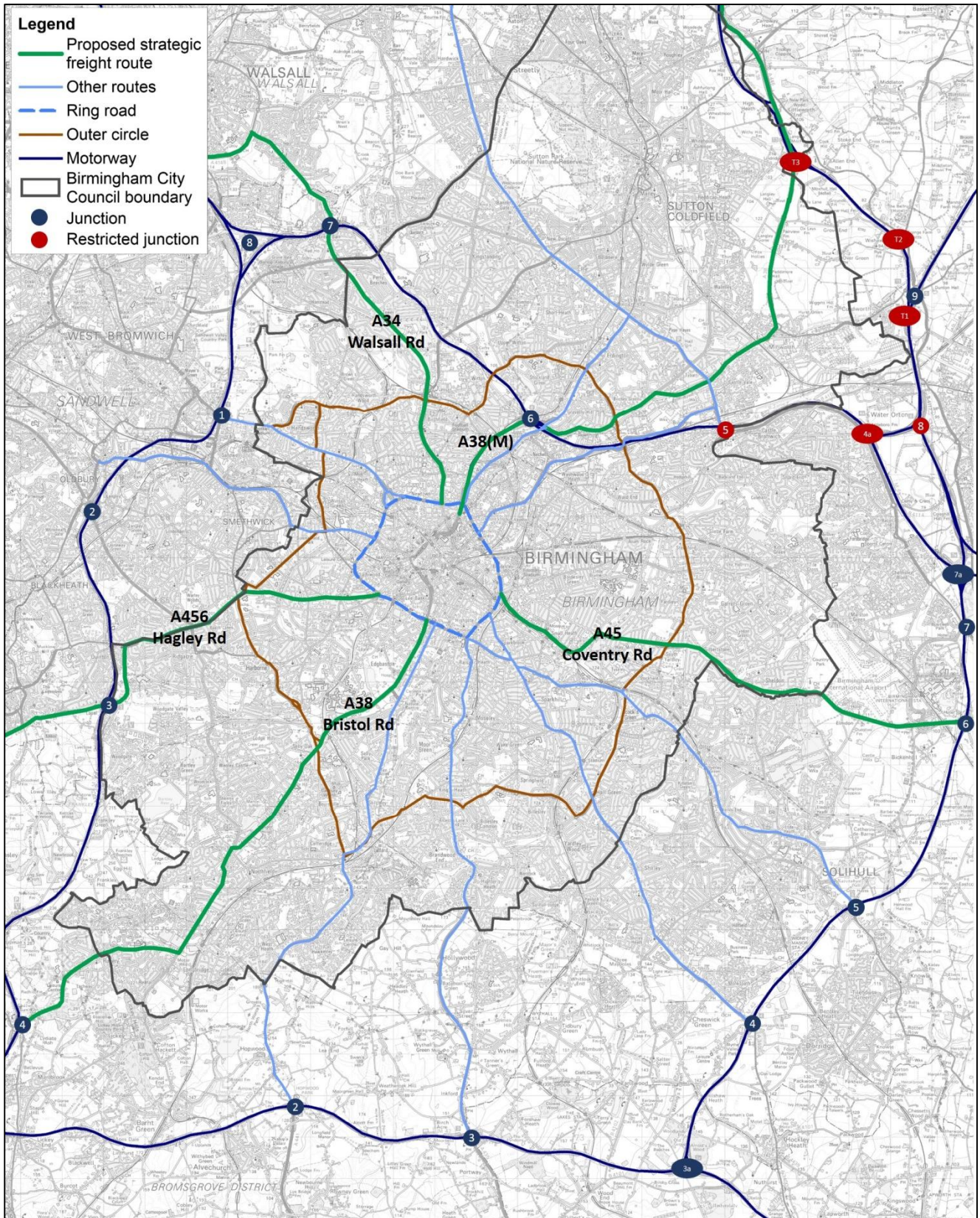
It is proposed that appropriate measures from the identified menu of measures will be applied to each route according to the nature of the road itself. Through the implemented measures and associated outcomes (improved and more reliable journey times), freight will be encouraged to use the strategic routes over the less suitable radial routes. Indicative measures for each strategic route are outlined later in this chapter.

Having multiple strategic freight corridors into the city will encourage the reassignment of freight vehicles onto these routes. Additionally, by having multiple routes into the city from the motorway box, freight vehicles will have alternative (appropriate) routes in the event of an incident occurring or a special event. Hence the intention is for a 'flexible' network of strategic freight routes to be created, allowing the network to respond to the issues facing it each day. Rather than force vehicles off other routes (which brings with it significant issues

of practicality and enforcement), this package aims to adopt the ‘carrot’ approach in encouraging more use of the strategic corridors which are suitable for more goods vehicles.

In many cases, existing larger logistics companies and their customers will already be adopting this type of solution to meet commercial targets and other KPIs; the step change in behaviour needed over the Birmingham Connected period will be facilitation of this kind of collaboration across SME’s and other enterprises where they would not normally have the capacity or resource time to forge procurement and supply chain relationships across other SME organisations. Whilst the Green Travel Districts tool is a part of this solution there is a wider commercial brokerage and collaboration function that needs to be developed early on in the Birmingham Connected delivery process, to ensure that these opportunities for efficiencies and ‘smarter redistribution’ of logistics movements are not lost.

Figure 7.1 Proposed Strategic Freight Network



7.3 Alignment of Package with Link / Place Matrix

It is important that the measures outlined in this package ‘fit’ with the link / place matrix outlined under Work Package 1. The aim of the link / place matrix is to develop an overarching framework to guide the optimal road space allocation, accounting for the different needs. Hence in a Birmingham Connected context, Package 1 is playing an ‘umbrella’ role.

The link / place matrix is outlined in Table 7.1. The ‘place’ designations are along the top of the table, with the ‘link’ designations along the side. The combination of five links and five places provides a 25 typology matrix. The definitions of each of the five links and places were provided by Work Package 1 in a presentation early in the study.

Table 7.1 Link / Place Matrix from Work Package 1

	National / City	Sub-Regional	District	Neighbourhood	Local
HA Core Network	I-A	I-B	I-C	I-D	I-E
Primary Distributor	II-A	II-B	II-C	II-D	II-E
District Distributor	III-A	III-B	III-C	III-D	III-E
Local Distributor	IV-A	IV-B	IV-C	IV-D	IV-E
Local Access Road	V-A	V-B	V-C	V-D	V-E

To this end, Table 7.2 shows the link / place matrix populated with the package of measures from the Servicing and Logistics Package. Note that in Table 7.2, it was necessary to provide a sub-division with the ‘Primary Distributor’ link, as outlined in red in Table 7.1. This is because the ‘primary distributor’ designation cuts across both the strategic and the non-strategic routes proposed for freight. Hence Table 7.2 contains two different rows for primary distributor, one referring to the strategic routes outlined earlier in Figure 7.1 (for example, the A456 Hagley Road), with the row below referring to the non-primary freight routes which are still of significant importance in the above matrix.

In a number of instances, it has not been possible to break down the freight measures to the level outlined in the 25 box matrix (see merged cells), as a number of the freight measures span a number of different environments.

It should be noted that most of the measures are fairly scalable, so in instances where highway space is particularly constrained (regardless of the link or place hierarchy), the Servicing and Logistics Package would aggressively promote the measures such as freight friends, local consolidation and re-timing.

Overlaid across the entire matrix are the following measures, which effectively apply to all environments regardless of the link / place hierarchy:

- Use of the planning process to engrain logistics / servicing strategies from the outset. This would include ensuring that all travel plans make specific reference to servicing, allowing concepts such as ‘freight friends’ to be introduced at the earliest opportunity;

- Updating of the Birmingham Freight Atlas (last updated 2005) to gradually 'phase-in' the above information on strategic freight routes, etc. This could be released in both paper and electronic (potentially 'app') format;
- Developing and agreeing of a code of conduct for delivery drivers, providing advice on how to park in challenging locations;
- Reviewing delivery hour restrictions to ensure that deliveries are allowed across as much of the day as practically possible – aiming for 24/7 operation at all sites where local circumstances dictate. It is clear that existing planning restrictions will have been introduced with good reason – but a process of reviewing and in some cases 'relaxing' these should be undertaken in the first instance; and
- Provision of a better source of all planned road works, journey times, current restrictions etc. This would allow for better advance planning of freight. For example, this facility would play a role when the A38 tunnels are closed in determining the best diversion routes for different sizes of vehicles. During the London 2012 Games, TfL developed a specific freight website, which enabled users to plan the most appropriate freight journey via the website to reduce distribution to the games. The website received over 50,000 unique visitors and the website journey planner was used up to 700 times a day. Hence it is envisaged that a freight specific journey planner / facility could experience significant uptake if communicated via appropriate channels.

Table 7.2 Summary of Measures in Context of Link / Place Matrix



	National / City	Sub-regional	District	Neighbourhood	Local
HA core network	<ul style="list-style-type: none"> Linking up of Birmingham City Council's UTMC with that of the HA, to provide advice on the motorway network about which radial routes to use to access Birmingham. Specifically, this would include directing goods vehicles towards the strategic freight network, wherever possible. Consider with the West Midlands ITA the potential role of the M6 Toll at a regional level to accommodate demand during periods of high congestion. 	<ul style="list-style-type: none"> As per 'National / City', with VMS ensuring that vehicles are directed towards the appropriate freight routes. 			<ul style="list-style-type: none"> N/A, due to strategic nature of network.

<p>Primary distributor (referring to our strategic freight network)</p>	<ul style="list-style-type: none"> • Use of advanced vehicle detection at key signalised junctions to provide some priority to large goods vehicles, helping smooth the flow of traffic (see earlier analysis showing likely increases in journey times in the future). • Use of consolidation centres on the ring road (potentially 2-3 locations) to provide a consolidation opportunity for deliveries within the ring road. Freight gates (allowing access only for freight vehicles) may be provided in the vicinity of the consolidation centres, both to provide access to the consolidation centre and to provide access to suitable quarters within the ring road. • Use of VMS to provide reliable journey information from the motorway box to the ring road. In the event of forthcoming hold-ups, information on suitable diversionary routes would be provided. In locations where there is no parallel suitable alternative route, the VMS may direct goods vehicles back to the motorway box and then instruct on a more suitable strategic freight route. • Introduction of hold-back areas on routes do not have suitable diversionary routes available. 	<ul style="list-style-type: none"> • As per 'National / City', but consolidation centres to serve a sub-regional location are unlikely to be appropriate. We would still advocate pushing the consolidation concept but at the local level rather than strategically. 	<ul style="list-style-type: none"> • Use of 'freight friends' schemes whereby smaller companies would be encouraged to link up with larger companies who may have servicing yards / bays available. For example, SMEs who are located close to large supermarkets. • Better provision and use of loading bays, where possible. For example, in regard to loading bays, the potential for these to be pre-booked or their availability to be viewed in real-time. This may include a 'blue cone' scheme or similar. Bays for loading should be clearly denoted, perhaps using different coloured surfacing, to avoid instances of delivery vehicles scanning an area to search for loading areas. • Use of 'joint procurement' where possible to ensure that the number of deliveries is reduced. • Introduction of a clear shop front policy to facilitate more efficient deliveries. • Setting up of local consolidation centres in vacant shop units or similar. These could have two roles. First, to allow for out-of-hours deliveries to neighbourhood / local shopping areas, spreading the delivery profile over a longer period. Secondly, these could perform a similar role to existing 'click and collect' facilities whereby they could act as a hub for residential deliveries to be made. This would allow for residents to pick up parcels at their convenience, rather than having to travel to the courier's distribution hub or similar. This should have the effect of reducing logistics trips in local areas, through avoiding wasted mileage etc. • Introduction of hold-back areas to allow delivery vehicles to wait off the network rather than blocking pavements etc in the vicinity of the delivery location. The consultation showed that whilst late or missed delivery slots are perhaps the greatest concern, there can also be penalties for arriving early, and hence some couriers have to wait close to a premises for the delivery window to begin. The provision of hold back areas would seek to overcome this and other such similar issues.
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<p>Primary distributor (referring to our second tier of freight routes, which can be used when congestion is occurring on the strategic freight network)</p>	<ul style="list-style-type: none"> As these routes are predominantly single carriageway, we still believe there is a place for advanced vehicle detection for large goods vehicles, to assist with smoothing the flow of traffic at key signalised junctions. 	<ul style="list-style-type: none"> As per 'National / City'. 	<ul style="list-style-type: none"> As per 'primary distributor'. There are a number of our non-strategic freight corridors (shown in blue on the mapping) which would accommodate some freight, but the VMS signage would not denote these as preferred routes. Hence whilst these routes would not be key for freight, we still envisage the above measures to still be of relevance, because a number of these routes will be set-up for Sprint, and therefore road space will be at a premium.
<p>District distributor and local distributor</p>	<ul style="list-style-type: none"> The larger district distributors will have a similar role in freight terms to the second tier of primary distributors (for example, sections of the Outer Circle), as outlined above. Hence the focus would be upon: <ul style="list-style-type: none"> Making better use of existing parking bays, potentially through changing the designations in line with the 're-time' objective. For example, designation as a disabled bay during the day, switching to a loading bay prior to 07:00 and post 18:00. This will help to spread the profile of deliveries. Bay sensor technology could be introduced to permit better use of existing infrastructure. Use of local consolidation, in vacant shop units of similar. Extensive use of 'freight friends', with sharing of servicing areas between different companies. Limited use of VMS, to direct freight either back towards the strategic freight network. Extensive use of some of the behavioural initiatives, such as collaborating on procurement strategies. This could refer to both reducing procurement within single companies (for example, as Birmingham City Council has introduced, look at cut-offs for stationary orders) and to reducing procurement across adjacent businesses. 		
<p>Local access road</p>	<ul style="list-style-type: none"> Use of gateway treatments where appropriate to deter large goods vehicles from entering unsuitable areas. Ensuring that local vehicle routings are provided, highlighting sensitive locations such as schools. Ensuring that construction traffic management plans (CTMPs) route construction vehicles away from sensitive locations. Use of local consolidation centres where possible to allow for the delivery profile to be spread. This would also serve to reduce the number of deliveries being made into residential areas through allowing residents to pick up parcels etc from a consolidation centre. This would also provide increased flexibility for local businesses, in being able to receive their deliveries out of hours. 		

7.4 Application of Measures on Strategic Freight Corridors

In order to demonstrate how the proposed measures would ‘fit’ in a Birmingham context, a number of mock-up graphics have been produced for the five strategic corridors:

- A38(M) Aston Expressway – Figure 7.2;
- A38 Bristol Road – Figure 7.3;
- A45 Coventry Road – Figure 7.4;
- A456 Hagley Road – Figure 7.5; and
- A34 Walsall Road – Figure 7.6.

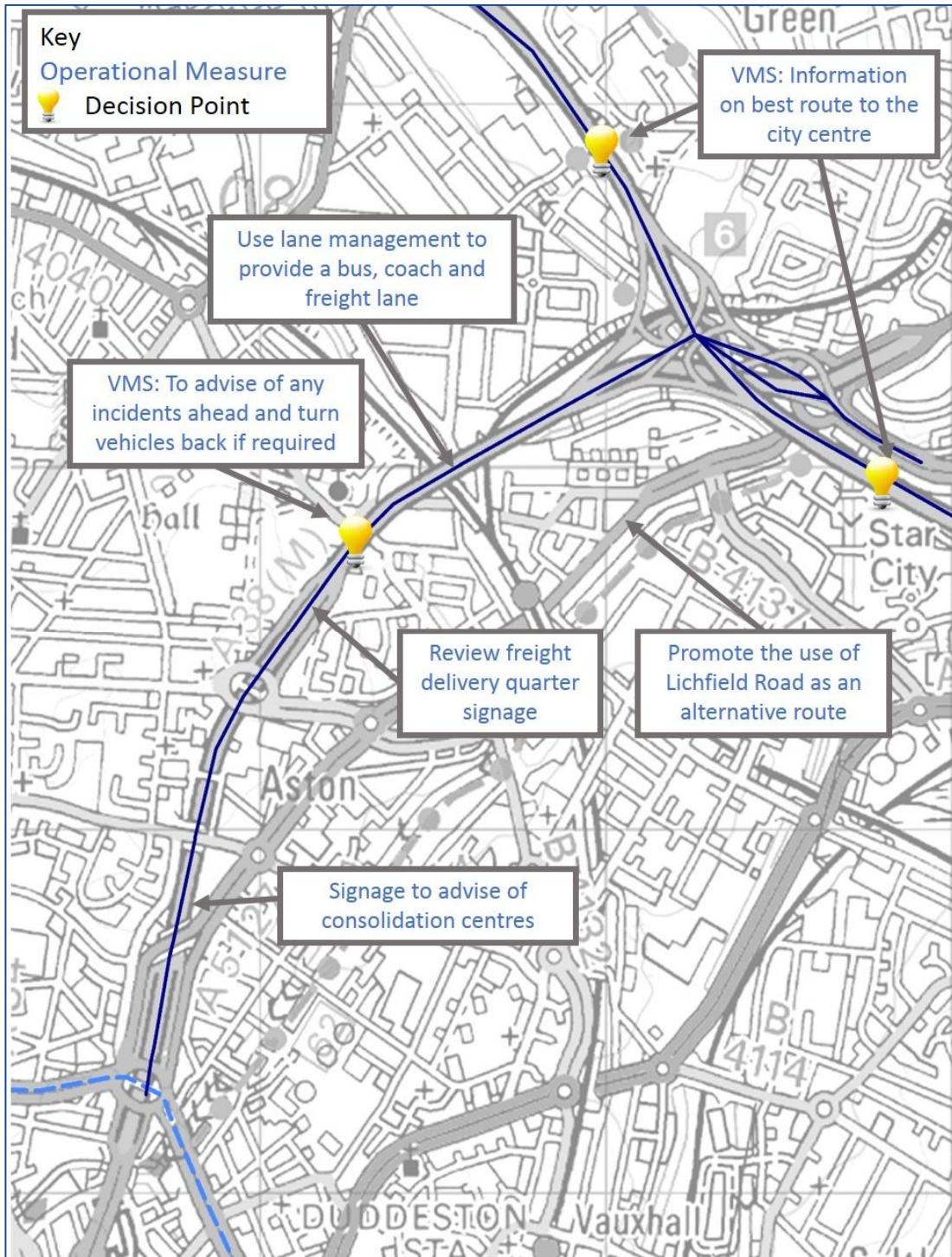
Note that the mapping of measures to routes is indicative only and hence more detailed work would be required downstream to confirm optimal measures by route.

Figure 7.2 shows the proposed measures for the A38(M) corridor between M6 Junction 6 and the city centre. Given the Motorway status of this route, it is very different in nature to the other strategic routes. The measures are focused on information provision, primarily in the form of VMS strategically located at decision points. Two VMS locations are proposed for the M6, one each on the northbound and southbound approaches to Junction 6 in order to provide information on the best route into the city (via the A38(M) or other routes, such as the Walsall Road from Junction 7). The aspiration is for this signage to be flexible so that it can take account of congestion / special events / other issues to portray the most appropriate information for Birmingham. For example, in the event of a future tunnel closure, the signage could be optimised to ensure that some freight movements use the Birmingham Ring Road instead, whilst some freight movements miss the Birmingham area entirely and use the Birmingham Motorway Box (and M6 Toll).

An additional VMS is proposed along the A38(M) inbound between Junction 6 and Park Circus. The purpose of this VMS would be to inform drivers of incidents ahead and to turn vehicles around at the Park Circus if required, re-routing them back onto the M6 so that they may use an alternative route into the city. Information could also be provided on the waiting facility at Brewery Street.

Other proposed measures include static road signs on the A38(M) to advise freight drivers of the proposed consolidation centres and a review of existing freight deliver signage along the route. Consultation with officers at Birmingham City Council confirmed that the existing goods vehicle signage may be confusing / inappropriate. Consideration should be given to reallocating lanes along the A38(M) in order to provide a bus, coach and freight-only lane in operation with the tidal flow system used along the route. This would give a level of priority to freight which it currently does not experience. Finally, greater promotion of the use of the A5127 Lichfield Road as an alternative route to the A38(M) could aid in dispersing the flow of freight vehicles across the area in the event of disruption.

Figure 7.2 A38(M) Delivery Measures



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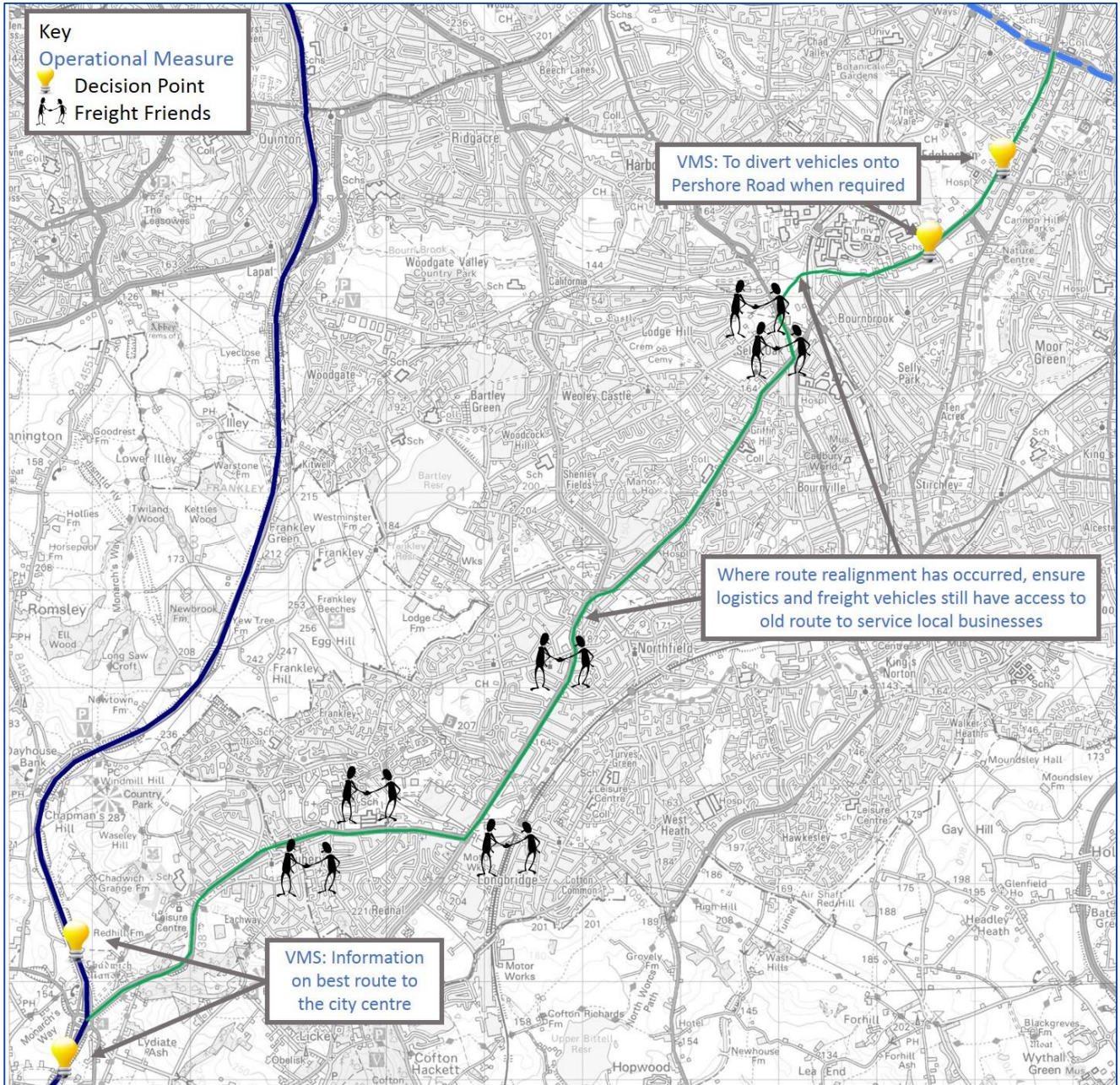
Figure 7.3 shows the proposed measures for the A38 Bristol Road corridor between M5 Junction 4 and the city centre. As with the A38(M) route, the proposed measures are primarily concerned with providing effective information to the road user. Two VMS locations are proposed along the M5, one on each of the north and southbound approaches to Junction 4. These VMS will provide information on the best route into the city centre based on real-time information.

