



CORPORATE FINANCE

# Economic impacts of CGMA redevelopment options

Key economic issues including transport costs

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ADVISORY

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# Introduction

- This report presents the findings and considerations of KPMG's Economic Impact Assessment (EIA) for the CGMA. This report complements the financial analysis of the Outline Business Case by evaluating the economic impact of the major options. The options evaluated from an economic perspective are:

<b>Option 2b): 'do minimum'</b>	<ul style="list-style-type: none"> <li>• Continue with current expenditure</li> <li>• Sale of the flower market and fruit and vegetable market without reinvestment</li> </ul>
<b>Option 4c): 'redevelop'</b>	<ul style="list-style-type: none"> <li>• Sell the Flower Market site and other surplus land (site B)</li> <li>• Utilise proceeds to redevelop core market including chill chain</li> </ul>
<b>Option 5: 'relocate'</b>	<ul style="list-style-type: none"> <li>• Sale of the flower market and fruit and vegetable market</li> <li>• Utilise proceeds to relocate the market to an alternative site within the M25</li> </ul>

- Secondly we explore the wider economic issues related to the market. These are matters such as the diversity of supply, the risk of market failure, human capital and the impact on SMEs. Whilst it is difficult to produce an exact economic price on the impact of these issues, we know that they are important and so we both rank them and suggest, via a red, amber of green indicator whether they have a negative, potentially negative or positive impact in relation to the three options. It should be noted that whilst there is some overlap between some of the issues, each issue does stand on its own as an important economic concept to be evaluated and reviewed
- Our data sources are indicated under each table or at the end of the sections. The costs are calculated as 37 years NPV, based on a development or sell-off period of 7 years and 30 years operation, as in the Outline Business Case

- **Terms of Reference:** This report is provided under an engagement letter dated 12 December 2007 as amended by a side letter dated 13 May 2008. It constitutes the second stage of the economic impact work. In the first stage we attempted to analyse the direct and indirect economic impact of the options (using standard economic impact methodologies). However without a better idea of the alternative development options, it was felt that any numerical analysis, other than around transport costs, would be spurious, based on many open-ended assumptions. Therefore, in this stage of the analysis, we concentrate on the transport costs and developing the more pertinent non-quantifiable arguments

- The approach taken in this phase of the work has been to explore and identify the key economic issues, quantify those that we can and rank the others. The issues fall into two main categories, the first of which is measurable and the second more conceptual
- Firstly we explore the transport issues, evaluating the transport cost of options 2b) and 5 in relation to 4c). In other words we treat 4c) as the base case in this exercise and calculate the extra miles that would be travelled in the cases of 2b) and 5. On the basis of these extra miles, we then estimate the direct vehicle costs (fuel, tyres, maintenance and repairs), labour costs and then the external costs (environmental, congestion etc.)



# Disclaimer

This report is provided on the basis that it is for the information of the CGMA only and that it will not be copied or disclosed to any third party or otherwise quoted or referred to, in whole or in part, without our prior written agreement. In the event that we consent to its disclosure, KPMG LLP wish to emphasise that the work it carried out for CGMA was performed to meet specific terms of reference agreed with them, and that there were particular features determined for the purposes of the engagement and the needs of CGMA at the time. The report should not therefore be regarded as suitable for use by any other person or for any other purpose. Should any party other than CGMA choose to rely on the report it does so at its own risk. KPMG LLP will accordingly accept no responsibility or liability in respect of it to persons other than the addressees of the report.

The analysis used by KPMG is substantially based on assumptions. The assumptions and information used in developing the economic impact assessment have been primarily sourced from CGMA, Defra, the tenant survey or third parties. We have not, as part of this quantitative work or the non quantifiable work, independently verified data sourced from other evidence and our use of it should not be taken as endorsing its accuracy and validity.

We would also emphasise that the realisation of the potential economic impacts depend on the continuing validity of the assumptions on which they are based. These assumptions need to be kept under review as circumstances change. We accept no responsibility for the realisation of the economic impact outcomes. Actual results are likely to be different from those shown here because events and circumstances frequently do not occur as expected and the differences may be material.

Studies of this nature will typically produce a wide range of outputs rather than a single value. In presenting these numbers we produce a range of values based on a 25% increase or decrease in the assumptions stated. These output ranges are intended to highlight a range of figures that indicate the potential variability of the outputs, but the actual results could still be higher or lower than these. Some of the assumptions may be tested further during the Tenants Business Analysis to be undertaken by CGMA in Summer 2008.



# Transport costs – the issue

The issue	
<ul style="list-style-type: none"> <li>• Transport costs are generated through three types of journey:               <ol style="list-style-type: none"> <li>1. suppliers transporting produce to the trading units on the market</li> <li>2. wholesale distributors purchasing produce from wholesalers and transporting this produce to their units</li> <li>3. deliveries of wholesale produce or flowers to the end customers</li> </ol> </li> <li>• In the current situation and option 4