Two further VMS locations are proposed towards the city centre where the A38 Bristol Road runs parallel to the A441 Pershore Road. This section of route is a key decision point for users, with inbound vehicles re-routing onto the A441 to avoid congestion on the A38. VMS will be used to advise inbound users to re-route onto the A441 when required (congestion and / or incidents), or to remain on the A38.

A number of locations have been identified for the 'Freight Friends' measure. This measure envisages larger retailers offering out their delivery space to other smaller traders for use in loading / off-loading, possibly using more sustainable vehicles / cages to transport goods to their final destination. The locations identified in Figure 7.2 show potential points for 'Freight Friends' to be implemented, such as sites of large supermarkets.

Finally, whilst the A38 Bristol Road has been re-aligned in the Selly Oak and Northfield areas, if there is a future move to blocking the old route completely, then consideration needs to be given to how the areas could be serviced / delivered to in the future.

Figure 7.3 A38 Bristol Road Delivery Measures



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Figure 7.4 shows the proposed measures for the A45 Coventry Road corridor between M42 Junction 6 and the city centre. VMS is proposed for the M42 itself, one on each of the north and southbound approaches to Junction 6, to be used in informing users of the best route into the city and the occurrence of any incidents or congestion (or similar).

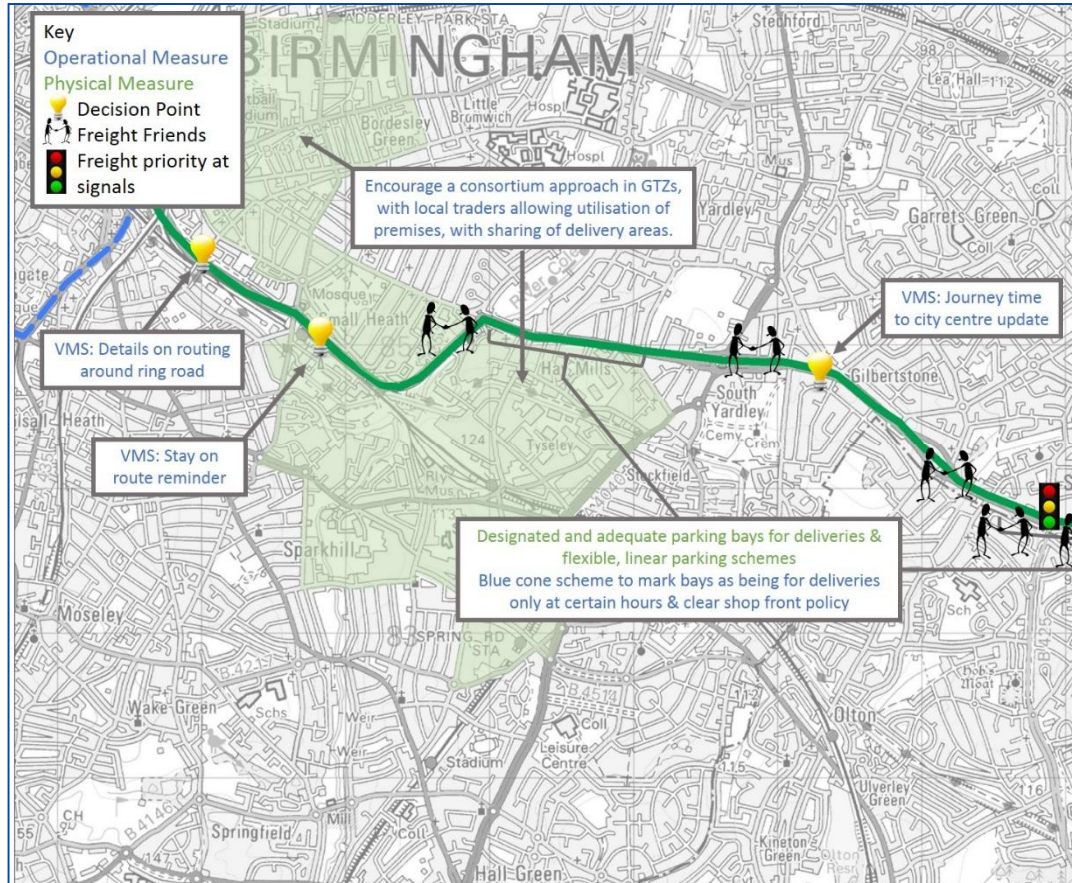
Given the length and nature of the route, a further five VMS locations are recommended. One VMS is proposed shortly after the junction, to confirm inbound current average journey times along the A45 route. A further three VMS locations will be used to update the average journey time into the city centre and to advise users to remain on the route and not attempt to divert to inappropriate routes (such as through residential areas). A final VMS is recommended on the approach to the ring road, to advise on routing around the ring road and into the city.

Freight priority signals are recommended at two locations along the A45 in Elmdon and Sheldon. Additionally, a number of locations have been identified for potential 'Freight Friends' schemes, particularly in Sheldon where there are a number of large supermarkets.

The Hay Mills and Sheldon areas both have linear high streets and it is proposed that in these locations freight parking bays are designated for deliveries to prevent inappropriate parking. Additionally, a blue cone scheme to mark out bays for delivery vehicle use during certain hours is proposed to compliment the designated bays, as well as a clear shop front policy. The existing loading areas could also be made 'smarter', through use of bay sensor technology. Consultation with the industry confirmed that having the ability to pre-book bays may actually reduce flexibility, but the ability to be able to determine the occupation or otherwise in real-time would be a useful addition.

Within the Green Travel District area that the A45 intersects, a consortium approach should be encouraged amongst local traders to allow shared use of premises and delivery areas. Further details on the specific approach regarding Green Travel Districts are outlined later in this chapter.

Figure 7.4 A45 Coventry Road Delivery Measures



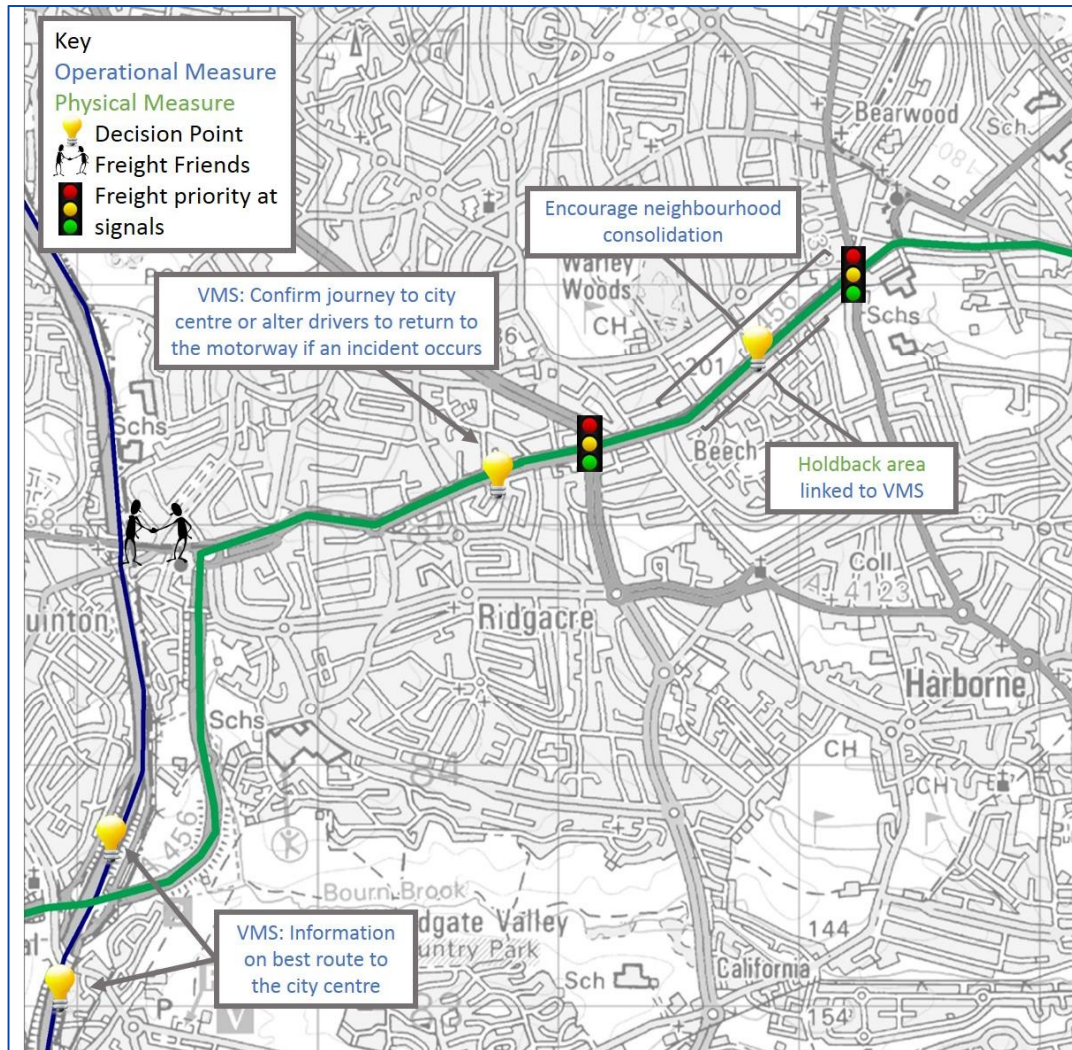
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Figure 7.5 shows the proposed measures for the A456 Hagley Road corridor between M5 Junction 3 and the city centre. As with the other routes the use of VMS is a key feature of the proposed measures. Two VMS locations are proposed along the M5, one each on the north and southbound approaches to Junction 3 to advise on the best route to use into the city centre.

Two further VMS locations are proposed along the A456 route. The first is in advance of the A456 / A4123 Junction to inform users of the current average journey time to the city, and in the event of an incident to advise on returning to the motorway and using an alternative route into the city centre. The final VMS is proposed along the route between the junction with the A4123 and the junction with the A4040. This VMS will be used to advise vehicles about the holdback area, which is a measure proposed in this area to allow freight vehicles to 'hold-back' before heading into the city centre if they are early for an arrival or if there is severe congestion ahead. It is also recommended that in this area neighbourhood consolidation between businesses is encouraged, to reduce the demand for freight deliveries.

Freight priority signals are recommended at a number of key junctions along the route, as well as 'Freight Friends' schemes where large supermarkets are located.

Figure 7.5 A456 Hagley Road Delivery Measures



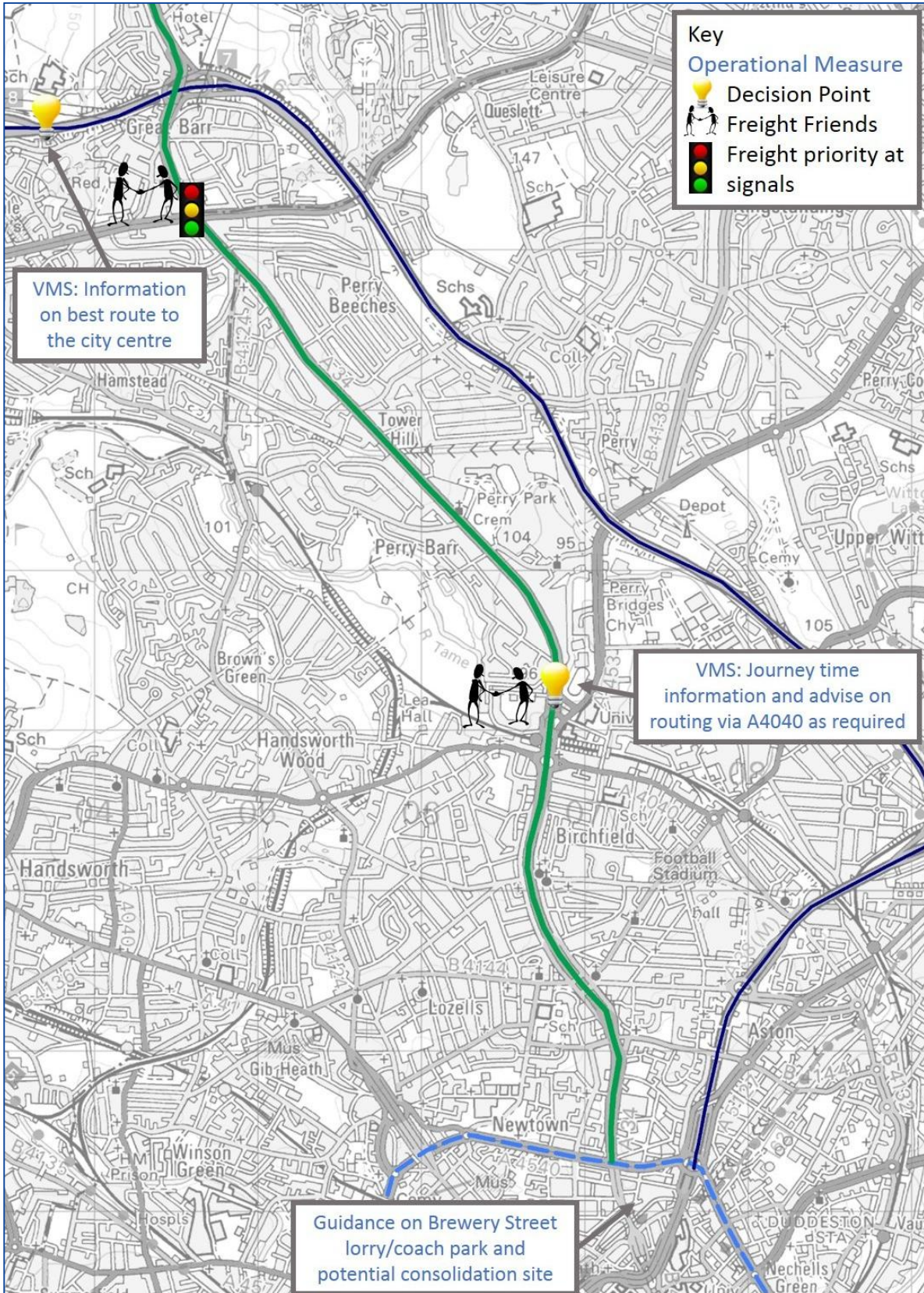
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Completing the initial mock-up of measures for the strategic corridors, Figure 7.6 shows the proposed measures for the A34 Walsall Road corridor between M6 Junction 7 and the city centre. A VMS is recommended on the southbound approach to Junction 7 to advise on the best route into the city centre (for example, in the event of an accident on the A34 Walsall Road, this could recommend that goods vehicles continue to the A38(M) Aston Expressway). A further VMS is proposed in advance of the junction with the A4040, to advise on current average journey times into the city centre and on routing options via the A4040, particularly when an incident has occurred on the A34.

Freight priority signals are recommended at the A34 / A4041 Scott Arms Junction, as well as a 'Freight Friends' scheme at a supermarket located at the same junction.

Finally, a map has not been produced specifically for the routes north of the M6 Motorway, but the intention is that the A38 corridor would be treated as the strategic route, receiving similar treatment to the corridors already mapped within the Birmingham Motorway Box. Hence for the A38 may receive treatment at key signalised junctions, to provide some level of priority for goods vehicles. In addition, VMS would provide reliable journey time information to key points such as the M6 Junction 6 and the city centre. The routing into Sutton Coldfield itself requires some further detailed work.

Figure 7.6 A34 Walsall Road Delivery Measures



7.5 Sutton Coldfield Area

The focus of the measures in the report to this point has been within the Birmingham Motorway Box, trying to encourage vehicles to use the appropriate routes when travelling between the Motorway Box and the Ring Road, through a variety of largely operational measures. This strategy also applies to longer distance 'strategic' trips made into the Birmingham box area by distribution companies and other logistic/servicing providers. That approach would be complemented by the introduction of various types of consolidation, both at a strategic level (at 2-3 points on the Ring Road), but also at a more local level in key centres along the routes.

This sub-section focuses specifically on the Sutton Coldfield area, which is situated north of the Birmingham Motorway Box. Earlier in Figure 7.1, the A38 to the east of Sutton Coldfield was shown as being the strategic corridor for the area, and hence should be the route used by goods vehicles which are not seeking to access the town itself, but consideration is now given to the appropriate routes for goods vehicles to access Sutton Coldfield town centre.

Figure 7.7 shows the proposed routings for Sutton Coldfield. The dotted orange line designates the preferred route for access to the town. The A5127 Birmingham Road route provides access from the south (and the Birmingham Motorway Box) whilst the A453 Tamworth Road route provides access from the north and east. It should be noted in the first instance that these two routes are relatively similar in nature to the non-strategic radial routes identified in Birmingham (for example, the A41 Warwick Road), in that they are single carriageway routes which are unlikely to be suitable for large increases in goods vehicle movements. The A5127 between the town centre and the A452 Chester Road was identified as a 'Primary Distributor' in the link matrix set out in Package 1, with the A453 Tamworth Road being classified as a 'District Distributor'.

The suggested measures for the Sutton Coldfield Area are as follows:

- The A38 should act as a strategic corridor and measures should be introduced to ensure it is used as the preferred 'through-route' for vehicles. Measures should include VMS to advise of journey times to Birmingham and the M6 Motorway at Junction 6. Additionally, VMS in the vicinity of the A453 Tamworth Road Junction should indicate the A453 as the appropriate route for access to Sutton Coldfield only. Similarly, if approaching from the south, VMS should indicate that the A5127 Birmingham Road is the preferred route for access to Sutton Coldfield only;
- On the two routes that are designated as providing access to the town centre, the measures should be similar to those identified for the non-strategic radial routes in Birmingham. For example, as the routes are single carriageway, there may be a requirement for some level of priority at key signalised junctions, helping to ensure vehicles are 'encouraged' to use these routes rather than potentially less suitable parallel routes. Measures on these routes should include freight friends and smarter use of loading bays, to make better use of existing servicing space and to avoid goods vehicles causing obstructions when making deliveries;
- Anecdotally, the town centre in Sutton Coldfield receives the majority of its deliveries during the daytime, hence there is clear scope to really push the re-timing objective at this location, encouraging deliveries to be made earlier or later in the day, to avoid periods of higher pedestrian footfall. To achieve this, local consolidation should be pushed, which would allow for unstaffed shops / premises to receive deliveries outside of their core hours, helping to spread the delivery profile across a longer period of the day. There would also be a clear benefit in the surrounding residential areas, through reducing the number of trips made to individual properties and crucially, a reduction in 'wasted' trips when a person is not at their property to receive a delivery, particularly given the commuting pull from Sutton Coldfield into central Birmingham; and
- In general terms, the measures should be marketed clearly under the banner of improving the economic sustainability of the town centre, trying to reduce freight's footprint and allow for better use of existing space during daytime hours. The measures intend to spread the delivery profile and would lend themselves to integration within a Green Travel District/Business Improvement District area. The wider placemaking objectives of Sutton Coldfield town centre as a place for people should be reinforced through the local freight and delivery rationale for the town, using active traffic management techniques and intelligent advance signage to cut down on unnecessary circulation.

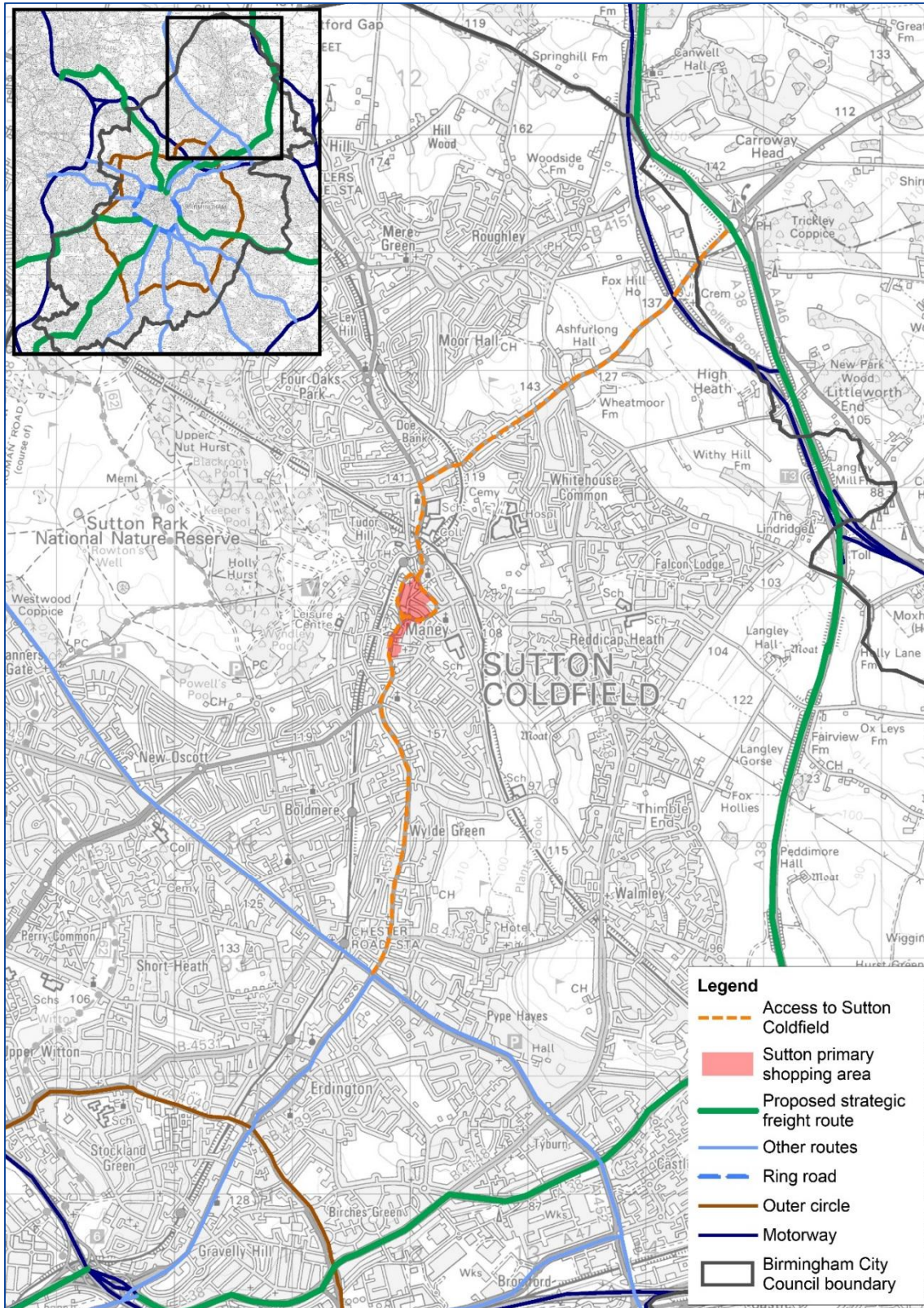
Improved signage and VMS information on key links into the town centre from the existing strategic routes should be a priority and consistent 'reassurance' messaging given to 'first-time' and occasional drivers that the local routes into the town centre are the right ones for them to be using.

If we link this strategy to link / place hierarchy outlined in Package 1 (Roadspace Allocation), it is clear that the Sutton Coldfield strategy is all about providing freight links following a 'path of least resistance' that keeps larger freight vehicles to specific routes where community severance and adverse impact/delay time can be minimised.

The linear treatments through these communities (for example, Chester Road) needs to look at smarter use of traffic signals and advance detection/platooned movements as well as the use of strategically placed off-road delivery bays at the gateways to Sutton Coldfield town centre, in order to support frontage loading and unloading.

Finally, advance driver information and guidance to key town centre delivery companies around school opening/closing times and other localised constraints should also be mapped and disseminated, together with advance roadwork information due to the constrained nature of the routes, particularly the 'local' corridors into Sutton Coldfield.

Figure 7.7 Focus on the Sutton Area



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7.6 Application of Measures to Green Travel Districts

It is noted that all the measures already set out are likely to be applicable to the Green Travel Districts to a greater or lesser extent, but the creation of these districts provides a clear opportunity to create tangible impacts in regard to servicing and logistics. For this reason, the following measures are considered a priority in the Green Travel Districts:

- Introduction of a joint procurement / brokerage service to allow SMEs to pool purchasing power and generate 'single' deliveries;
- Creation of area wide travel plans targeted at groups of SMEs with a single umbrella logistics plan, and adaptation of this approach to suit a corridor location where local traders and businesses wish to collaborate;
- Creation of Green Travel District 'lite' freight partnerships that allow mutual sharing of servicing and delivery space;
- Ensuring that Green Travel Districts actively encourage a consortium approach to logistics within each area; and
- Introduction of neighbourhood local consolidation (with 24/7 operation) booth or similar (temporary modular structure or potential re-fit of vacant unit to increase vibrancy). This measure is of key importance, as with the exception of the city centre Green Travel District, their locations will not generally lend themselves to being serviced by the strategic consolidation centres being proposed at or close to the Ring Road.

The exact mix of measures will be dependent on the Green Travel District in question and its local circumstances / delivery space available.

7.7 Other Measures / Multi-Modal Interventions

The focus of this chapter has to this point been largely on highway based solutions, with the possible exception of the behavioural measures (freight action plans etc) which arguably cover all modes. This sub-section gives consideration to a number of other elements which require more detailed consideration in the future.

7.7.1 Rail Freight

The 'menu of measures' to the opportunity to transport rail freight via city centre railway stations, which was scored 'red' in the RAG assessment, largely due to the lack of testing of this approach in the UK (there are examples of this working in mainland Europe). However, Colas Rail is currently trialling services to Euston, to serve the surrounding area, and the results of this trial should be monitored to help determine whether a similar solution may have a place in Birmingham. The lack of appropriate servicing is likely, at least in the short term, to limit the viability to transporting small goods only. Further measures to support the growth of rail freight in the future are as follows:

- Birmingham City Council to work collaboratively with neighbouring authorities / the West Midlands ITA to support any improvements to the rail network which will help to maximise the throughput of rail freight in the region, in line with the aspirations noted in the West Midlands Metropolitan Freight Strategy regarding rail freight. Examples in the West Midlands include the proposed development of the Stourbridge – Walsall – Lichfield route for freight, to help alleviate some of the identified capacity concerns on the Water Orton corridor, north-east of Birmingham. Capacity improvements were also identified in High Level Output Specification (but not committed in the subsequent business plan for Control Period 5) for this corridor to improve access to some of the freight terminals, notably removing the sub-optimal access to the Kingsbury branch from the north;
- Birmingham City Council to consider the potential opportunity associated with moving freight via the new high speed infrastructure being planned for the city. Although it is understood that the French use of Postal high speed trains (TGVs) is expected to cease, the use of high speed rail to move goods overnight should be considered. The existing high speed railway in the UK, between the English Channel and central

London, is currently used by a limited number of freight trains, but this freight serves Barking rather than Central London;

- One of the potential sites for a road based freight consolidation centre is Landor Street. This potential site would be adjacent to the Landor Street container terminal, served by Freight Operating Company (FOC) Freightliner, and hence there may be an opportunity to seek the establishment of a multi-modal freight facility at this location, potentially to serve a wider role than that envisaged as a road based consolidation centre to serve the area within the Ring Road. Research undertaken by URS in June 2012, commissioned by a number of local authorities in the Black Country and Staffordshire, noted that in the wider West Midlands region, there is a mis-match between supply and demand in the B8 sector, with the implication that there will be an inability to attract investment and new jobs in the large scale B8 sector, with a resulting inability to compete with other regions including the East Midlands and the North-West. Hence there is scope for the development of further Strategic Rail Freight Interchanges in the future in the wider region, with the definition referring to an intermodal terminal which is linked into both the rail and trunk road network, with rail connected warehousing and container handling facilities; and
- With the proposed development of the high speed railway to Birmingham, there is a significant opportunity to run additional freight trains on the 'classic network' as a result of released capacity. Hence an important task going forward is that freight is considered in any discussion of the use of released capacity.

During the project, there was some discussion of the potential for parcel pick-up points to be located at railway stations. A similar example in an Airport context has recently been announced by the supermarket Waitrose, giving customers a chance to pick up their pre-ordered goods on arrival at the airport. The idea of allowing people to collect goods is similar to that proposed under the neighbourhood consolidation centres, which would attempt to reduce goods vehicle movements into adjacent residential areas. Hence Birmingham City Council should strongly endorse any moves in the industry towards remote parcel collection at convenient points, to include city centre railway stations.

Surveys undertaken at TfL and DfT as part of the London 2012 Games showed that a large number of courier deliveries to large offices in London were actually personal deliveries (for example, people receiving books and CDs) rather than business deliveries. Assuming a similar trend in Birmingham, this suggests / confirms that there is an important role to play for neighbourhood consolidation centres and also remote parcel pick-up points.

7.7.2 Light Rail Freight

The menu contained a measure referring to the use of light rail to move freight. This measure is particularly topical given the forthcoming extension of the Midland Metro to penetrate the city centre from its current terminus at Birmingham Snow Hill.

Research by Regue and Bristow, dated 2012, relating to the feasibility of introducing freight trams in Barcelona, referred to a number of case studies detailing the use of light rail for freight in Europe, including:

- CarGo Tram – Dresden, Germany;
- CargoTram and E-tram, Zurich, Switzerland;
- Guterbim, Vienna, Austria;
- CityCargo, Amsterdam, Netherlands; and
- Monoprix, Paris, France.

The paper confirms that there have been differing levels of success for these schemes. The scheme in Amsterdam was launched as a pilot project in 2007, combining freight trams with small electric vehicles for final delivery, but this was ceased in 2009 given funding problems. The facility in Dresden, Germany, is operated by manufacturer Volkswagen (VW) and links the city with an industrial site, using dedicated light rail vehicles.

Whilst there are some successful examples in Europe, the suggestion for Birmingham City Council as a result of this Servicing and Logistics Package is that some feasibility work is undertaken to determine whether it may be appropriate in the medium to long term, particularly in light of the expanding system. Key topics in the study should include:

- Size of market;
- Types of goods to be conveyed;
- Loading / unloading locations;
- Vehicle types (dedicated freight vehicles or use of passenger equivalents with light goods); and
- Approach to the 'last mile' delivery.

7.8 Water Freight

The West Midlands Regional Freight Strategy notes that canals provide access to key centres such as Birmingham, Wolverhampton and Coventry. In a Birmingham context, there is relatively good penetration to the city centre area, with a number of different canals converging in the central area. Birmingham City Council has in the past considered the potential for goods to be conveyed by canal, and the recommendation of this Servicing and Logistics Package is that it continues to be monitored as a potential means for transporting bulk goods, potentially from the Black Country area into Birmingham. This may be particularly appropriate for supporting city centre construction projects, but there are clear questions regarding unloading facilities and the 'last mile' delivery.

There is scope for leisure based deliveries such as beer barrels and similar into restaurants and bars but this is seen as a localised opportunity depending on the approach of each customer and is unlikely to contribute significantly to freight mode shift over the Birmingham Connected period.

7.9 Other Measures

During the course of the study, there was discussion with officers at Birmingham City Council regarding two potential highway constraints / issues which may have implications for current routing / use of the highway network by goods vehicles. Further discussion is now provided on these:

- All junctions on the Birmingham Motorway Box are 'full junctions', permitting all movements, with the exception of the M6 Junction 5, where it is not possible to exit the southbound M6 or enter the northbound M6. This motorway junction is situated adjacent to the industrial Tyburn Road corridor, and hence it is likely that the lack of a full junction at this location contributes to considerable extra mileage for freight vehicles. A study would be required to determine the extent of this problem, and the potential benefits / feasibility associated with an upgrade to a full junction. The A47 corridor from this junction to the city centre is not denoted as a strategic corridor in this Servicing and Logistics Package, but this could be subject to review if the junction with the M6 were to be upgraded to permit all movements; and
- There has been considerable discussion in Birmingham regarding the role of the A38 tunnels and whether a permanent closure should be considered in the future. The earlier traffic count information confirmed that the A38 corridor is well used by goods vehicles. Closure of the route would be expected to lead to diversion onto the Ring Road and, potentially to a lesser extent, diversion to the use of the Birmingham Motorway Box. Whilst this may help to strengthen the case for further freight consolidation at or close to the Ring Road, there would be a clear implication for goods vehicle routings in the city, and also on the level of through movement driven by customer demand for multi-drop/collection and the efficiency of the specific vehicle 'run'. There is also an issue concerning pedestrian and mobility impact and the need to keep larger vehicles away from the 'walkable' city centre streetscape that is being created, and to ensure that the tunnel network plays its part in this strategy. Hence the recommendation from this Servicing and Logistics Package is that the freight industry is actively engaged in any subsequent discussion regarding the role of the A38 and its potential closure.

7.10 Modelling the Impacts in PRISM

The proposals identified earlier in this report will have a series of impacts on freight traffic flows and traffic re-routing and re-timing. A series of assumptions were supplied to the PRISM modelling team for testing the level of impact the proposed options would have on the road network, as detailed in this sub-section.

It should be noted in the first instance that it has been necessary to make a number of high level assumptions for this process. Where possible, the numbers generated have been informed by case studies elsewhere, for example in relation to the impact of freight consolidation centres, which has been informed by DfT research. It is understood that the other Birmingham Connected packages have also provided assumptions to the PRISM modelling team, to allow for a 'Birmingham Connected Scenario' to be tested and the benefits demonstrated.

Note that the levels of change provided to PRISM may not constitute the entirety of the impact of the Servicing and Logistics Package, but it is suggested that the vast majority of the impact will be captured.

7.11 Impact of Proposed Strategic Freight Network on Freight Traffic Re-routing

Table 7.3 presents the assumptions provided to the PRISM team for modelling the potential impact of the measures identified in this study on freight traffic re-routing (LGVs and HGVs), plus commentary to support the level of reduction proposed.

Table 7.3 Impact of Proposed Strategic Freight Network on Freight Traffic Re-
(Refers to journeys made from the Motorway Box to the Ring Road)

Route (between Motorway Box and Ring Road)	Designation in Package	Expected Change (based on journeys from the Motorway Box to the Ring Road)	Re-distribution	Commentary
A38 Aston Expressway	Strategic	-20%	25% to A34 Walsall Road 25% to A45 Coventry Road 25% to A38 Bristol Road 25% to A456 Hagley Road	<p>Consultation highlighted many companies routing via the Expressway instead of their nearest radial, given perceived more reliable journey times. Hence with the creation of strategic routes with VMS, signal priority, etc, it would be expected that some of these trips would be dispersed onto the other strategic routes</p> <p>All these changes reflect the transfer of vehicles to parallel strategic routes. It is anticipated this re-routing would occur as the strategic routes would be made more attractive through provision of VMS and signal priority, amongst other more minor interventions</p>
A47 Nechells Parkway	Non-Strategic	-20%	100% to A38 Aston Expressway	
A41 Warwick Road	Non-Strategic	-20%	100% to A45 Coventry Road	
A34 Stratford Road	Non-Strategic	-20%	100% to A45 Coventry Road	
A435 Alcester Road	Non-Strategic	-20%	50% to A45 Coventry Road 50% to A38 Bristol Road	
A441 Pershore Road	Non-Strategic	-20%	100% to A38 Bristol Road	
A457 Dudley Road	Non-Strategic	-20%	50% to A456 Hagley Road 50% to A34 Walsall Road	
A41 Soho Road	Non-Strategic	-20%	50% to A456 Hagley Road 50% to A34 Walsall Road	

7.11.1 Impact of Consolidation Centres

Three hypothetical locations have been identified for freight consolidation centres within the city and are presented in Table 7.4, along with the assumed access arrangements. Note that following discussions with officers at Birmingham City Council, it was determined that one aspiration for a freight consolidation centre could be development at the existing Brewery Street Lorry / Coach Park, optimising on the land asset already in place and developing a multi-level facility (with some form of decking to increase capacity). The Brewery Street site would be expected to represent an expansion of the existing parking facilities to cater for a range of 'stay' times, hold-back and multimodal interchange onto ULEVs or cycle based delivery vehicles.

Table 7.4 Assumed Freight Consolidation Centre Locations and Access

Location	Assumed Access
Existing Brewery Street Lorry / Coach Park	As current with advantage provided for ULEV and cycle delivery vehicles into the surrounding network
Landor Street (next to Freightliner)	Priority junction access off Landor Street
Junction of A4540 Ring Road and A441 Pershore Road	Direct access from the roundabout junction

Research undertaken for the Department for Transport¹ suggests that cumulatively, freight consolidation centres can achieve a capture rate of 20% amongst retailers. This figure is based on the scheme being voluntary, so is likely to be a conservative estimate. Given that the scheme would likely move towards mandatory participation in the medium-long term, it has been assumed that a capture rate of 20% of all freight can be achieved within the A4540 ring road. Of those trips which have been captured, there would be a reduction in the number of city centre movements by 80%. Of the remaining trips, it has been assumed that 50% will be made by LGVs, 30% by electric vehicles and 20% by cycle logistics.

7.11.2 Impact of Behavioural Measures

An assumption has been made that the implementation of behavioural measures will lead to a 15% reduction in all freight movements originating or ending within Birmingham. The principle causes of this reduction are assumed to be:

- Collaboration between and within businesses in their procurement processes;
- Use of local consolidation centres; and
- The use of freight action plans and travel plans.

Note that given the flexibility of these tools, with commercial software available on the market now to assist with CRM and supply chain optimisation, the efficiency savings and vehicle trip levels reductions could start accruing right from the start of the Birmingham Connected delivery process.

7.11.3 Freight Traffic Re-Timing

A number of measures have been identified that will encourage freight traffic originating or destined for Birmingham to re-time their deliveries, including the extension of the freight delivery window, the use of consolidation centres and the use of travel plans. Table 7.5 details the assumptions made on the impact these measures will have on re-timing existing deliveries. The numbers generated for PRISM have been in part informed by the results of the London 2012 freight work, an example of which is set out in Figure 7.8. This shows the impact of the re-timing measures for both the Olympics and Paralympics. A change of the magnitude of 1-2% per hour was achieved in this context. The figures generated for Birmingham have used that research

¹ Freight Consolidation Centre Study (2010) Transport & Travel Research Ltd in association with the Transport Research Laboratory

as a starting point, but are actually capable of being more ‘aggressive’ (up to 5-10% shift) reflecting the bigger changes that are forecast based on freight interventions being permanent rather than for a limited period only. However for these levels to be sustained, measures such as the advance notifications of roadworks and smart ITS ‘re-routing’ tools must be maintained in place over the Birmingham Connected period.

Figure 7.8 Effect of Re-Timing in London

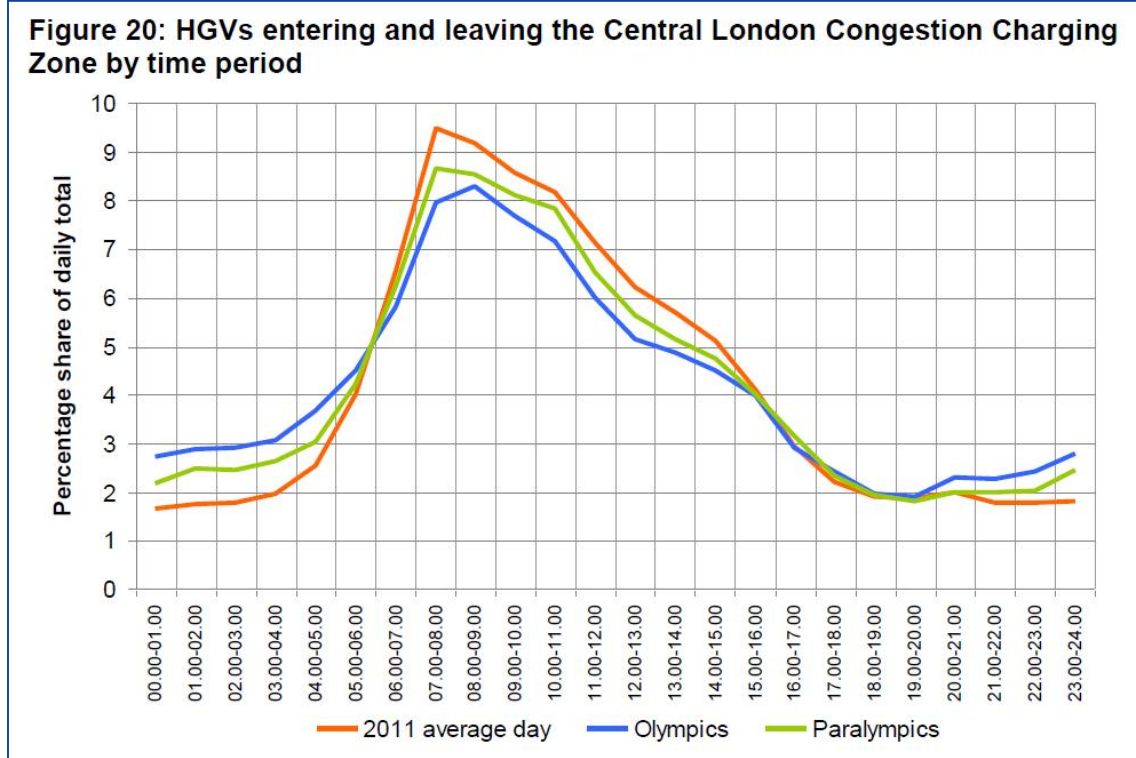


Table 7.5 Impact of Extending the Freight Delivery Window

Vehicle Type	Existing Delivery Window	Suggested Reduction in Freight Trips	Commentary
LGV	AM (07:00 – 09:30)	-10%	Assumed freight traffic will re-time to pre-07:00
	Inter-Peak (09:30 – 15:30)	-5%	Assumed freight traffic will re-time into the off-peak period (pre-07:00 and post-09:00)
	PM (15:30 – 19:00)	-10%	Assumed freight traffic will re-time to post-19:00
HGV	AM (07:00 – 09:30)	-20%	Assumed freight traffic will re-time to pre-07:00
	Inter-Peak (09:30 – 15:30)	-10%	Assumed freight traffic will re-time into the off-peak period (pre-07:00 and post-09:00)
	PM (15:30 – 19:00)	-20%	Assumed freight traffic will re-time to post-19:00

7.12 Costing of Measures

In order to inform Package 7 (Funding), outline costings have been provided for the measures. These are set out in Table 7.6 and Table 7.7. As with the provision of information for the model, the caveat to this costing exercise is that it has been carried out at a high level, and hence further work would be required downstream to cost them more comprehensively once further details on the specific measures and locations are determined.

Note that the costs shown do not include the costs 'in-kind'. This refers to the advice and effectively consultancy assistance that the industry may be able to provide at no cost to Birmingham City Council. For example, during Birmingham City Council's 2008 Feasibility Study for a freight consolidation centre to serve Birmingham City Centre, considerable experience and insight was gained through involving a major logistics and distribution in the feasibility process. It is envisaged that the industry would be collaborated with in much the same way in regard to the measures outlined in the table. For example, in introducing 'Freight Friends', collaboration with large supermarkets may draw on their experience elsewhere of collaborating with neighbouring businesses.

Table 7.6 Costing of Measures (Part One of Two)



Project Name	Strategic freight consolidation centre	Link between HA VMS and Birmingham UTMC	VMS on strategic routes	Signal priority at signalised junctions on strategic routes	Additional loading bays	Freight friends
Description	For strategic consolidation at or close to the Ring Road	Allowing HA to direct freight to appropriate strategic routes in Birmingham	For the five corridors denoted as 'strategic freight routes' (assume 10 VMS per route)	For the more congested signalised junctions on the five strategic freight routes (assume 3 junctions per corridor)	Not location specific, but assume an additional 20 across the city	For making best use of existing servicing facilities, particularly in locations which will be highly constrained once SPRINT routes are introduced
Location	Landor Street and Brewery Street	Across Motorway Box	A38 Aston Expressway, A45 Coventry Road, A38 Bristol Road, A456 Hagley Road and A34 Walsall Road	As above	Various	Applies to city centre and strategic / non-strategic corridors
Total Estimated Capital Cost	Depends on whether we use an existing logistics facility. Assume £50k set up if an existing facility is used	Difficult to know without detailed knowledge of operation, but potentially in the range £5m - £10m, based on fairly significant link-up requirement, plus interaction with Smart Motorways	£1m on each of the five corridors (based on each fixed VMS costing £100k, and typically one sign per mile, per direction, based on a typical distance of 5 miles between the Ring Road and the Birmingham Motorway Box. Therefore £5m total. Note however that it would be prudent to link this with the other work packages, notably the plans for SPRINT etc, hence the cost may be spread	£20k per typical junction, so £240k based on three junctions on four corridors. Note however that this priority technology would also stand to benefit other areas of Birmingham Connected, notably public transport	£20k per bay, based on indicative length of 15m and width of 3m. Exact cost depends on location specific circumstances, such as availability of footway and utilities. Note that this cost applies to a standard bay with no bay sensor technology, so an uplift would be required if that technology were desired from the outset to create a 'smart bay'	£10k per location (allowing for purchase of some additional cages etc for sharing between businesses). Assume five locations on the four strategic corridors (excludes Aston Expressway), so £200k capital cost
Private Sector Capital Funding	Companies with existing operation (for example, DHL) may absorb capital costs but ongoing revenue sup-	£0	Negligible	Negligible. Unless a more expensive system is introduced whereby in-vehicle kit is required (at which	Negligible, but may be scope for private sector input in locations where space is already at a premium	Cost may have to be absorbed by BCC, especially if SPRINT etc severely restricts ability for existing delivery

	port would be required from BCC, at least for an initial period whilst participants are established			point a charge could be levied on users)		practices to be continued
Source of Private Sector Funding	Logistics providers, service charges for use (on a per pallet basis)	NA	NA	NA	Adjacent retail units / SMEs	Participating businesses, SMEs etc
Public Sector Capital Funding	Assume £50k start up if existing premises are used	£5m - £10m, but cost could come down if the measure could be combined with existing HA / partnership plans for VMS. There may be scope for the bus based corridors to feedback live information to support the VMS	£5m (based on the five strategic corridors), noting however the opportunity for this cost to be spread across some of the other Birmingham Connected packages too	£240k	Total of £0.4m based on a new bay being provided at 20 locations. We need to be careful not over-provide though or it would work against some of the other measures, such as freight friends. Note comments regarding 'smart bays'	£200k (assumes that large supermarkets etc co-operate and provide access free of charge)
Source of Public Sector Funding	BCC, potentially seeking EU funding	Combination of BCC and HA	BCC - but closely linked with existing UTMC developments in the city, so the cost may be shared over a range of functions	BCC, potentially seeking EU funding	BCC	BCC - but clear scope for this to receive some EU funding, as it is a good opportunity to make better use of existing facilities, with potentially major benefits
Estimated Revenue / Maintenance costs p.a. to BCC	£750k per annum, if based on using a fleet of 9T rigid electric vehicles to service area within Ring Road. This figure is sourced from the report produced by DfT in July 2010 entitled 'Freight Consolidation Centre Study'. However, assume a five year timeframe for	Should be a one off introduction - BCC signs thereafter would be controlled by BCC and HA signs by HA	Assume £100k for operational aspect following delivery. This may be a high estimate though as it could potentially be accommodated within existing UTMC function at little extra cost	Assume 10% of capital costs per annum, so potentially £25k. If it is a loop based system, it may not require this ongoing cost	Negligible maintenance costs, but an increase in enforcement costs (depending on what the former land use was)	Potentially half a BCC post, so assume £40k per annum (£25k salary with 60% uplift). Note however that this post could be shared with the individual pursuing GTD activities

	scheme to break even, with the assumption being made that income can be achieved from users on the basis of 20%, 40%, 60%, 80% and 100% subsidy on revenue costs. There is scope to reduce the cost further if cycle logistics is used for deliveries within the Ring Road					
Potential Funders (for ongoing/maintenance costs)	BCC, users of facility, possibly umbrella organisations such as BIDs	Unknown	BCC, HA (HA interest given opportunity for BCC to influence use of Birmingham Motorway Box)	BCC	BCC, plus SMEs if they have lobbied / collaborated with BCC for provision	BCC, plus SMEs. Help in-kind would be expected from the large supermarkets, in making their facilities usable by other SMEs etc
Core Project Stakeholders	BCC, freight industry	BCC, HA	BCC, HA	BCC	BCC, constrained premises	BCC, large supermarkets (or similar) plus neighbouring SMEs
Earliest Start Date	Within 5 years	Within 5 years	Would logically follow the provision of advanced vehicle detection	Within 5 years, with the VMS signage to follow. Timescale may be dictated by public transport package more than freight	Should follow most other initiatives to avoid over-provision	Could be immediate, but the benefit / need to businesses will be difficult to sell until road space re-allocation occurs as per public transport proposals
Duration	6 months	Likely to be up to 5 years	Likely to be up to 5 years - may be rolled out on a route by route basis	12 months	Should be a medium term measure as otherwise may compromise other measures such as freight consolidation	24 months (may work best as a trial initially, to prove method and magnitude of benefits)
Key Benefits	Significantly reduced movements in central area	Is key to our strategy of signposting goods vehicles towards strategic freight network	As above, but is key to ensure goods vehicles are using appropriate corridors. Also avoids	This needs to be one of the 'carrots' in getting goods vehicles to use the strategic	Freight industry has identified a shortage in some areas, so additional provision locally	Makes best use of existing space, and may allow some re-distribution of road-

		from the Birmingham Motorway Box	rat-running instances so major benefits for adjacent corridors / residential areas	freight network	is likely to be necessary, even with the development of the various other measures in the freight package	space
Deliverability Risks	Industry view is mixed. Some hauliers rely on interaction with customers, hence not a universally popular solution, but likely to work if carefully targeted	Relies on HA agreeing to provide localised routing information in addition to its core HA network information	Need plan to be introduced in entirety for concept to work (i.e. cannot be introduced in only one quarter of the city, or would be sending out confused messages regarding routing)	Could dilute benefits for public transport. Technology fairly mature for bus priority but not for general large vehicle detection	Local circumstances dictate the appropriateness. May come into conflict with cycling proposals to remove some loading bays	Relies on large supermarkets (etc) co-operating, without harming their own operations
Comments	Note the various caveats about costing these. We have assumed that the operation will break even after five years. There is scope however that an operator may choose to take a consolidation centre on commercially, requiring very little financial input from BCC. The costs are based on electric vehicle operation being provided, but use of cycle logistics may provide a saving. We have assumed voluntary participation, but potentially requiring mandatory participation for new developments in the city, written into planning agreements	-	-	-	-	-

Table 7.7 Costing of Measures (Part Two of Two)



Project Name	Neighbourhood consolidation	Procurement collaboration	Smarter loading bays	Freight Action Planning Support	Engraining servicing / logistics in planning / travel plans	Hold back areas
Description	With both an industry and residential function (i.e. consolidate deliveries for shopping precinct and adjacent residential areas)	Ensuring that companies collaborate to improve the supply chain	Introducing bay sensor technology or similar	Similar to that provided for the London 2012 London Olympic Games, whereby businesses are mentored, for example to educate on the potential re-timing of	City wide, but not necessarily at significant additional cost	Assume one on each strategic corridor, excluding A38 Aston Expressway
Location	Applies to strategic and non-strategic corridors	Would apply across large parts of the city, but potentially initially in the GTDs	Assume this applies to 100 parking bays across the city - targeting those where there are shortages or frequent instances of poorly parked delivery vehicles nearby	Across the city but potentially focussing, at least initially, on larger businesses and GTDs	Across the city	Assume one on each strategic corridor, excluding A38 Aston Expressway
Total Estimated Capital Cost	£20k per location, allowing for some simple storage /security arrangements to be set-up, potentially including lockers for click and collect type operation. Assume 8 locations initially (2 per strategic corridor, excluding Aston Expressway)	£0	Approximately £200 per bay / sensor to include all sensor hardware and communications. In addition, installation costs would be approximately £25 per bay	£0	£0	£100k per location. Note this based on uplifting the cost for a loading bay, plus making provision for some local VMS / smart signage to indicate whether the route ahead is clear. Suggest £400k based on one location on each of the strategic corridors (excluding Aston Expressway)
Private Sector Capital Funding	50% of total capital costs	£0	No reason for private sector not to contribute significantly, especially given relatively low set-up and ongoing costs	£0	£0	£0
Source of Private	Local umbrella organi-	Private sector could be	Adjacent businesses	NA	NA	NA

Sector Funding	sations, possibly including BIDs, plus participating shops, retail areas etc	invited to respond, once benefits to business can be demonstrated (for example, through publicity by BCC suggesting x% overhead reduction)	and potentially umbrella organisations including BIDs. Also potential scope for industry funding if there are demonstrable operational efficiency improvements			
Public Sector Capital Funding	£10k per organisation - clear marketing needed to demonstrate benefits to retailers, regarding storage, out of hours deliveries etc	Potentially some software intervention to help 'consolidate' procurement processes - likely to be of the order of <£10k	At least 50% of above costs	£0	£0	£200k
Source of Public Sector Funding	BCC	BCC	BCC, potentially some EU funding if packaged as a demonstration project - pioneering use of this technology for loading bays	BCC	BCC	BCC or EU funding
Estimated Revenue / Maintenance costs p.a. to BCC	Potentially £100k per location, allowing for major contribution towards rent, security, manning (ideally 24/7 or similar). Potential cross-subsidy by using additional budgets such as community safety / policing to make the centre a community hub to meet multiple needs due to 18 hour operation (06:00 - 00:00) Revenue from traders to support and / or through rates / charges for being part of the GTD	Potentially half a BCC post, so assume £40k per annum (£25k salary with 60% uplift)	Wrapped up in the capital costs outlined above	Likely to be at least half a post at BCC, so assume £40k. The rough timescales would be five days of mentoring for a large business and 2.5 days for smaller business. When multiplied across the proposed study area, this would likely equate to 0.5 FTE	This measure should represent a change in 'business as usual', hence difficult to assign a specific cost, but could potentially be accommodated within the half post outlined above for freight action plans	The maintenance cost is likely to be insignificant, but there will be an enforcement implication to ensure they are not used by general traffic. The operating cost for the VMS could be accommodated within the costs outlined above for wider VMS provision. Suggest operating cost per annum of £5k each, so £20k to cover four locations, largely to cover enforcement / extension of parking beats
Potential Funders	A combination of BCC	Likely to be BCC only,	Likely to be negligible,	Likely to be BCC only	Scope for considerable	Unknown

(for ongoing/maintenance costs)	and users, provided the benefit is tangible in allowing more out of hours deliveries. There could be a major saving for couriers if they do not have to penetrate adjacent residential areas	but for new developments, meetings with supply chain could be stipulated in planning conditions	hence potential for BCC to consider funding	but potentially crossover / funding from BIDs, economic development groups, town centre management etc	Section 106 funding to support BCC outgoings	
Core Project Stakeholders	BCC, SMEs in district / local centres	Large companies and SMEs	BCC, freight industry	BCC	BCC, developers in the city	BCC, potentially freight industry such as FTA and RHA
Earliest Start Date	Should be one of the first measures to be introduced, prior to strategic routes being developed	Immediate	Within 5 years	Immediate	Immediate	Immediate
Duration	Should be immediate, but does depend on availability of vacant units, but could take the form of a modular structure or an add-on to existing light industrial premises	Ongoing - the process may require BCC to re-visit companies' supply chains at regular intervals, to ensure momentum is maintained	Within 5 years (potentially allowing for the technology to mature)	Within 12 months	Within 12 months	Within 12 months
Key Benefits	Provides local consolidation and flexibility, reducing delivery movements and lowering the numbers of couriers penetrating residential areas	Reduces the demand for deliveries, and potentially offers cost savings to businesses	Allows delivery drivers to determine where they may be able to park, avoiding dead mileage and poor parking	Required to ensure that freight action plans actively promote the 4Rs approach, including a push on re-timing. To ensure deliveries in some locations do not unnecessarily contribute to peak time freight trips	Ensures that servicing and logistics is considered from the outset and is not a 'bolt on', leading to sub-optimal practices	Ensures vehicles can hold back in case of problems on a strategic route, or to avoid 'early running'
Deliverability Risks	Likely to require proving in one location, before wider roll out	Requires significant effort from both BCC and private sector. Hence demonstrable benefits and case	Technology is still relatively new - hence it would be prudent to view the results of the current trial in Bir-	Can only work in a limited number of environments so magnitude of impact not likely to be high	Should be no significant risk, but clearly may affect the viability of certain developments. Could be linked	Appropriate locations need to be identified and impact on enforcement would need to be considered

		studies required	mingham		to freight consolidation proposal - to ensure mandatory participation from the outset	
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While the costing tables have considered the unit costs of the measures outlined, it is useful to consider how these may translate to costs per strategic corridor. The difficulty with this approach however is that many of the behavioural measures apply to areas as a whole, rather than specific corridors. Nonetheless, if looking just at the more major physical / operational measures on a typical strategic corridor, indicative costs would be as follows (all per corridor):

- £1m for VMS, based on a five mile stretch between the Motorway Box and the Ring Road. This assumes one sign per mile, per direction, with indicative costs of £100k per sign. Note an indicative cost of £5m - £10m has been assumed for the general link-up between the HA's VMS and the Birmingham UTMC, but that cost would be spread across all corridors. This route-based VMS on the strategic corridors would ensure that goods vehicles are kept informed of forthcoming journey times and any incidents or congestion. On top of that capital cost, there would be operating costs, which are estimated at £100k for all strategic routes combined – based on a potential efficiency saving through linking with existing UTMC functions;
- £60k per strategic corridor, based on there being three signalised junctions which require treatment to provide priority for goods vehicles (£20k per junction). This would help to smooth the flow of traffic and hence should improve journey times for all users on the strategic corridors. There may also be some limited operational costs depending on the system which is used;
- £50k for freight friend initiatives per strategic corridor, based on £10k per individual location. This cost is for the provision of capital items such as new cages to allow for the transfer of goods between the different freight friends. There is also the requirement for some revenue support from BCC, which has been assumed to be half a post at BCC;
- £100k for a hold back area, allowing delivery vehicles to layover. The maintenance cost is likely to be insignificant, but there will be an enforcement implication to ensure they are not used by general traffic. The operating cost for the VMS could be accommodated within the costs outlined elsewhere for wider VMS provision. Suggested operating cost per annum of £5k per hold back area have been derived to cover enforcement / extension of parking beats;
- £5k per strategic corridor for conversation of approximately 20 parking bays to smarter operation, allowing their use to be viewed in real-time. Costs would be higher if a more comprehensive solution is sought to allow for functionality such as pre-booking; and
- Finally, a key measure is the introduction of neighbourhood consolidation facilities, with the dual purpose of providing storage / consolidation for nearby businesses, but also a location to enable nearby residents to pick up parcels. Whilst the capital costs are likely to be relatively low (indicatively, £20k per location), the ongoing revenue costs are fairly significant and may be in the region of £100k per location, assuming a major contribution towards rent, security, manning etc. We note the scope however to share some costs across different budgets, for example, if the facility could be linked to a community safety / policing function. We could expect there to be 3-5 such facilities per strategic corridor.

As noted earlier, these are the headline physical / operational costs per strategic corridor but these need to be overlaid with the aforementioned behavioural measures, such as collaborating in deliveries. The other major cost which applies to the city as a whole rather than specific corridors is the need for strategic consolidation, perhaps at 2-3 locations on the Ring Road.

7.13 Implementation and Monitoring of Measures

7.13.1 Implementation Strategy

To be successful, a clear implementation strategy will be required for the Servicing and Logistics Package, ensuring that the proposed physical, operational and behavioural measures are introduced in the optimal locations at the optimal time in the Birmingham Connected lifetime. The indicative suggestions regarding implementation timeframe are outlined below, based on the 'families' of measures proposed. Note this is based on the Servicing and Logistics Package in isolation and hence further work will be required regarding interaction with the other Birmingham Connected workstreams, to determine the optimum funding profile and implementation plan:

- Some behavioural measures should be introduced as ‘quick wins’ at the very outset of the programme. Notably, collaboration of supply chains should be introduced as soon as possible, both within large businesses but also between neighbouring businesses. This measure does not rely on other initiatives being introduced and hence early delivery should be a priority;
- The package makes various suggestions regarding loading bays in the city. Regarding the introduction of smarter bays, this should proceed as early as possible in the process, to maximise the usefulness of the existing facilities. The provision of new loading bays is however more of a measure for the medium to long term. Some of the shortages identified by the industry during the consultation may be eased through the introduction of the aforementioned behavioural measures. Hence it would be prudent to determine the level of impact of the behavioural measures before adding extra loading capacity;
- One of the key operational measures is the development of the strategic freight network, referring to the limited number of corridors which are likely to be appropriate for greater levels of freight traffic. The timescale for this intervention is likely to be medium term, as the technology required (plus interface with the Highways Agency’s information) means that a period of ‘lead-in’ time will be required. The phasing of these corridors will need to be such that the signal improvements are made prior to additional traffic being persuaded to join them, so that the benefits are clear from the outset; and
- Freight consolidation forms a major part of the strategy and hence its timing is key. The strategic consolidation centres should be introduced at broadly the same time as the operational improvements to the strategic networks. This ensures that the routing to the consolidation centres is clear and a situation does not arise whereby poor routing behaviour is engrained from the outset.

7.13.2 Monitoring of the Package

Package 8 is looking specifically at Monitoring. As part of the process of deriving this Servicing and Logistics Package, there was liaison with Package 8 regarding suggested ways to monitor the level of impact. The email chain containing the full discussion is set out in Appendix G, but in summary a variety of means of monitoring are suggested, ranging from empirical data sources (for example, the changing level of usage of different routes by goods vehicles) to further consultation with the supply chain industry and customers to understand how they have responded to the changes, for example through collaborating with neighbouring businesses or internally. In regard to the strategic freight consolidation centres, the monitoring should consider both the actual impact on the ground (for example, reduced movements within the central area) but also the level of take-up, on the assumption that the scheme is initially voluntary.

7.14 Impact on People with Disabilities

All the freight measures outlined will give due consideration to the Equality Act 2010 and will ensure that proposals do not negatively impact on people with disabilities. ‘The Access Strategy for People with Disabilities’ will be referenced during the development of proposals, in particular the Table of Considerations and the Design Reference Guide that form part of that Access Strategy.

Those tables ensure all types of disability have been considered including locomotive impairments, visual impairments, hearing impairments, reaching, stretching and dexterity impairments and cognitive impairments. The tables have been developed through interaction with groups representing those with specific disabilities and with documents that are approved by those groups.

In the context of the Servicing and Logistics Package, consideration should be given to enforcement for waiting and loading vehicles to ensure raised kerbs at bus stops are not obscured or blocked. Although not explicitly advocated by the Servicing and Logistics Package, future fleet changes to include electric or hybrid vehicles should include acoustic vehicle alerting systems (AVAS). This may apply to industry fleets as a whole but also to specific proposals in Birmingham, such as the ‘last mile’ deliveries from the strategic freight consolidation centre to the city centre.

Consultation on new freight schemes needs to include disability and wider ‘equality’ groups as part of the initiative-specific engagement. Evidence has shown that it is the detailed design and application that often positively or negatively impacts on protected characteristic groups, so therefore any measures that may

displace or re-route servicing or logistics traffic (i.e. behavioural and ITS measures, not just physical) into areas where pedestrians frequently interact, will need to be carefully considered.

A key point of principle within the Birmingham Connected Servicing and Logistics Package is to move away from a purely 'direct consultation' model that focuses on the impact of changes to road system and physical design, through to a wider consideration of impacts such as driver choice, timings and how 'shared space' areas are managed. A particular priority for consultation should be city centre 'pedestrian' areas and suburban centres on key arterials that have to manage a continued conflict between use as through routes and 'places for people'.

Appendices

Appendix A: Copies of Presentations

This appendix sets out the following three external presentations:

- Freight Council – 24th June 2014;
- Element Energy / Birmingham City Council Session on Overall Carbon Blueprint Work – 29th July 2014; and
- Chamber of Commerce – 21st August 2014.

Freight Council – 24th June 2014

BMAP – Freight Strategy

Briefing Presentation for West Midlands Freight Council (FTA)

Jon Harris, Atkins Technical Lead

Briefing and Stakeholder Engagement Session

25th June 2014

Plan Design Enable

Regional Item – the BMAP process

- Quick explanation of the BMAP process and how freight fits in
- What Atkins have been tasked to do over the next 8 weeks and our approach
- Where we would value your help and assistance
- How to engage



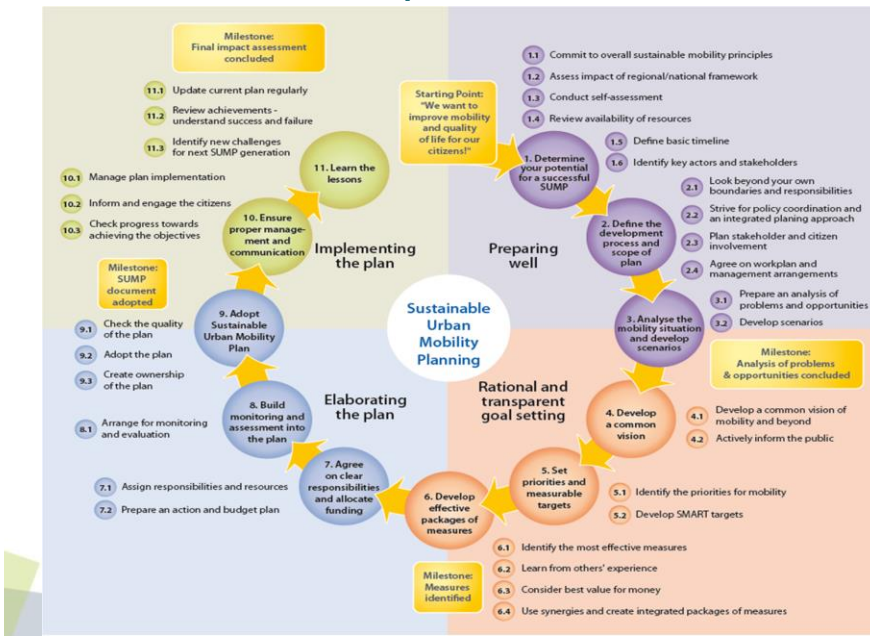
Green Paper
Summary Document
November 2013

About the BMAP process

- Birmingham Urban Mobility Plan
- Green Paper (issues) – turning into a White Paper (action and delivery plan) later this year
- Consider the ‘now’, 15-20 years **and longer term vision**
- Need to further develop the ‘freight strand’ in terms of
 - Evidence
 - Vision
 - Content



About the BMAP process



What are Atkins doing?

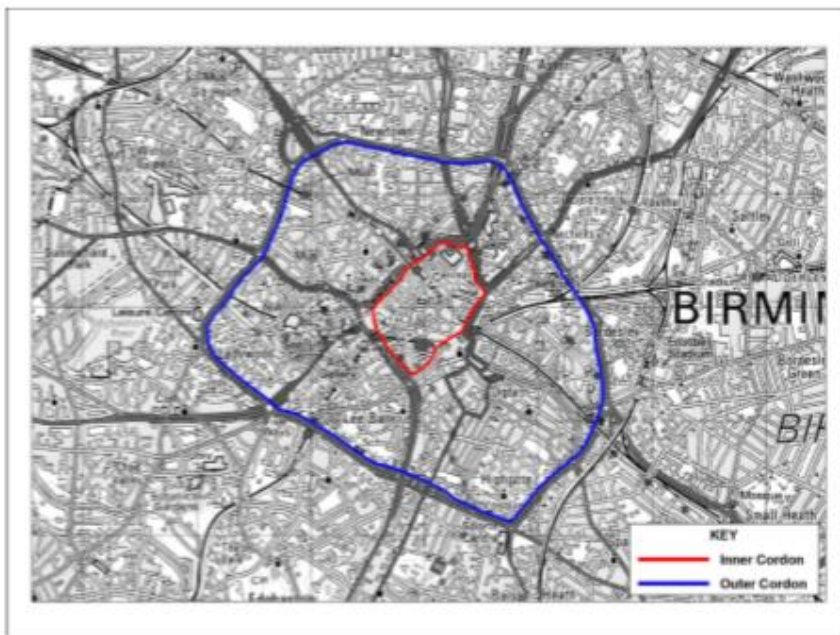
ATKINS

- 1 Providing expert help and support on the freight aspects of BMAP and linking across to other BMAP workstreams (Green Travel Zones, Mobility, Roadspace allocation)
- 2 Building out the evidence base – qualitative and quantitative data
- 3 Developing the menu of measures (interventions) looking at 'Birmingham city' and the wider geography – this covers physical **and** behavioural tools
- 4 Building on the '4Rs' used during the London 2012 Games and their scope to change the way Birmingham operates – Retiming, Rerouting, Remoding and Reducing. This will involve testing different scenarios
- 5 Understanding how professional institutions/associations and key operators see the freight situation – and futureproofing the suggested menu of measures against their views (a 'roadtest workshop')
- 6 Bringing together international/European best practice and solutions

5

Building on the evidence base

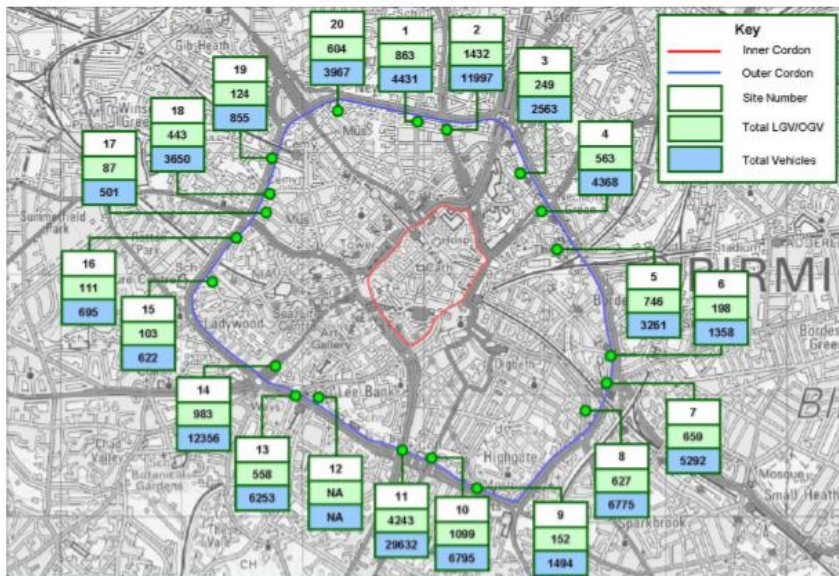
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6

Building on the evidence base

Figure 3.5 – Flows into Birmingham city centre (12 hour inbound flows)



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7

Where we would value your help

- **One to one engagement** with members of the Freight Council
 - phone call
 - face to face
 - email pointers
- **Freight Stakeholder workshop** (to be held w/b 13th July 2014) to roadtest some of the ideas/concepts and validate the approach
- **Data sources** – particularly sample information on
 - Freight origins and destinations
 - Routing choices
 - Time of travel
 - Type of vehicles used
 - Sample profiling for 3PL operators, manufacturers, retailers, '.com' deliveries, independent/small businesses etc
- **Harness your vision and ideas**

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8

How to engage

ATKINS

- Please let Jon Harris (Atkins) or Kevin Cummins (BCC) know if you can take part in this next stage of work (one to one or workshop session)

- Follow up by contacting

Jon Harris

07881 805 952

jon@harrisethical.co.uk

Kevin Cummins

01214645992

Kevin.Cummins@birmingham.gov.uk



BMAP – Linking to the Blueprint

Jon Harris

Briefing and Cross-Linking Session

29th July 2014

Plan Design Enable

1

About the BMAP process

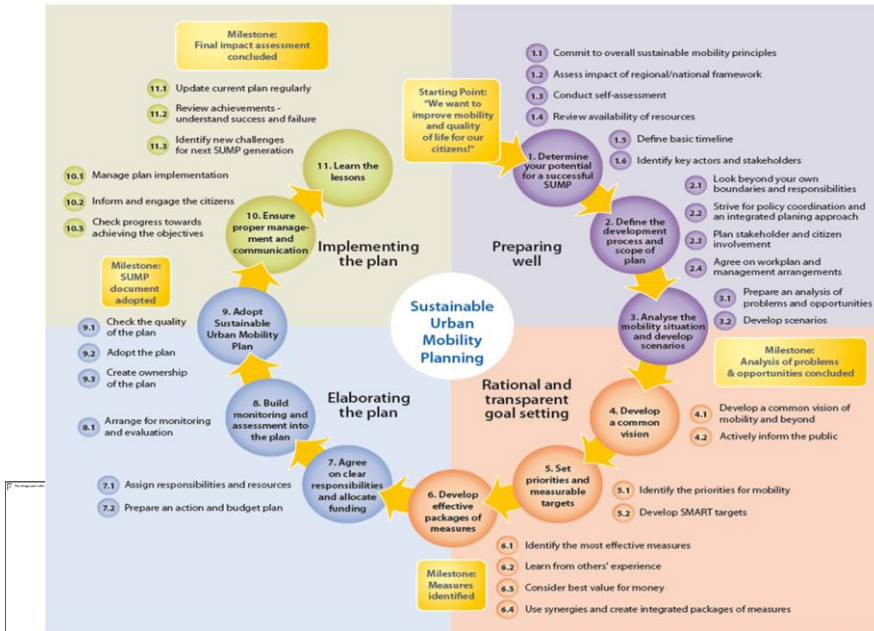
- Birmingham Urban Mobility Plan
- Green Paper (issues) – turning into a White Paper (action and delivery plan) later this year
- Consider the ‘now’, 15-20 years **and longer term vision**
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 - Evidence
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 - Content



2

About the BMAP process

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3

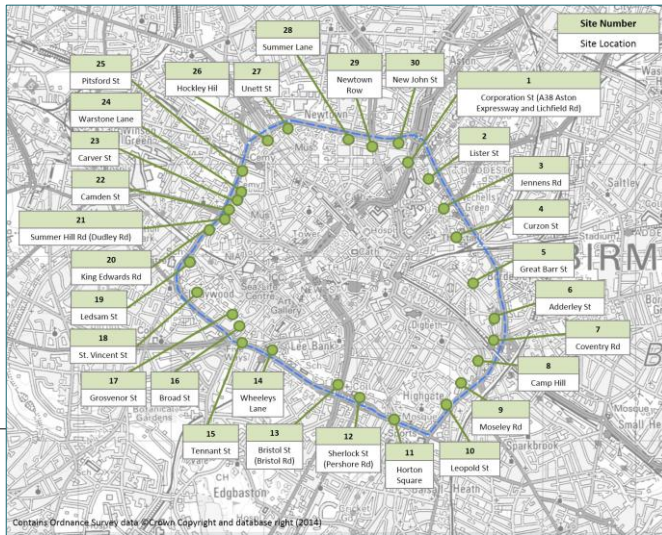
What are Atkins doing?

ATKINS

- 1 Providing expert help and support on the freight aspects of BMAP and linking across to other BMAP workstreams (Green Travel Zones, Mobility, Roadspace allocation)
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- 5 Understanding how professional institutions/associations and key operators see the freight situation – and futureproofing the suggested menu of measures against their views (a 'roadtest workshop')
- 6 Bringing together international/European best practice and solutions

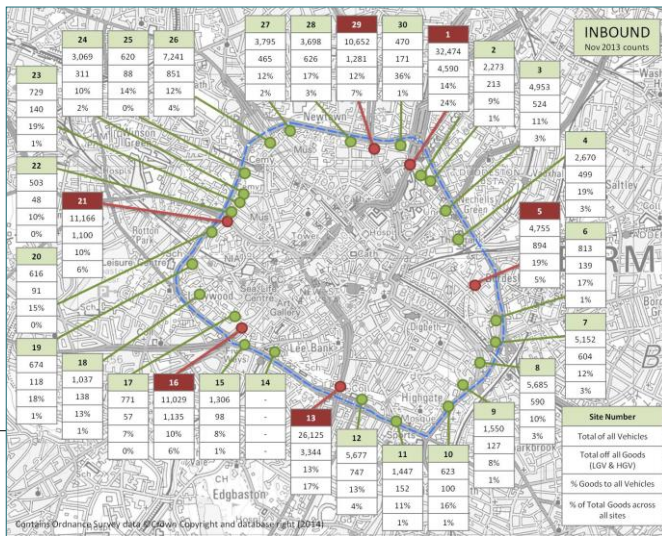
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Where we are with technical research and evaluation



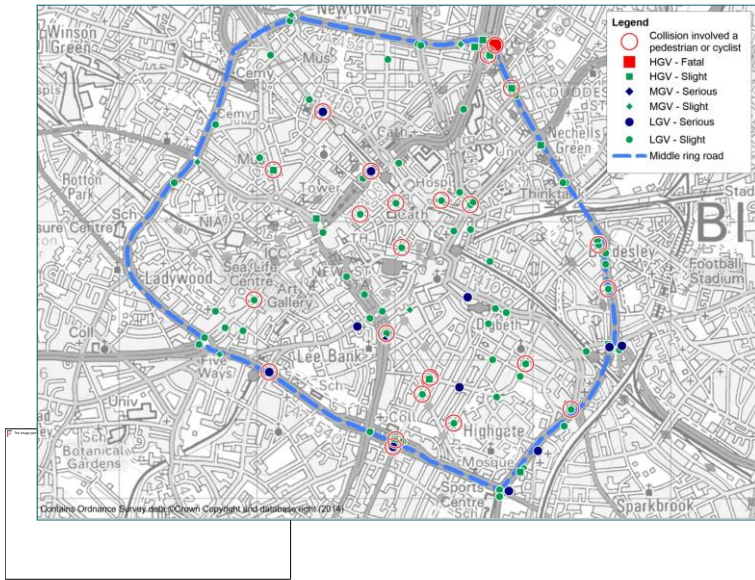
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Where we are with technical research and evaluation

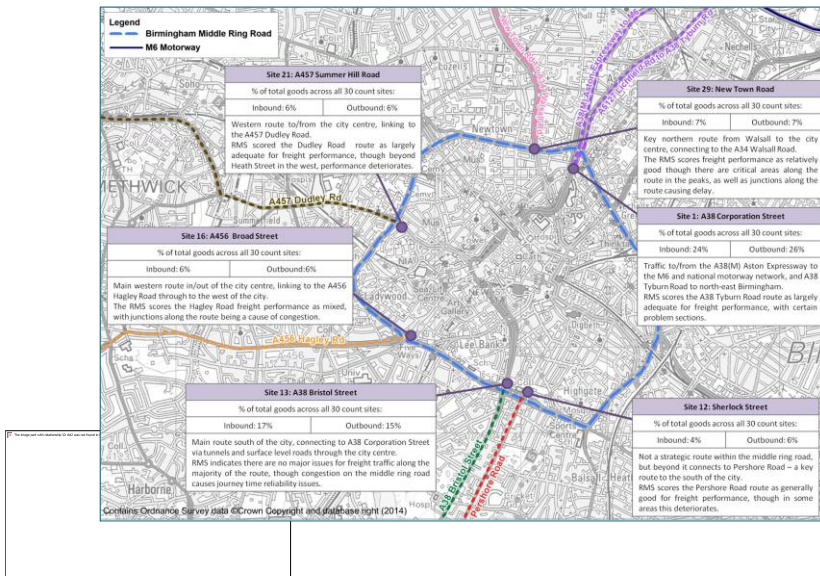


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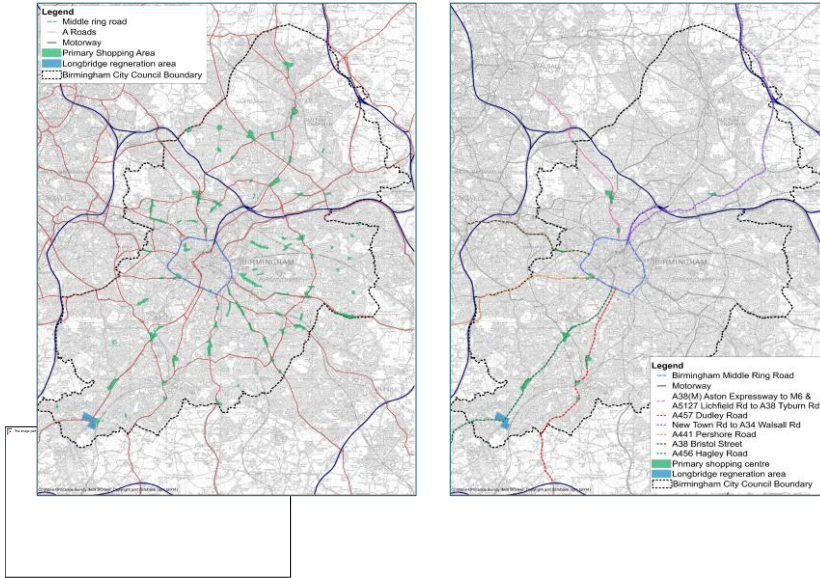
Where we are with technical research and evaluation



Where we are with technical research and evaluation

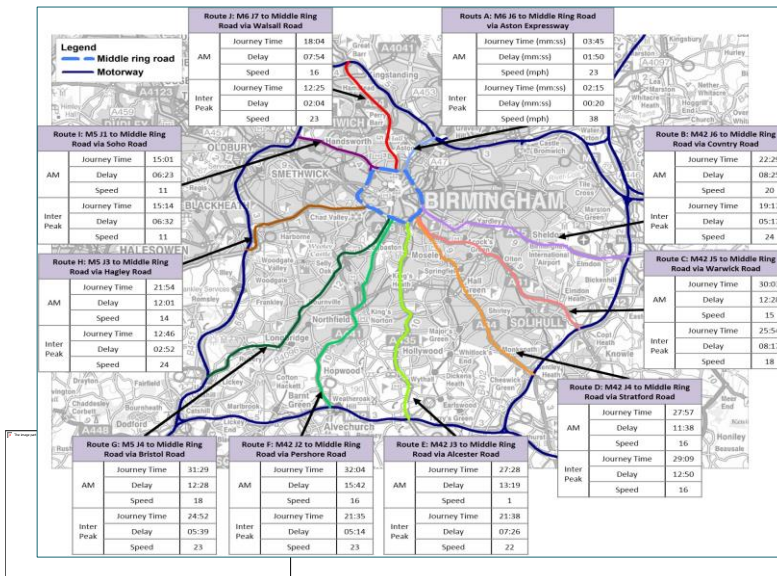


Where we are with technical research and evaluation



9

Where we are with technical research and evaluation



10

How the menu evolved.....

ATKINS

Scenario Number & Name:													
City Centre Environment													
Type	Number	Description	Timeframe (Short / Medium / Long)	Strategic / Major or Site Specific / Other Measures	Four Rs	Reduce	Re-use	Retain	Reform	Re-use	Reform	Re-use	Reform
PHYSICAL INTERVENTIONS	1	Provide charging points for LGVs / vans within city centre servicing areas	Medium Term (2020 - 2050)	Strategic / Major	No Impact / Minimal	Medium	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal
	2	Provide hold-back parking bays to allow safe waiting away from the city centre core area	Short Term (2014- 2019)	Strategic / Major	No Impact / Minimal	No Impact / Minimal	Medium	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal
	3	Make sure that Birmingham's market is as accessible as it possibly can be											
	4	Route HDVs away from shared space areas during daytime	Short Term (2014- 2019)	Site Specific / Minor	No Impact / Minimal	Medium	Large	Large					
	5	Make LGVs use preferred routes to avoid pedestrian conflict	Short Term (2014- 2019)	Strategic / Major	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	Large					
	6	Provide parking areas to avoid illegal pavement parking. Could take the form of 'stop and drop'	Short Term (2014- 2019)	Site Specific / Minor	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	Medium					
	7	Design safe street to prevent pavement overrun but without street clutter and access problems for disabled people	Medium Term (2020 - 2050)	Strategic / Major	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal					
	8	Provide high quality pavements to avoid damage to kerbs, dropped kerbs, pavements and tactile etc.	Medium Term (2020 - 2050)	Strategic / Major	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal	No Impact / Minimal					
	9	Create a city centre logistics hub for smaller businesses / goods and fleet of electric vehicles for onwards deliveries	Medium Term (2020 - 2050)	Strategic / Major	Medium	Large	Medium	Medium					
	10	Ban deliveries for certain hours during the day unless an electric / low emission vehicle is used	Medium Term (2020 - 2050)	Strategic / Major	Medium	Medium	Large	Medium					
	11	Transport (all) freight via New Street Station	Medium Term (2020 - 2050)	Strategic / Major	No Impact / Minimal	Medium	Medium	Medium					
	12	Transfer freight to Midland Metro Light Rail System	Short Term (2014- 2019)	Strategic / Major	No Impact / Minimal	Medium	Medium	Medium					
	13	Something to do with water freight - unloading area?	Short Term (2014- 2019)	Strategic / Major	No Impact / Minimal	Medium	Medium	Medium					
	14	All day LEZ	Short Term (2014- 2019)	Strategic / Major	Medium	Medium	No Impact / Minimal	No Impact / Minimal					
15													
16													
17													
18													
19													
20													

- Tested using a scoring system and then a colour coding / ranking
- We'd like you to do 2 things.....

11

Testing the interventions

ATKINS

- Tell us whether you agree with our general approach and anything you'd change
- Tell us your view about any additional measures that would work for you and your organisation

12

Bringing it all together

ATKINS



13

Chamber of Commerce – 21st August 2014



BMAP – Freight Strategy

Briefing Presentation for Birmingham Chamber of
Commerce – Business Transport Group

Andrew Clark, Atkins

Briefing Session

21st August 2014

Plan Design Enable

The BMAP process

- Quick explanation of the BMAP process and how freight fits in
- What Atkins have been tasked to do
- Where we would value your help and assistance
- How to engage




What are Atkins doing?

ATKINS

- Providing expert help and support on the freight aspects of BMAP and linking across to other BMAP workstreams (Green Travel Districts, Mobility, Roadspace Allocation, Public Transport)
- Building out the evidence base – qualitative and quantitative data
- Developing the menu of measures (interventions) looking at ‘Birmingham city’ and the wider geography – this covers physical, operational and behavioural tools
- Building on the ‘4Rs’ used during the London 2012 Games and their scope to change the way Birmingham operates – Retiming, Rerouting, Remodelling and Reducing
- Understanding how professional institutions / associations and key operators see the freight situation – and futureproofing the suggested menu of measures against their views (a ‘roadtest workshop’)
- Bringing together international / European best practice and solutions



3

Where we are with consultation and engagement

ATKINS

- Strategic engagement with the FTA West Midlands Freight Council as a starting point
- One to one engagements booked / held with:
 - FTA, CILT – member organisations
 - Dairy Crest – dairy and chilled
 - BT – service, infrastructure and emergency repairs
 - Sainsbury’s – food and non-food retail
 - Mondelez / Cadbury
 - Big Yellow
- BCC key officers – in progress
- Tester workshop held as an important testing ground and a place for new ideas to come forward
- Follow up with key organisations such as the Chamber of Commerce



4

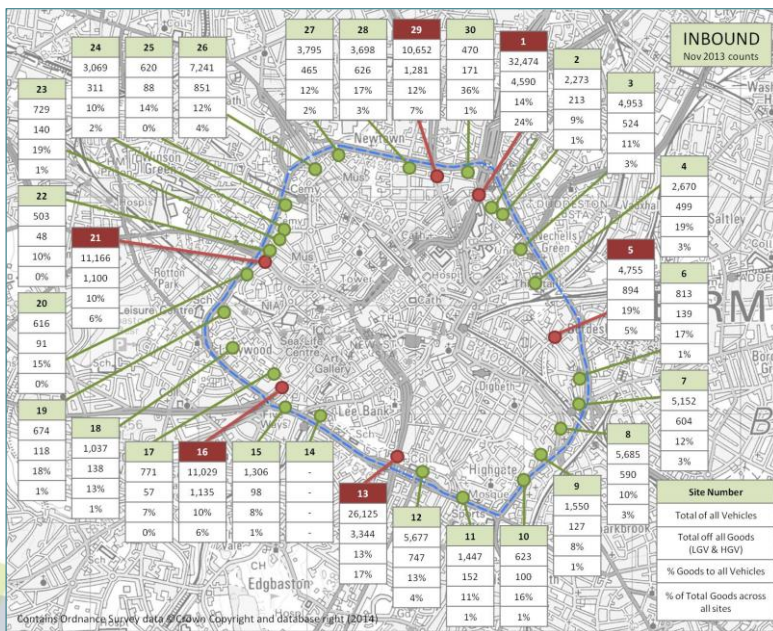
Where we are with technical research and evaluation

- Review of existing key data – road safety statistics, journey times, freight ‘mix’, freight trends etc
- Split up the network into 5 main types
 - City centre environment within Ring Road
 - Key arterials to BCC boundary
 - Strategic arterials to Birmingham Motorway Box – M6/M5/M42
 - Linear communities (primary shopping centres) straddling the key radials
 - Local / district centres and residential areas
- Review of TrafficMaster, PRISM and other data etc
- Menu of measures developed split into physical, operational and behavioural groups



5

Building on the evidence base



6

How the menu of interventions evolved

ATKINS

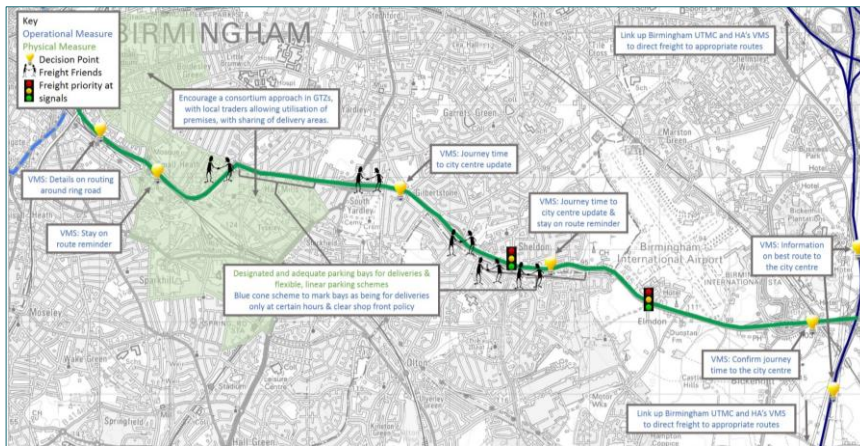
Type	Measure (Colour Coding Indicates Physical / Operational / Behavioural)	Workshop Comments	Post-Workshop Scoring (- indicates no change)
PHY	Provide electric charging points for LGVs within city centre servicing areas	Concern regarding availability of technology. Concern that this would require dwell time which drivers do not have. Charging is more likely to be done at the courier's own facility before the journey is started	-
PHY	Introduce a permanent Low Emission Zone in the city centre area	There was an acceptance that this may happen and it would be beyond the control of the industry, but concern was raised regarding the possible unwanted effect of shifting more polluting vehicles elsewhere. Hence downgraded from green to amber	Changed from green to amber (downgraded)
PHY	Ban deliveries for certain hours during the day unless an electric / low emission vehicle is used	-	-
OP	Replace existing 2005 Freight Atlas with an online version linked to SatNAV technology	Most companies do not encourage the use of SatNav and hence would not back a move to a SatNav based atlas	Changed from green to red (downgraded)
PHY	Route HGVs away from shared space areas during daytime	Acceptance that this may be a useful measure but with a health warning that it may significantly increase HGV movements at certain times of the day	-
PHY	Provide clearer signing to denote 'unsuitable' routes for different types of freight vehicle	-	-
PHY	Make LGVs use preferred routes to avoid pedestrian conflict	Feasibility of this may be questionnaire. It was clear that whilst in theory it is a useful measure, the exact location would require detailed work	-
OP	Provide a logistics control centre to allow advance journey planning, real-time advice on routing and advice on hold-back when emergencies occur	Acceptance that this would be a strong measure, but the messages must be in plain English, avoiding using road numbers	-
OP	Provide advance warning of temporary and emergency roadworks on a live real-time map, showing anticipated	-	-



7

Emerging strategy

ATKINS



8

Where we would value your help

ATKINS

- **One to one engagement** with members of the Chamber of Commerce
 - phone call
 - email pointers
 - **completion of our engagement pro forma (as issued)**
- **Data sources** – particularly sample information on
 - Freight origins and destinations
 - Routing choices
 - Time of travel
 - Type of vehicles used
 - Sample profiling for 3PL operators, manufacturers, retailers, ‘.com’ deliveries, independent/small businesses etc
- **Harness your vision and ideas**



9

How to engage

Follow up by contacting:

Jon Harris

07881 805 952

jon@harrisethical.co.uk

Andrew Clark

0121 483 6102

andrew.clark@atkinsglobal.com

ATKINS



10

Appendix B: One to One Questionnaire

This appendix sets out the pro-forma used for the one to one consultation sessions.

Interviewer _____
Interviewee _____

1. What are the biggest logistics challenges for your organisation in Birmingham today?

If possible differentiate between the city centre, district/local centres, key corridors and wider servicing of the Birmingham 'box' (M5 / M42 / M6).

2. How have you needed to change your operational profile to address issues such as delay / congestion?

3. What kind of metrics do you hold in terms of these challenges (journey time delay, journey time reliability, no of products delivered on time?).

4. How responsive are your customers to adjusting their expectations and delivery times (i.e. using shoulders of the day?) or are they 'narrow' in their outlook?

5. What measures 'on the ground' would make servicing and deliveries work better (e.g. freight using bus lanes overnight)?

- For the city centre
- For local and district centres
- For key arterials
- For strategic movements (beyond Birmingham unitary boundary)

6. What management and process measures would make the Birmingham system work better (e.g. freight action plans for big organisations to reduce unnecessary traffic, customer allows 18/7 deliveries instead of 12/5)?

7. How do you see the 'freight' network in Birmingham?

- In 5 years
- In 20 years
- In 50 years
- Please let us know how much priority you think 'freight' should have in the future and is there a place for curfews or should it be 'open access'?

8. What are your biggest concerns about the viability of servicing and delivery activities in the future (e.g. parking charges, penalties, emission zone impacts?).

9. What opportunities do you see in relation to fleet renewals and plans for the use of ULEVs

10. What ITS solutions do you see as needed to optimise freight as part of your longer terms vision set out in Q7?

11. What data/insight material would you be willing to share on a confidential basis (e.g. sample original destination data for a month, 'late' records and where they occur, % of local and through traffic you generate, routing information etc.)?

12. Any other points? (including customer referrals).

Appendix C: Additional Technical Review Findings

This appendix provides additional analysis on the accident data and traffic count data.

C.1 Cordon Traffic Count Results

Table C.1 Cordon Traffic Count Results – Inbound

Count	Location	Number of Vehicles					Proportion of Total Vehicles				Proportion of Total Goods Vehicles			Proportion of Total Goods Vehicles Across all 30 Sites Passing Through That Site
		Total	LGV	MGV	HGV	Total Goods	LGV	MGV	HGV	Total Goods	LGV	MGV	HGV	
1	Corporation St	32,474	4,002	327	261	4,590	12.3%	1.0%	0.8%	14%	87%	7%	6%	24%
2	Lister St	2,273	185	27	1	213	8.1%	1.2%	0.0%	9%	87%	13%	0%	1%
3	Jennens Rd	4,953	469	42	13	524	9.5%	0.8%	0.3%	11%	90%	8%	2%	3%
4	Curzon St	2,670	409	58	32	499	15.3%	2.2%	1.2%	19%	82%	12%	6%	3%
5	Great Barr St	4,755	741	107	46	894	15.6%	2.3%	1.0%	19%	83%	12%	5%	5%
6	Adderley St	813	127	10	2	139	15.6%	1.2%	0.2%	17%	91%	7%	1%	1%
7	Coventry Rd	5,152	539	37	28	604	10.5%	0.7%	0.5%	12%	89%	6%	5%	3%
8	Camp Hill	5,685	542	35	13	590	9.5%	0.6%	0.2%	10%	92%	6%	2%	3%
9	Moseley Rd	1,550	116	8	3	127	7.5%	0.5%	0.2%	8%	91%	6%	2%	1%
10	Leopold St	623	80	15	5	100	12.8%	2.4%	0.8%	16%	80%	15%	5%	1%
11	Horton Square	1,447	144	7	1	152	10.0%	0.5%	0.1%	11%	95%	5%	1%	1%
12	Sherlock St	5,677	659	50	38	747	11.6%	0.9%	0.7%	13%	88%	7%	5%	4%
13	Bristol St	26,125	2,922	227	195	3,344	11.2%	0.9%	0.7%	13%	87%	7%	6%	17%
14	Wheeleys Lane	-	-	-	-	-	-	-	-	-	-	-	-	0%
15	Tennant St	1,306	89	6	3	98	6.8%	0.5%	0.2%	8%	91%	6%	3%	1%
16	Broad St	11,029	1,053	66	16	1,135	9.5%	0.6%	0.1%	10%	93%	6%	1%	6%
17	Grosvenor St	771	52	5	-	57	6.7%	0.6%	0.0%	7%	91%	9%	0%	0%
18	St Vincent St	1,037	123	14	1	138	11.9%	1.4%	0.1%	13%	89%	10%	1%	1%
19	Ledsam St	674	106	10	2	118	15.7%	1.5%	0.3%	18%	90%	8%	2%	1%
20	King Edwards Rd	616	83	7	1	91	13.5%	1.1%	0.2%	15%	91%	8%	1%	0%
21	Summer Hill Rd	11,166	948	117	35	1,100	8.5%	1.0%	0.3%	10%	86%	11%	3%	6%
22	Camden St	503	42	4	2	48	8.3%	0.8%	0.4%	10%	88%	8%	4%	0%
23	Carver St	729	125	9	6	140	17.1%	1.2%	0.8%	19%	89%	6%	4%	1%
24	Warstone Lane	3,069	281	29	1	311	9.2%	0.9%	0.0%	10%	90%	9%	0%	2%
25	Pitsford St	620	66	17	5	88	10.6%	2.7%	0.8%	14%	75%	19%	6%	0%
26	Hockley Hill	7,241	765	73	13	851	10.6%	1.0%	0.2%	12%	90%	9%	2%	4%
27	Unett St	3,795	434	29	2	465	11.4%	0.8%	0.1%	12%	93%	6%	0%	2%
28	Summer Lane	3,698	569	46	11	626	15.4%	1.2%	0.3%	17%	91%	7%	2%	3%
29	Newtown Row	10,652	1,120	124	37	1,281	10.5%	1.2%	0.3%	12%	87%	10%	3%	7%
30	New John St	470	128	40	3	171	27.2%	8.5%	0.6%	36%	75%	23%	2%	1%
	Total	151,573	16,919	1,546	776	19,241	11.2%	1.0%	0.5%	12.7%	88%	8%	4%	

Table C.2 Cordon Traffic Count Results – Outbound

Count	Location	Number of Vehicles					Proportion of Total Vehicles				Proportion of Total Goods Vehicles			Proportion of Total Goods Vehicles Across all 30 Sites Passing Through That Site
		Total	LGV	MGV	HGV	Total Goods	LGV	MGV	HGV	Total Goods	LGV	MGV	HGV	
1	Corporation St	28,849	4,199	328	227	4,754	14.6%	1.1%	0.8%	16%	88%	7%	5%	26%
2	Lister St	1,955	154	16	2	172	7.9%	0.8%	0.1%	9%	90%	9%	1%	1%
3	Jennens Rd	3,520	303	54	22	379	8.6%	1.5%	0.6%	11%	80%	14%	6%	2%
4	Curzon St	3,754	388	56	35	479	10.3%	1.5%	0.9%	13%	81%	12%	7%	3%
5	Great Barr St	4,076	707	86	48	841	17.3%	2.1%	1.2%	21%	84%	10%	6%	5%
6	Adderley St	616	106	19	7	132	17.2%	3.1%	1.1%	21%	80%	14%	5%	1%
7	Coventry Rd	5,015	554	55	31	640	11.0%	1.1%	0.6%	13%	87%	9%	5%	3%
8	Camp Hill	5,630	563	38	22	623	10.0%	0.7%	0.4%	11%	90%	6%	4%	3%
9	Moseley Rd	1,054	111	5	2	118	10.5%	0.5%	0.2%	11%	94%	4%	2%	1%
10	Leopold St	1,583	222	32	8	262	14.0%	2.0%	0.5%	17%	85%	12%	3%	1%
11	Horton Square	2,237	226	7	2	235	10.1%	0.3%	0.1%	11%	96%	3%	1%	1%
12	Sherlock St	7,080	1,028	115	61	1,204	14.5%	1.6%	0.9%	17%	85%	10%	5%	6%
13	Bristol St	28,946	2,467	251	87	2,805	8.5%	0.9%	0.3%	10%	88%	9%	3%	15%
14	Wheeleys Lane	5,545	423	18	8	449	7.6%	0.3%	0.1%	8%	94%	4%	2%	2%
15	Tennant St	837	57	2	1	60	6.8%	0.2%	0.1%	7%	95%	3%	2%	0%
16	Broad St	10,742	1,013	93	15	1,121	9.4%	0.9%	0.1%	10%	90%	8%	1%	6%
17	Grosvenor St	1,868	124	2	1	127	6.6%	0.1%	0.1%	7%	98%	2%	1%	1%
18	St Vincent St	735	88	4	0	92	12.0%	0.5%	0.0%	13%	96%	4%	0%	0%
19	Ledsam St	718	98	6	1	105	13.6%	0.8%	0.1%	15%	93%	6%	1%	1%
20	King Edwards Rd	314	35	4	1	40	11.1%	1.3%	0.3%	13%	88%	10%	3%	0%
21	Summer Hill Rd	9,604	926	108	26	1,060	9.6%	1.1%	0.3%	11%	87%	10%	2%	6%
22	Camden St	-	-	-	-	-	-	-	-	-	-	-	-	0%
23	Carver St	-	-	-	-	-	-	-	-	-	-	-	-	0%
24	Warstone Lane	3,268	297	37	1	335	9.1%	1.1%	0.0%	10%	89%	11%	0%	2%
25	Pitsford St	461	29	10	5	44	6.3%	2.2%	1.1%	10%	66%	23%	11%	0%
26	Hockley Hill	5,222	515	34	15	564	9.9%	0.7%	0.3%	11%	91%	6%	3%	3%
27	Unett St	3,459	366	41	2	409	10.6%	1.2%	0.1%	12%	89%	10%	0%	2%
28	Summer Lane	2,319	315	23	8	346	13.6%	1.0%	0.3%	15%	91%	7%	2%	2%
29	Newtown Row	9,523	1,070	125	20	1,215	11.2%	1.3%	0.2%	13%	88%	10%	2%	7%
30	New John St	-	-	-	-	-	-	-	-	-	-	-	-	0%
Total		148,930	16,384	1,569	658	18,611	11.0%	1.1%	0.4%	12.5%	88%	8%	4%	

C.2 High Volume Routes

Information from Birmingham City Council's Route Management Strategy (RMS) 2009 has been used to determine the performance of each of the high volume routes identified in Chapter Three, the results of which are detailed in the following sections.

A38 Corporation Street Route (Site 1)

Traffic count data for Corporation Street reveals this section of road to be the main route for freight traffic heading in or out of the city centre, carrying 24% of all inbound goods vehicles to the city and 26% of the outbound. Corporation Street accommodates traffic heading inbound from the M6 via the A38(M) Aston Expressway and from the A38 Kinsbury Road/Tyburn Road and A5127 Aston North Road/Lichfield Road. Unfortunately it is not possible to disaggregate the routes used by vehicles passing along Corporation Street.

Corporation Street connects through to the A38 Bristol Street which is the main southern artery in and out of the city centre via a series of tunnels and surface level strategic routes.

No data is held as to performance of freight movements along the Aston Expressway. However, information from the RMS details the performance of the A38 Kinsbury Road/Tyburn Road and A5127 Aston North Road/Lichfield Road route, as detailed below.

In terms of freight movements along the A38/A5127, performance is largely adequate. However, certain sections of the route are highlighted as being of concern for freight traffic, in particular the section of route between Tyburn House Island and the Tyburn Road/Kingsbury Road junction is noted as critical. Along this section of route journey time reliability is poor, with journey times varying by more than 80% from their mean. During the morning peak, journey times along the whole route vary from the mean by up to 40-50%, whilst in the PM peak this falls to 20-30%.

Sherlock Street (Site 12)

Sherlock Street accounts for 4% of the total inbound traffic to the city and 6% of the outbound. The road is not a strategic route, being a mixture of wide single carriageway standard with a mixture of residential and businesses land uses.

Sherlock Street intersects the middle ring road at the junction of A4540 Belgrave Middleway and A441 Pershore Road. The Pershore Road runs parallel with the A38 Bristol Road, heading south of the city centre. It is predominantly single carriageway, except between Pebble Mill Road and Dogpool Lane where there are two lanes in each direction. No data is held as the route performance along Sherlock Street, though the Birmingham RMS contains information on Pershore Road, as detailed below.

The Birmingham RMS notes that freight performance along the Pershore Road route is generally good. However, around the local centres of Ten Acres and Kings Norton speeds are lower and journey time reliability is an issue. Bus use along the single carriageway sections of the route cause delay for all traffic users. Generally, journey time reliability is good with little difference between the peak and mean journey times across the route as a whole.

A38 Bristol Street (Site 13)

The A38 Bristol Street is the main south route in and out of the city. Of all freight traffic heading inbound to the city, 17% travel via Bristol Street, whilst 15% of outbound traffic use the route. Where Bristol Street crossed the middle ring road, the road is of dual carriageway standard, with three lanes in each direction.

Bristol Street head south through the city, passing through Selly Oak and Northfield, connecting to the M5 Junction 4, south-west of Rubery. Much of the route is of dual carriageway standard, or wide single carriageway (though on street parking can limit this). Bristol Street is one the main arteries passing through the city centre, connecting to Corporation Street in the north of the centre via a series of tunnels or surface level strategic routes.

Birmingham's RMS indicates that there are no major issues for freight traffic along the majority of the route. However, the section around the Priory Road and Pebble Mill Road junctions has slow freight speeds and

poor journey time reliability. Additionally, congestion around the middle ring road causes day to day journey reliability to vary.

A456 Broad Street (Site 16)

A456 Broad Street is the main western route in and out of the city centre, linking the centre to the A456 Hagley Road which passes through Bearwood and Quinton to reach the M5 Junction 3 in the west. The road accounts for 6% of all goods vehicles heading into the city and 6% of those heading out. Hagley Road/Broad Street intersects the middle ring road at the Five Ways Island, one of the key junctions on the ring road. Along the Hagley Road/Broad Street route, the carriageway varies between single and dual carriageway, with multiple lanes in each direction.

The Birmingham RMS identifies Hagley Road as being of mixed performance freight traffic. During the peak hours, freight performance is very poor between Five Ways Island and Bearwood Road/Lordswood Road. However, the route beyond Bearwood Road/Lordswood Road performs relatively well, though junctions along the whole of the route cause delay to all traffic.

A457 Summer Hill Road (Site 21)

The A457 Summer Hill Road carries 6% of total inbound goods vehicles to the city centre and 6% of outbound freight vehicles. It intersects the middle ring road at Spring Hill Roundabout, with the A457 continuing west of the city centre to form the Dudley Road, heading into Smethwick. Dudley Road is of single carriageway standard, and has largely two lanes in either direction.

Birmingham's RMS identifies the Dudley Road route as being largely adequate in terms of freight performance. However, towards the west, beyond Heath Street, performance of the route deteriorates with freight speeds being low. The study notes that the route is not conducive to goods vehicle movements due to the narrow nature of the road and on street parking, which limits the east of movement for freight vehicles.

New Town Road (Site 29)

New Town Road is a key route for vehicles entering the city centre from the north of the city. It connects to the A34 Walsall Road which heads to Walsall in the north of the city via Perry Barr and Great Barr. The route is of dual carriageway standard, with multiple lanes in either direction. The route carries 7% of all inbound goods vehicles to the city centre and 7% of those heading outbound.

The performance of freight vehicles along the Walsall Road route is scored as relatively good in the RMS, though there are critical areas between Newton Middleway and Park Lane during the morning peak. In the PM peak the critical section shifts to between Newton Middleway and St Stephens Street, and Beeches Road and Newton Road. The majority of delay is attributed to the junctions along the route, particularly at Newton Road junction.

It is noted that the uphill gradient in the outbound direction may be a deterrent to goods vehicle use.

C.3 Freight Journey Times

Table C.3 AM and Inter-Peak Journey Times on High Volume Freight Routes

Route	Origin	Destination	Via	Distance (km)	AM			Inter-Peak			Change in delay
					Time (mm:ss)	Delay (mm:ss)	Speed (mph)	Time (mm:ss)	Delay (mm:ss)	Speed (mph)	
A	M6 J6 (merge)	Middle Ring Road	Aston Expressway	2.3	03:45	01:50	23	02:15	00:20	38	-82%
B	M42 J6		Coventry Rd	12.2	22:29	08:25	20	19:17	05:17	24	-37%
C	M42 J5		Warwick Rd	12.3	30:06	12:28	15	25:54	08:17	18	-34%
D	M42 J4		Stratford Rd	12.1	27:57	11:38	16	29:09	12:50	16	10%
E	M42 J3		Alcester Rd	12.9	27:28	13:19	17	21:38	07:26	22	-44%
F	M42 J2		Pershore Rd	13.6	32:04	15:42	16	21:35	05:14	23	-67%
G	M5 J4		Bristol Rd	15.6	31:29	12:28	18	24:52	05:39	23	-55%
H	M5 J3		Hagley Rd	8.2	21:54	12:01	14	12:46	02:52	24	-76%
I	M5 J1		Soho Rd	4.5	15:01	06:23	11	15:14	06:32	11	2%
J	M6 J7		Walsall Rd	7.7	18:04	07:54	16	12:25	02:04	23	-74%

C.4 Freight Destinations

Figure C.1 LGV Zone Destinations – IP

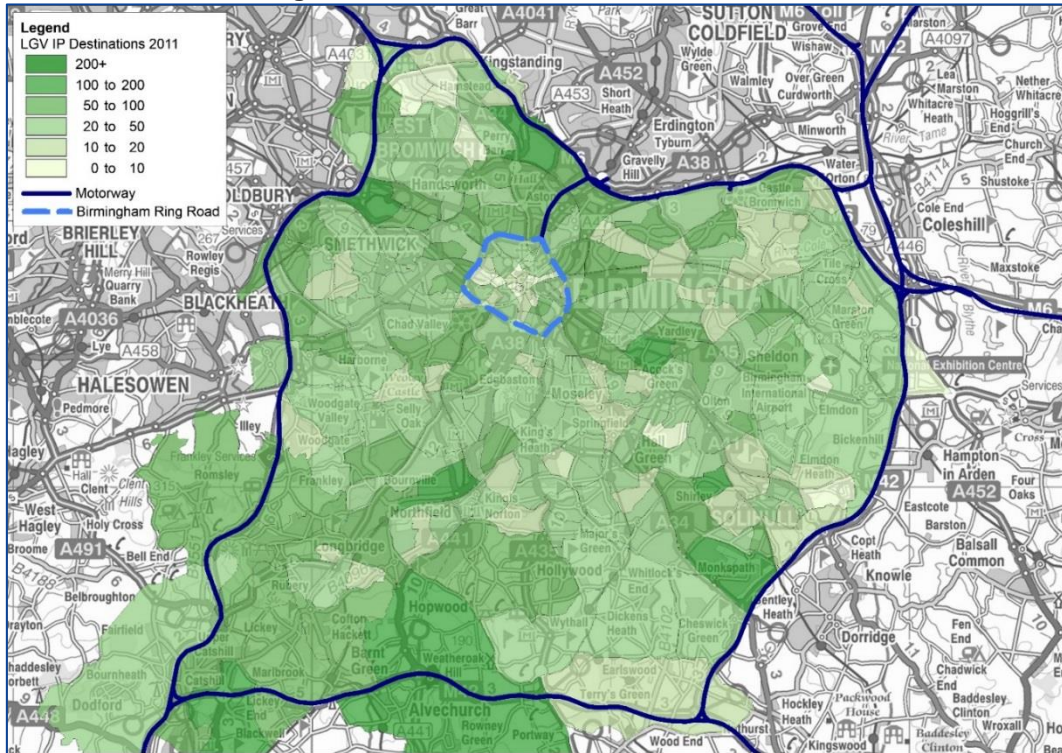
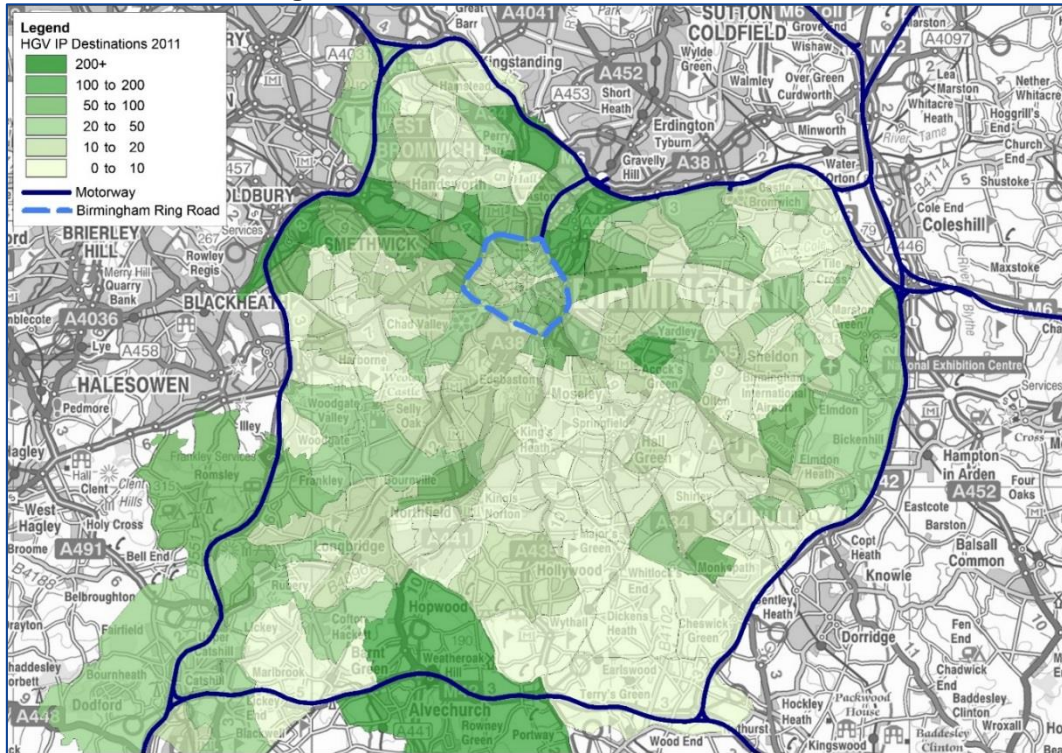


Figure C.2 HGV Zone Destinations – IP



C.5 Collisions Occurring within Birmingham City Centre

Figure C.3 Proportional Split of City Centre Collisions Involving a Goods Vehicle by Classification

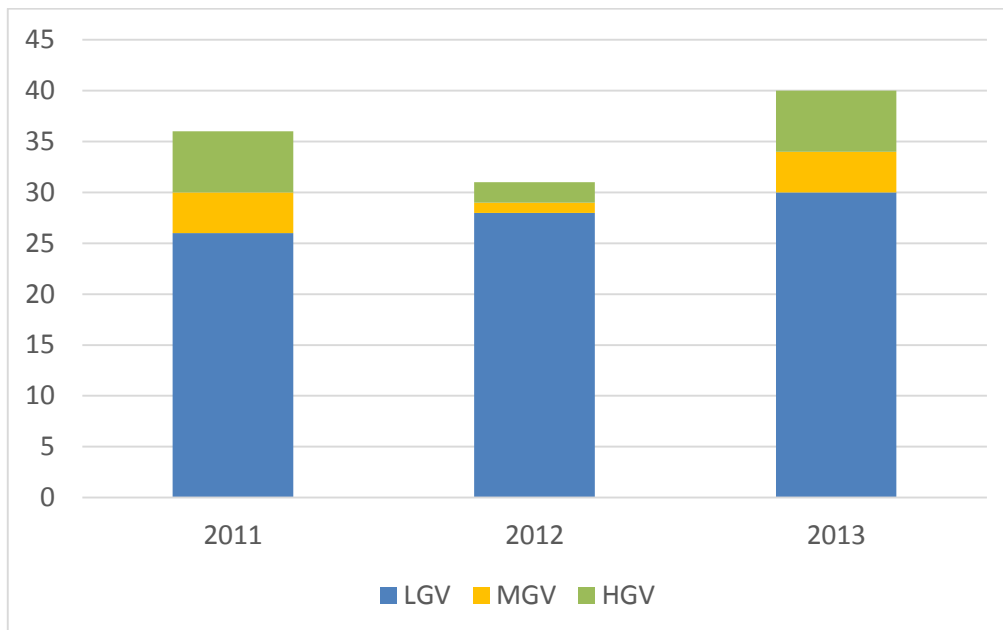


Table C.4 City Centre Collisions Involving a Goods Vehicle and either a Cyclist or Pedestrian by Age Band

All Goods and a Cyclist or Pedestrian Accidents					
Age Band	Slight	Serious	Fatal	Total	Proportion of Total
0 - 5	0	0	0	0	0%
6 - 10	0	0	0	0	0%
11 - 15	0	0	0	0	0%
16 - 20	1	1	0	2	8%
21 - 25	1	0	0	1	4%
26 - 35	5	1	0	6	24%
36 - 45	3	0	1	4	16%
46 - 55	9	1	0	10	40%
56 - 65	1	1	0	2	8%
66 - 75	0	0	0	0	0%
Over 75	0	0	0	0	0%
			Total	25	

Table C.5 City Centre Collisions Involving a Goods Vehicle by Time

Year	06:00-10:00		10:00-15:00		15:00-19:00		19:00-06:00	
	Total	Per Hour	Total	Per Hour	Total	Per Hour	Total	Per Hour
2011	9	2	17	3	5	1	4	0
2012	7	2	12	2	6	2	6	1
2013	5	1	15	3	10	3	9	1

C.6 Collisions Occurring along the Bristol Road

Chapter Three identified Bristol Road as carrying a very high level of goods vehicles in and out of the city centre. Given that this road passes through residential areas and is not segregated (as the A38 Aston Expressway is), an analysis of collisions involving a goods occurring on this route was deemed necessary.

Table C.6 presents the number of collisions involving a goods vehicle occurring on the Bristol Road between 2011 and 2013. The data shows that there were a total of 31 such collisions, of which 27 were classified as slight and four as serious. No fatal collisions occurred. This equates to an annual average of 10 collisions per year. The majority of the goods collisions involved a LGV (87%), with 6% involving a MGV and 6% a HGV, as shown in Figure C.4.

Table C.6 Bristol Road Collisions Involving a Goods Vehicle

Collisions Involving a LGV						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	6	2	0	8	-	25%
2012	8	2	0	10	25%	20%
2013	9	0	0	9	-10%	0%
Collisions Involving a MGV						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	0	0	0	0	-	-
2012	1	0	0	1	-	0%
2013	1	0	0	1	0%	0%
Collisions Involving a HGV						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	1	0	0	1	-	0%
2012	0	0	0	0	-100%	-
2013	1	0	0	1	-	0%
Collisions Involving a Goods Vehicle						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	7	2	0	9	-	22%
2012	9	2	0	11	22%	18%
2013	11	0	0	11	0%	0%

C.7 goes into further detail by considering the number of collisions along the Bristol Road that involved a goods vehicle and either a pedestrian or cyclist. The data shows that there were 11 such collisions between 2011 and 2013, of which all involved a LGV. Two of the collisions were categorised as serious and the remaining nine as slight.

Table C.7 Bristol Road Collisions Involving a Goods Vehicle and either a Pedestrian or Cyclist

Collisions Involving a LGV and either a Pedestrian or Cyclist						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	1	1	0	2	-	50%
2012	4	1	0	5	150%	20%
2013	4	0	0	4	-20%	0%
Collisions Involving a MGV and either a Pedestrian or Cyclist						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	0	0	0	0	-	-
2012	0	0	0	0	-	-
2013	0	0	0	0	-	-
Collisions Involving a HGV and either a Pedestrian or Cyclist						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	0	0	0	0	-	-
2012	0	0	0	0	-	-
2013	0	0	0	0	-	-
Collisions Involving a Goods Vehicle and either a Pedestrian or Cyclist						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	1	1	0	2	-	50%
2012	4	1	0	5	150%	20%
2013	4	0	0	4	-20%	0%

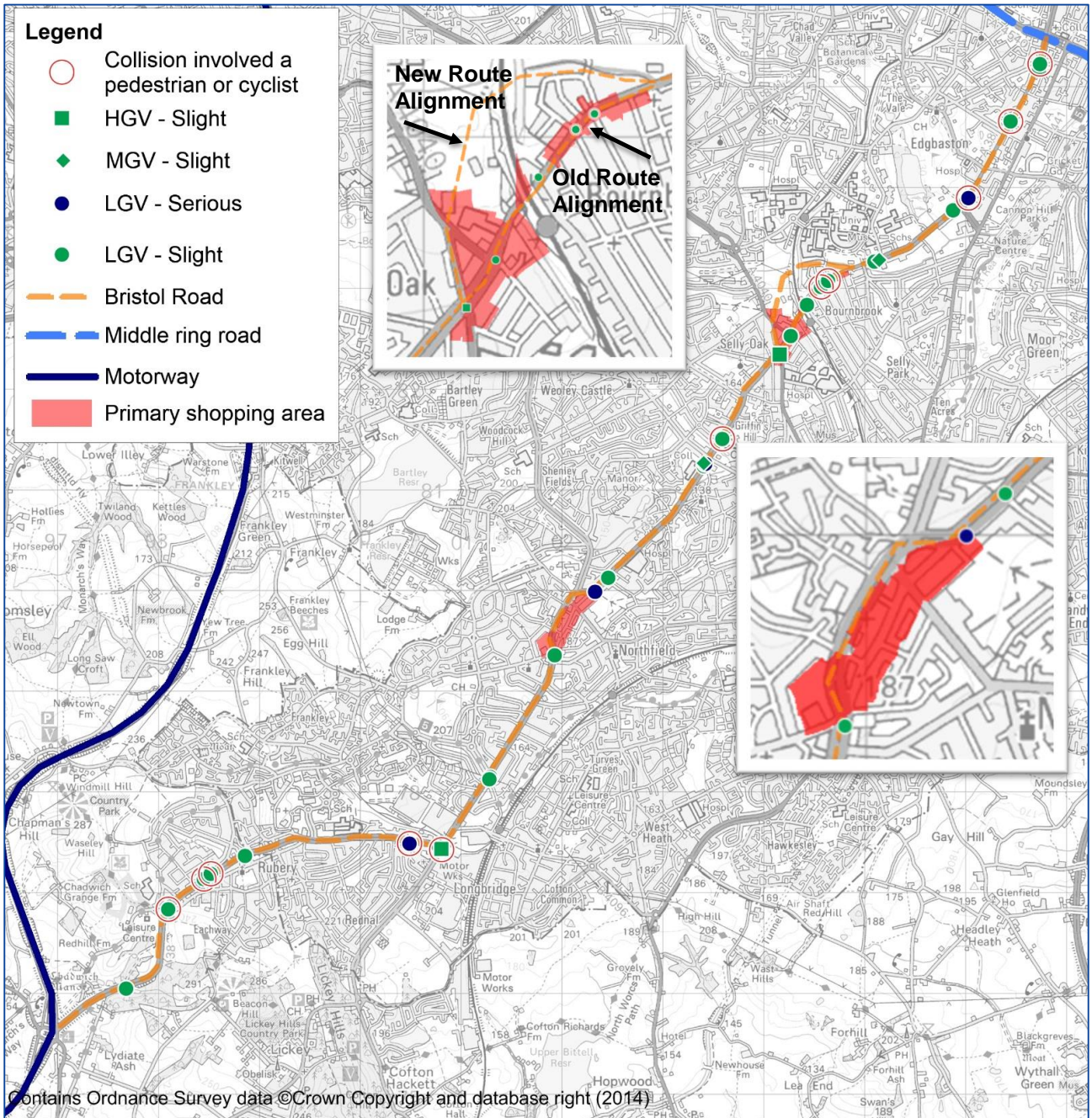
Table C.8 summarises the number of goods vehicle collisions along Bristol Road by time, showing that collisions occur equally throughout the day.

Table C.8 Bristol Road Collisions Involving a Goods Vehicle by Time

Year	06:00-10:00		10:00-15:00		15:00-19:00		19:00-06:00	
	Total	Per Hour	Total	Per Hour	Total	Per Hour	Total	Per Hour
2011	2	1	5	1	1	0	1	0
2012	1	0	6	1	4	1	0	0
2013	2	1	2	0	5	1	2	0

Figure C.4 presents a spatial distribution of collisions involving a goods vehicle along the Bristol Road, with particular focus on the two primary shopping areas along the road – Selly Oak and Northfield. It should be noted that in 2011 the A38 through Selly Oak was realigned away from the train station and primary shopping area.

Figure C.4 Spatial Distribution of Collisions Involving a Goods Vehicle along Bristol Road



C.7 Collisions Occurring in Primary Shopping Areas along Key Freight Routes

Further analysis of goods vehicle collisions occurring in primary shopping areas along each of the high volume freight routes identified in Chapter Three has been undertaken. Tables C.9-C.11 present the results of this in tabular format, whilst Figure C.5 presents this spatially. No fatal collisions involving a goods vehicle occurred in the areas analysed, however one serious collision involving a LGV and a pedestrian occurred on Dudley Road. There were two other collisions involving a pedestrian, both involving a LGV and classified as slight, one in Newtown (A34 Walsall Road) and one on the Dudley Road.

Figure C.5 Spatial Distribution of Collisions Involving a Goods Vehicle along Bristol Road



Table C.9 Primary Shopping Area Collisions Involving a Goods Vehicle

Accidents Involving a LGV						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	8	2	0	10	-	20%
2012	13	1	0	14	40%	7%
2013	2	0	0	2	-86%	0%
Accidents Involving a MGV						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	1	0	0	1	-	0%
2012	0	0	0	0	-100%	-
2013	0	0	0	0	-	-
Accidents Involving a HGV						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	0	0	0	0	-	-
2012	3	0	0	3	-	0%
2013	0	0	0	0	-100%	-
Accidents Involving a Goods Vehicle						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	9	2	0	11	-	18%
2012	16	1	0	17	55%	6%
2013	2	0	0	2	-88%	0%

Table C.10 Primary Shopping Area Collisions Involving a Goods Vehicle and either a Cyclist or Pedestrian

Accidents Involving a LGV and either a Pedestrian or Cyclist						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	3	1	0	4	-	25%
2012	3	1	0	4	0%	25%
2013	1	0	0	1	-75%	0%
Accidents Involving a MGV and either a Pedestrian or Cyclist						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	0	0	0	0	-	-
2012	0	0	0	0	-	-
2013	0	0	0	0	-	-
Accidents Involving a HGV and either a Pedestrian or Cyclist						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	0	0	0	0	-	-
2012	0	0	0	0	-	-
2013	0	0	0	0	-	-
Accidents Involving a Goods Vehicle and either a Pedestrian or Cyclist						
Year	Slight	Serious	Fatal	Total	Change on previous year	KSI Proportion
2011	3	1	0	4	-	25%
2012	3	1	0	4	0%	25%
2013	1	0	0	1	-75%	0%

Table C.11 Primary Shopping Area Accidents Involving a Goods Vehicle by Time

Year	06:00-10:00		10:00-15:00		15:00-19:00		19:00-06:00	
	Total	Per Hour	Total	Per Hour	Total	Per Hour	Total	Per Hour
2011	2	1	6	1	3	1	0	0
2012	6	2	7	1	2	1	1	0
2013	1	0	1	0	0	0	0	0

Appendix D: Detailed One to One Consultation Feedback and Contact Details

This appendix provides details of each of the interviews undertaken throughout the consultation stage of this study, including interviews with:

- Freight Transport Association – Freight Council;
- Freight Transport Association – Sally Gilson;
- Road Haulage Association / Littlepot Distribution;
- Element Energy;
- British Telecom;
- Dairy Crest;
- Sainsburys;
- Big Yellow;
- Birmingham City Council – Heike Schuster James
- Birmingham City Council - Andrew Radford; and
- Birmingham City Council - Green Fleet.

D.1 Freight Transport Association

Project:	BMAP – White Paper Servicing and Logistics Workstream	Compiled by:	Jon Harris
Organisation engaged with:	FTA - West Midlands Freight Council meeting	Contact Name/s:	Sally Gilson
Date of Engagement:	25th June 2014	Type of Engagement:	Presentation

Summary

The main purpose of attending this meeting was to present to Freight Council members on the proposed approach to the BMAP freight workstream, and to better understand the needs of the Freight Council membership as a result of the feedback received at the Green Paper stage. This note should be read in conjunction with the minutes produced by the FTA.

The FTA/Freight Council feedback was instrumental in BCC's decision to focus on this workstream as a key component of the White Paper work, particularly to ensure that 'freight' interests and needs were properly reflected, and that a balanced Strategy emerged which appreciated the contribution that servicing and logistics would make to the Birmingham and wider West Midlands' economy.

A good range of representatives attended and a 10-15 minute presentation was delivered. There was opportunity for Q&A plus one-to-one engagement with individual Freight Council members who pledged to hold further detailed meetings/liaison over the emerging BMAP process.

Key Pointers

Key points emerging from the session included:

- The FTA/Freight Council serves as a good barometer of the acceptability of ideas and concepts, and a representative sample of its members should be engaged with on a one to one basis (now carried out).
- Early appreciation of the 'drivers' for current logistics patterns is essential – the customer base often dictates how and when deliveries should be made, particularly during peak hours. It is recognised that sometimes supply chains can be sub-optimal due to this customer demand, which is often designed to fit around sensitive timing issues (e.g. fresh food needed to prepare sandwiches etc for that day) but also around staffing rosters and timings (e.g. retail, coffee shop opening times etc).
- Linkage with the SME sector is vital given the number and breadth of SME presence in Birmingham and the wider West Midlands.
- Methods from other key UK cities are appreciated (e.g. TfL) but some of the tools used (such as the 4Rs) do need adaptation to the Birmingham context i.e. more use of retime/reroute rather than reduce or remove?
- The freight industry is often seen as the sector that picks up the penalties and costs as a result of other policy decisions.
- The role of behaviour change and forward planning information is important and a good case study will be the effects of the publicity/awareness campaign around the Birmingham Tunnels closures. It is recommended that the Summer 2014 closures (18/7/14 to 1/9/14) are monitored and used as a case study to reflect how forward planning makes a difference within the Birmingham context.

- Freight Council members saw that the need for traffic education and smarter use of the network as a shared challenge and that car owners are key target for the removal of 'unnecessary' traffic off the network – this is the sector that often frustrates reliability and 'Just In Time' deliveries.
- It was noted that consolidation and backfilling/full load policies are only one part of the picture and that use of localised area wide freight cooperation tools could be workable together with the use of Low Emission Zones in tandem with planning policies emerging through the LDF process. Discussions between the Freight Council and Birmingham City Council's planners on the emerging spatial planning process would also be critical.
- Journey time reliability and forward visibility of temporary and permanent changes to the network were seen as important, and the application of management and behavioural tools rather than just physical management of roadspace. It was noted how construction management plans will be needed to help manage the construction phase of major housing, commercial, leisure etc schemes as major projects will often feel 'permanent' to residents/communities, particularly over a 5-10 year horizon. HS2/Curzon Street Quarter will be a key consideration here.
- If there are future changes to the Highways Agency structure and funding then this may make access in/out/around the Birmingham 'box' easier in future. The significant investment programme over the next 5-10 years planned by the HA means that there may be opportunity to harness 'smarter' use of the West Midlands motorway network.
- Provision of lorry parking and sufficient hold back waiting areas will be helpful.
- Use of Section 106/CIL to support lorry parking provision requires investigation – particularly the scope to link this to B8 distribution sites. Already the Matalan section 278 agreement supported lorry parking provision. It was noted that many West Midland distribution parks have not got holdback areas and that reliance on TROs/'double yellow' was insufficient to manage this.
- The issue of real/perceived cost of lorry parking was also a concern and one of the factors why the current coach and lorry park is not optimised is because of the current rates (£15 for 4 hrs - £6.50-£7.50 for shorter stay). **Post-meeting note: A new tariff was introduced in March, with a charge of £5 up to 4hrs, £7.50 for up to 6hrs and £15 for up to 24hrs).**
- Broad support for 'last mile' concept and how this could be applied in Birmingham, It was noted that there is scope to reallocate distribution of freight and servicing movement to and within the city centre.
- The BMAP plan would need to be ambitious, and the use of 'softer' tools was also accepted, particularly around freight action planning with businesses, advice services and smart use of the existing network through technology.
- One of the challenges of the freight sector is that it is always a 'moving feat' and customer demand dictates the timing and the type of vehicles used. Understanding the balance between HGV and 'white van' demands would be essential.
- Development of parking policy measures to give greater clarity on where larger vehicles can wait (overnight) and the impact of the 1989 5 tonne 'gross weight' blanket residential ban need to be understood better as the definition is vague.
- Sector analysis of small, medium and large goods vehicles impacts would also have to be appreciated.
- Overall the methodology for re-looking at defining the freight issues and the segmentation of the solutions was welcomed by the Freight Council
- As a result of the BMAP personation the following members offered to provide one to one support in some form to assist the process:

- Sally Gilson – FTA;
- Philip Spittle – Eddie Stobart;
- Brian Hancox – Speedy Services;
- Alan Jeffrey – BT Fleet;
- Gavin Rawson – Dairy Crest;
- Sharon Mitchell – Sainsbury's;
- Charlie Shiels – Geopost;
- Neil Ross – West Midlands ITA;
- Peter Williamson – FedEx; and
- Dave Rowlands – Wincanton.

D.2 Freight Trade Association – Sally Gilson

Project:	BMAP – White Paper Servicing and Logistics Workstream	Compiled by:	Jon Harris (JH)
Organisation engaged with:	Freight Trade Association	Contact Name/s:	Sally Gilson (SG)
Date of Engagement:	15 th July 2014	Type of Engagement:	Face to face

Summary

This meeting arose as a direct result of the 25/6/14 Freight Council meeting and the need to refine down the FTA's views on certain interventions.

The meeting was also intended to put more detail into the menu of possible measures and also to enlist further participation from FTA members/source additional industry contacts.

Key Pointers

In terms of; potential 'key wins' for FTA members the following were welcomed:

- VMS and provision of 'smart' real time information to assist with retiming and rerouting.
- Development of Green Travel Districts and providing the necessary local knowledge and information about how they function.
- Driver CPC – and building in issues around the 4Rs (Reduce, Retime, Reroute, Remode) within this messaging framework. Would also benefit operators.
- Options for specific tailoring of FTA and trade association courses and campaigns to help drivers plan ahead - i.e. adapting the London 2012 Freight Advice Programme which included bespoke routing and timing information to drivers; this could be embedded within the behavioural measures promoted through a Green Travel District and its advice to organisations on their procurement practices and the way they secure and manage servicing traffic, deliveries and collections.
- Development of 'flexibays' to optimise delivery 'space' on the road network and to stop cars parking in designated loading area. Virtual bays could work but enforcement and pre-booking would need looking at and careful management.
- 'Freight friends' shared private yard and delivery space scheme could also work in terms of shared loading bays and cooperation – note Carlsberg have a collaborative model for deliveries to pubs, restaurants etc.
- Reduction in parking fines – a key operational issue.
- Inability to mix certain products in terms of consolidation - e.g., pharmaceutical, food etc.
- Strategic partnering between the HA and West Midlands authorities is vital in terms of the diversions, timings, night closure notifications etc.

- Advanced information, such as 'Get Ahead of the Games', would be very useful.
- Retail Education Plan to stop 'false ordering' or bad procurement practice might be something that could be rolled out through other professional bodies/trade associations (e.g. FSB/Chamber of Commerce) but joint Freight Action Planning could be endorsed/encouraged by CILT/FTA as a tool and/or promoted by the GTDs

Further engagement opportunities

- SG would support engagement with Birmingham Chamber of Commerce (David Bharier – Chamber of Commerce Policy and Research Officer) – JH has engaged and a presentation was made to the August Chamber meeting. Additionally, the freight questionnaire was issued to members of the Business Transport Group.
- JH would liaise with Federation of Small Businesses – issue of questionnaire.
- SG would send out the BMAP freight questionnaire as an abridged format to 55 members of the Freight Council and others and provide responses.
- SG would chase up any key members of the Freight Council who had offered help in person but had not yet provided feedback.

Appendix E: Best Practice Review – Working Notes

This appendix sets out the working notes on best practice that have informed the menu of measures.

E.1 European Best Practices on Urban Freight Management

This section highlights best practices from around Europe on urban freight management. The section will discuss the broad types of freight management measures and provide some examples of each measure. The types of freight management measures are as follows:

- Regulatory measures;
- Market based measures;
- Land use planning measures;
- Infrastructure measures;
- New technologies; and
- Management and other measures.

Regulatory Measures

Regulatory measures consist of rules and prohibitions, which are supported by control and enforcement. They are governed and managed by local authorities and municipalities. Various types of regulatory measures can be implemented:

- Time based restrictions on freight vehicles;
- Volume or weight restrictions on freight vehicles;
- Emissions based restrictions for freight vehicles, which can include mandatory use of low or zero emissions vehicles for freight;
- The requirement to use third party freight services than own vehicle; and
- Regulation on the loading and unloading of freight vehicles.

Case Study 1- Ljubljana, Slovenia

Ljubljana the capital of Slovenia has a population of 270,000. It has a historic city centre with a strong service and retail based economy. The historic city centre also supports a thriving a tourist industry. Due to the retail and tourist industries, largely situated in the city centre there is a pedestrian only zone in the city centre. Much of the freight deliveries to the city centre are of retail goods for the many shops and food/drink deliveries to the cafes and restaurants. As a result the majority of freight deliveries are undertaken by vehicles owned by wholesalers and suppliers as well as contracted road hauliers. The main purpose of freight management within the city centre is to avoid freight delivery times conflicting with the movements of tourists, shoppers and residents. The following measures are in place to manage the delivery of freight:

- Vehicles exceeding 3.5T cannot access the pedestrian zone at any time and vehicles exceeding 7.5T cannot go beyond the inner ring road during the peak times;
- Access for deliveries into the pedestrian zone is only between 6am and 9.30am to avoid conflicts with shoppers and tourists;
- Any LGV wishing to access the controlled pedestrian zone is required to buy an annual permit; and
- There are fifteen unloading/loading bays available in the city centre outside the pedestrian zone.

Case Study 2 - London, Lorry Control Scheme

There is night time regulation on the London road network for the larger freight vehicles. The regulation mandates that all vehicles over 12T can only use certain exempted roads between the hours of 21:00 and 07:00 (Monday to Friday) and 13:00 Saturday and 07:00 Monday. However, if freight vehicles require the use of prohibited roads during the hours a permit is necessary. The permit is likely to require the use of a longer route. The main objective of this restriction is to ensure that larger freight vehicles avoid residential areas.

Case Study 3 – Prague, Weight Restriction

Prague is the capital and largest city in the Czech Republic. It has a population of approximately 1.3 million people. The city manages the delivery of freight by dividing the city into two regions. The outside zone, approximately 17km², only allows vehicles under 6T. The inside zone, approximately 5km², only allows vehicles under 3.5T. However, the enforcement authority allows users to obtain permits for special activities, including construction. The scheme has been very successful in reducing HGV traffic in the city. Since the scheme introduction (1999), the city has seen an 85% decline in HGV traffic within the central areas.

Market Base or Fiscal Measures

They are measures such as taxes, tolls enforced by governing bodies to change behaviour. As the measures generate negative effects on targeted goods and services i.e. change in external costs.

Case Study 4 – London, Congestion Charge

The London congestion charge was introduced to reduce all congestion within central London, which includes the control of freight vehicles. The controlled zones are controlled by static cameras, which are linked to a central database. The cameras detect the number plates coming into controlled zones and verify by communicating with the central database. There are many methods for paying.

Land Use Planning Measures

These measures relate to interventions that change the use of space. The following are examples of interventions:

- Zoning of activities i.e. retail parks outside of city centres; and
- Land use planning for modal integration e.g. large scale distribution centres outside of city centres to connect with rail, waterways and other modes of transport.

Case Study 5 – River Thames Wharves, London

The Greater London Authority (GLA) conducted a study on the wharves along River Thames. The objective of the study was to determine the wharves which had existing or potential future freight handling capabilities. The wharves, which had been identified by the study are now safeguarded against residential and other developments.

Infrastructure Measures

This type of measure is very closely related to land use planning measures. It includes the development of infrastructure, such as loading/unloading bays for freight vehicles as well as facilities to change modal shift e.g. from road to rail etc.

Case Study 6 - Paris

Paris has implemented a number of measures to manage the delivery of freight within the city. Some examples are as follows:

- The city has safeguarded sites, which have access to the rail network and the River Seine, that have the potential for logistics;
- Paris has established urban logistics spaces in the centre of Paris by renting underground car park space to logistics operators. Paris aims to develop this measure further by using space under new residential and commercial developments;
- The French retailer, Monoprix, is using freight wagons to transport goods from a distribution centre (30km away from the station) to the inner city station Paris Bercy. The retailer is then unloading the freight on to LNG vehicles for 'last mile delivery' to its 90 stores in the city;
- Distripolis, a mail delivery business, is trying to implement the Monoprix model. However, it is considering using the SNCF stations located around the city. For 'last mile delivery' from the station it is considering tri-cycles and electric/hybrid cars for larger deliveries; and
- Paris is considering expanding its tram network to include freight trams for delivery from distribution centres to supermarkets.

Case Study 7 – Regent Street, London

Regent Street is a prominent shopping street in the centre of London. It is home to over 700 small to medium sized businesses and 150 high end retail outlets and as a result requires the delivery of goods on regular basis. The street is within the London congestion charging zone and is heavily congested. Previously the delivery of goods, via road, was uncontrolled and accounted for 35% of traffic during peak hours. A consolidation centre was set up nearby and 21 retailers have signed up since scheme opening. Deliveries are made to consolidation centre and retailers can access the deliveries from the consolidation centre. Since the scheme opening, there has been 80% reduction in lorry traffic on the road, associated with the retailers.

New Technology

New Technology measures relate mainly to make freight transport more energy efficient and environmentally friendly. There are a number of types of vehicle available for a variety of freight vehicles to improve efficiency of freight transport, including:

- Electric;
- Hybrid plug in;
- Hydrogen;
- LNG;
- The use of technology to monitor freight vehicle journeys (journey times, journey lengths etc); and
- Websites to plan freight journeys. TfL implemented this during London 2012.

Management & Other Measures

They are general management measures which are implemented by city authorities and municipalities to manage the delivery of freight.

Case Study 8– Gothenburg

Gothenburg has a population of 500,000 and is the second largest city in Sweden. The city authorities have implemented a mix of regulatory and other innovative measures to manage the delivery of freight within the city. Some of the key measures are as follows:

- Local Freight Network – A regular meeting where key stakeholders within the city's freight community discuss issues and solutions regarding transport within the city. The meeting is held by the city municipality's transport division and attendees include transport & logistics companies, retailers etc. The objective of the network is to make more collaborative transport decisions;
- Regulation of Load Factors – A trial has been conducted, where transport & logistics companies taking part in the trial are required to achieve pre-defined load factors. In return they are able to reduce their journey times by one or more of the following:
 - The permit to use one or more of the conveniently, reserved, located loading/unloading spaces, which are otherwise appreciated by car drivers;
 - The permit to use either bus or high occupancy lanes; and
 - The permit to access streets which are otherwise restricted to freight.
- It was very difficult to prove any changes in load factors, therefore, changes in freight behaviour. Additionally, it was much harder for smaller logistics companies to achieve the pre-defined load factors;
- Lundby Mobility Management Centre – Offices in the Lundby area consolidated their office orders to reduce the number of deliveries made by delivery companies. In return companies were able to use their involvement in the scheme for marketing purposes; and
- Some cities in the city centre have a time window for delivery of freight (7am to 11am) in order to avoid shoppers in the city centre. There is also a restriction on vehicle length (less than 10m).

Case Study 9 – Lyon, France

The Grand Lyon conurbation covers an area of 512km² with a population of around 1.3 million people. It is the second metropolitan area of France after Paris. As an economic centre of activity Lyon is equipped with the 4th busiest airport, 2 high speed train stations, a river port and many national and international companies. Lyon has been building major public transport infrastructure projects for more than 15 years, becoming the 2nd largest French public transport network after Paris, with namely 32 km of underground/subway lines, 39 km of tramlines.

In Lyon two administrative levels, Grand Lyon & Ville de Lyon, are working together to manage the urban traffic and air quality within the city. The following are some of the restrictions and measures are in place to manage the urban freight in the peninsula area of Lyon.

- Access is forbidden for vehicles with a surface area of more than 29m², during the daytime. This restricts a large proportion of freight vehicles.
- In 2007, a low emission zone was created, which restricts the use of older vehicles in the zone. This manages freight from an environmental perspective.
- There are delivery zones within the peninsula area and access for delivery within the zone is limited to 30 minutes.

E.2 Learning from London 2012

During the London 2012 Olympics & Paralympics games the '*Road Freight Management Programme*' was implemented by Transport for London (TfL). The programme was initially devised by the Olympic Delivery Authority (ODA) and was later transferred to TfL in April 2011. The programme was devised to manage road freight to ensure minimal impact on the games as well to allow London to function effectively.

Freight accounts for 17% of the road traffic in London, which increases to 25% in the central areas. Therefore, the interaction between freight traffic, normal background traffic and games traffic needed to be managed properly. To achieve these objectives; freight operators and their customers needed to adapt and change their behaviour. The ODA and TfL developed the '4R' principles, which included reduce, re-time, re-route and re-mode. Implementation of the '4R' principles depended on the location, section, service or commodity involved. The programme disseminated the principles and other information using a number of channels to relevant stakeholders, including workshops, email bulletins, advertising on television, radio and billboards as well as a specifically developed freight website.

- Reduce - The reduction in deliveries was made by making a fewer, but larger, number of deliveries. This was achieved by ensuring higher load factors and stockpiling goods, where possible. Additionally, extra caution was taken by freight companies to ensure deliveries were correct first time around as well as undertaking preventative maintenance measures;
- Re-Timing - measures included making out of deliveries or changing the day for the deliveries;
- Re-Route - measures included changing the route of the freight delivery to avoid busier or Olympics games routes. Other measures included drop orders at warehouse or depot; and
- Re-Mode - This mainly involved walking or cycling the last mile of delivery, where possible.

The success of the '*Freight Management Programme*' during the London 2012 Games is down to a number of measures that were undertaken by TfL and the key stakeholders involved. They are summarised as follows:

- TfL developed a specific freight website, which enabled users to plan the most appropriate freight journey via the website to reduce distribution to the games. The website received over 50,000 unique visitors and the website journey planner was used up to 700 times a day;
- Success of the programme was dependent on TfL communicating effectively with the stakeholders involved. TfL communication regularly and as soon as it became available. They undertook regular meetings to ensure key stakeholders supported the programme;
- Additionally, a freight forum was developed. The forum included more than 50 key stakeholders who worked collaboratively with TfL and each other to resolve issues and propose solutions for the programme;
- A number of regulatory bodies were involved as TfL had to ensure that businesses making changes to their operations were doing so legally. Bodies included Office of the Traffic Commissioners, the Vehicle and Operator Services Agency and London Councils;
- Communication was undertaken via direct engagement with operators and businesses at industry events, over 3,000 door to door visits in the most heavily impacted areas and holding over 200 workshops in London and the rest of the UK; and
- Regular updates were made on the website and emailed to over 8,000 industry contacts.

E.3 Current Freight Management Approach & Initiatives in Birmingham

The purpose of this section is to understand the current approach taken by Birmingham City Council to manage the freight within the city. Birmingham City Council has provided a 'Conditions Manual' dated 01/07/2014. The manual provides a list of conditions related to planning. Below are the conditions, which relate to freight, delivery and servicing.

- Delivery Time Restrictions (COML11) – Certain planning applications will need to demonstrate that they are limiting the delivery and despatching of goods to and from the site. They are to be restricted to safeguard the amenities of occupiers of premises/dwellings in the vicinity;
- Site Delivery Hours (COML23) – Planning applications will need to demonstrate that they are restricting/limiting the delivery of materials to site to safeguard the amenities of occupiers of premises/dwellings in the vicinity;
- Delivery Code of Best Practice (ENVL21) – In order to safeguard the amenities of occupiers of premises/dwellings in the vicinity requires the submission of goods delivery strategy. The code should deal with the management and operation of the delivery process. Items to be included are delivery times and signage, the need to switch of engines in noise sensitive areas and reverse warnings;
- Delivery and Service Area Completion (TRAN13) – This condition states that no part of the development shall be brought into use until the delivery and servicing area has been completed. The area should be fully available for the parking, turning and unloading of delivery and servicing vehicles throughout the life of the development. This is required in the interests of highway safety; and
- Delivery Vehicle Management Scheme (TRAN23) – This condition states that no development shall take place until details of a delivery vehicle management scheme has been submitted to and approved by the local planning authority. This is to prevent vehicles waiting in the public highway and causing disturbance to residential amenity.

As there are no other specific directions or guidance on freight management within the city current and recent planning application or larger developments will be evaluated to understand any scheme specific freight management measures. In particular, the Delivery & Servicing Plans and any Travel Plans will be focussed upon.

The Cube (2005)

The Cube is a mixed use building comprising of car parking facilities, retail, restaurant, residential and boutique hotel. The outline planning permission was granted the 19th August 2005 with the following conditions relating to the management of freight.

- The development should not take place until a management plan for the demolition / construction of the development has been submitted and approved. The plan should include hours of demolition as well as lorry routing plans; and
- Before the first use of the building, a management plan for servicing the development, including the hours of deliveries and collections shall be submitted to and approved in writing by the local planning authority. The servicing plan should be in line with approved management plan and is in the interests of residential amenity.

Hurst Street, Bromsgrove Street, Essex Street and Inge Street (2003)

A planning application was made to erect a number of buildings to provide residential units as well as for the use of A1 (Retail), A2 (Financial & Professional Services) and A3 (Food & Drink). The planning application was refused for a number of reasons including one related to delivery and servicing of the building. It is as follows:

- No deliveries shall be taken at or despatched from the proposed commercial units outside of the hours 08:00-18:00 (Mondays to Fridays); 08:00 – 13:00 (Saturdays) nor at any time during Sundays, Bank Holidays or Public Holidays. This is required in order to safeguard the amenities of adjoining residents.

Appendix F: Scoring and Menu of Measures

This appendix sets out the scoring criteria used for the menu of measures. This was used to derive the RAG scores set out in Chapter Five.

The menu of measures, in the form of an electronic appendix, also accompanies this scoring information.

F.1 Scoring Criteria

As discussed in Chapter Five, a set of criteria were used to score each of the measures. Each criteria was giving a scoring range and a weighting, which was used to calculate a final score for the measure. The formula below was used to achieve the final score for each measure:

$$\begin{aligned} & (Total\ industry\ coverage\ score \times 10\% \textit{ weighting}) + (Total\ deliverability\ score \times 50\% \textit{ weighting}) \\ & + (Total\ SUMP\ ojective\ score \times 40\% \textit{ weighting}) = Final\ score \end{aligned}$$

Category	Criteria	Details	Scoring	Criteria score counts towards measures' final score?	Weighting
Four Rs	Reducing deliveries	This may involve smarter loads (i.e. not running empty delivery vehicles wherever possible) and the potential for consolidation.	<ul style="list-style-type: none"> No impact / minimal impact Medium Large 	No	N/A
	Re-moding deliveries	This would cover consolidation and other tools to reduce conventional freight into the SUMP area. This may also include options for rail freight and other similar alternatives			
	Re-timing deliveries	This may consider the scope for changing the hours deliveries are made, or the opportunity to 'flatten' delivery profiles, by stretching the time over which deliveries are made.			
	Re-routeing deliveries	This involves delivery vehicles making better use of live traffic information.			
Industry Coverage	Major retailers / shopping centres	This sections considers the impact each measure against the listed freight users.	<ul style="list-style-type: none"> -2: Large negative -1: Medium negative 0: No impact / minimal impact +1: Medium positive +2: Large positive 	Yes	Industry coverage as a whole: 10%
	SME retailers / traders				
	Manufacturing				
	Office service sector				
	Hotel and leisure				
	Major events				
	.com online deliveries				
	Construction logistics				
Deliverability	Can it work here in Birmingham and is it relevant?	This is scored as follows based on the professional evaluation of the workstream / local authority officer team. At this stage it simply assesses whether it is an intervention that at a professional level the local authority would be keen to pursue and have an appetite to see work. Political acceptance has not been assessed as part of this process due to the shifting nature of the political scene against the overall SUMP timeframe through to 2024. Where the local authority is not the direct delivery agent the level of influence the LA has to achieve change should be scored:	<ul style="list-style-type: none"> -2: Not suitable for consideration (reasons given in commentary column - e.g. city is too small to support the measure etc) -1: Consideration possible in longer term 0: Worthy of consideration for Birmingham (no reason to exclude) +1: On basis of evidence (national /best practice) there is a strong fit for Birmingham +2: On basis of evidence (as above plus local) there is a strong fit for Birmingham 	Yes	Deliverability as a whole: 50%
	Can it be delivered in Birmingham using a technically sound approach?	This criterion looks forward to assess whether the intervention can physically be provided within the city.	<ul style="list-style-type: none"> -2: No / very limited ability to physically deliver this intervention (Cost is NOT a determinant at this point) -1: Consideration possible in longer term but requires other strategic interventions to be put in place (legislative change, technological improvements) 0: Ability to deliver the intervention technically +1: On basis of national evidence, strong fit in terms of technical deliverability +2: On basis of national and local evidence, strong fit in terms of technical deliverability 		
	Can it be delivered in Birmingham using the skills of Birmingham City Council and other stakeholders?	This criteria looks forward to assess whether the intervention can organisationally be provided within the city.	<ul style="list-style-type: none"> -2: No / very limited ability to deliver this intervention based on the local authority and its partners (Cost is NOT a determinant at this point) -1: Consideration possible in longer term but requires other strategic interventions to be put in place (organisation change, revised partnership arrangements) 0: Ability to deliver the intervention taking account of any key stakeholder / organisational / third party barriers +1: On basis of national evidence, strong fit in terms of organisational deliverability +2; On basis of national and local evidence, strong fit in terms of organisational deliverability 		
	Can it be delivered in Birmingham and meet customer needs?	The criteria look at the other side to technical delivery and asks whether the freight sector would accept the measures. Whilst interventions can physically be provided, if the industry acceptability level for these types of measures is not understood, not seen as culturally relevant, then this should temper the ranking of the intervention. Note that this score	<ul style="list-style-type: none"> -2: Strong freight sector resistance and negativity likely -1: May be some change in view in the longer term but not likely within SUMP timeframe (2014-2019) 0: Industry view likely to be neutral 		

		should NOT reflect short term political issues / concerns as compared to the SUMP delivery timeframes these are much more immediate and localised. Assess the suitability of the intervention on how the customer will respond and is key in terms of the stakeholder workshop.	<ul style="list-style-type: none"> +1: Healthy level of 'support' in principle from the freight sector based on sound awareness of issue nationally (e.g. climate change, carbon, vehicle technology etc) but not tested locally +2: Healthy level of support from the freight sector based on local awareness / behaviour and past / current trends in attitude 		
	Can it be delivered in Birmingham with an acceptable impact on local communities?	This criteria relates to the larger economic good derived from easy freight movement and the impact it may have on communities.	<ul style="list-style-type: none"> -2: Severe impact on ability to use local centres as 'social places' -1: Makes local centres more difficult to negotiate 0: No material impact +1: Measure provides some improvement to the 'sense of place' +2: Measure provides a significant benefit for local communities and people with disabilities 		
	Is the proposal financially sustainable?	The criteria assesses the overall affordability of the intervention, although the ability of the measure to be integrated within an overall package should be accommodated in the scoring. At this point the likely split between revenue and capital should not be a reason for a low score. Needs measures that reflect major national investment programmes - these will score higher (e.g. plugged in places).	<ul style="list-style-type: none"> -2: Cost prohibits consideration of measure -1: Significant cost likely to prohibit measure unless heavy external funding and / or cost reduction through package approach 0: Affordable +1: Relatively cheap measure capable of replication at economies of scale +2: Very cheap measure 		
	Benefit to Cost Ratio?	This criteria looks at the potential BCR levels.	<ul style="list-style-type: none"> -2: BCR < 1 (low) 0: BCR 1 - 5 (medium) +2: BCR > 5 (high) 		
Review against SUMP/BUMP objectives	Economy	Not all interventions will address key SUMP objectives in the same way. Objectives will by definition tend to support different flavours of intervention and therefore a score of 1 – 5 has been applied to each intervention in the light of its potential impact on each the SUMP goals.	<ul style="list-style-type: none"> 0: Intervention will have a negative impact on the strategic SUMP goals (e.g. scheme may increase car commuting) 1: Intervention will have a limited / neutral impact on the strategic SUMP goals (e.g. new link road that increases vehicle trips but takes vehicles away from a local centre) 2: Intervention will have some positive impact on the SUMP goals but will be longer term (2019+) 3: Intervention will have some positive impact on the SUMP goals in the medium term (to 2019) 4: Intervention will have a highly positive impact on SUMP goals (short / medium term) 5: Intervention will have a highly positive impact on SUMP goals (in short, medium and longer term) 	Yes	Review against SUMP/BUMP objectives as a whole 40%
	Carbon and emissions				
	Safety and health				
	Quality of life				
	Equality				

Appendix G: Monitoring of Package

This appendix briefly sets out the information provided to Package 8 (Monitoring). This information was provided by email.

From: Clark, Andrew [mailto:Andrew.Clark@atkinsglobal.com]
Sent: 13 August 2014 09:30
To: Hurst, Liz
Cc: chris@philjonesassociates.co.uk; jon@harrisethical.co.uk
Subject: RE: BMAP Monitoring Strategy

Hi Liz,

This is looking fine.

A few additional ideas from me:

- Regarding consolidation centres close to the city centre, as well as looking at the reduction in delivery movements within the city centre, another measure of success is the level of uptake – but only if it is a voluntary scheme rather than a mandatory one. I suggest we'd initially be looking at a voluntary scheme but potentially for new build sites in the city centre, use of the consolidation centre could be made compulsory, as part of the planning process. The measure of success for the neighbourhood consolidation centres (use of a vacant shop, etc) could similarly be based on uptake and reduction in delivery movements in the surrounding area.
- Regarding the increase in rail freight – our specific measure is to consider moving freight into the city centre stations – be it New Street or the new Curzon Street. Hence the measure of success will be as simple as saying whether this has actually happened or not. Given that we are dealing with passenger stations rather than freight terminals, we would expect light goods only to be moved in this way (cages etc). Note that one of our consolidation centres may be at or close to Landor Street, where Freightliner already has a facility, so there could be some synergies there.
- We have included some analysis of accidents in our reporting. As a big part of our strategy is about getting heavy vehicles onto appropriate routes (i.e. the strategic routes), we should probably look at some sort of monitoring of accident rates.
- To get a real feel for how the industry has responded to the freight changes introduced for BMAP, I'd suggest we want some form of consultation with a selection of logistics firms, along similar lines to the one to ones we have done for this project. We could ask targeted questions on the extent to which routings have actually been adjusted, and whether the consolidation approach is allowing for savings in the supply chain.
- I won't steal Chris' thunder, but regarding GTZs, we'd be looking at measuring most of the things on your list (plus the suggestions by Jon) but on a more local scale. Hence the impact may be far more tangible at a GTZ level rather than city wide.

Thanks,

Andy

Andrew Clark
Senior Transport Planner, Highways & Transportation

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From: Jon Harris [mailto:jon@harrisethical.co.uk]
Sent: 12 August 2014 17:55
To: Hurst, Liz
Cc: chris@philjonesassociates.co.uk; Clark, Andrew
Subject: RE: BMAP Monitoring Strategy

Hi Liz

See below

Any ideas Chris/ Andy to add to this

Kind Regards

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From: Hurst, Liz [mailto:liz.hurst@mottmac.com]
Sent: 12 August 2014 16:42
To: jon@harrisethical.co.uk
Subject: BMAP Monitoring Strategy

Jon

We are looking at some monitoring of Freight within the BMAP monitoring Strategy. Below are some of our ideas, please could you let me have your views of these and if we have missed anything that your package will recommend that you believe should be monitored as part of the programme.

Scheme	Target/Aspiration	Data	Alternate data
Strategic Freight Network	Journey time reliability	Traffic Master data or equivalent	UTC data or data from logistics companies.
Sustainable Freight	Reduction in road freight	Traffic count data	UTC data
	Increase in rail and water freight	National rail or British waterways?	logistics companies
Consolidation centres	reduction in freight in City Centre?	logistics company data/consolidation data	cordon surveys of vehicle numbers into the city centre

Also if you can think of any clever ways we can suggest monitoring the changes in freight your suggestions would be welcome.

In addition to the above I would add

- Retiming profile – derived from individual logistics companies data and roadside intelligence
- Reduction in HGV composition – derived from classified counts
- Journey time reliability – derived from real time VMS/sensor information that shows the % of HGVs that are not stop-starting en route on principal arteries
- Consolidation of orders/deliveries – carried out by Freight Action Plans which will be part of major organisation travel plans and be a prerequisite of the GTZ tool. This will show the numbers of freight movements saved through efficient collaborative planning within and across organisations and reduced numbers of freight movements as a result
- Smarter use of existing networks – measured by redistribution of HGV/LGV numbers along the key arteries

Happy to talk through if anything isn't clear

Many thanks

Liz Hurst

Senior Transport Planner



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This Report Has Been Prepared by the Birmingham Connected Technical Study Group



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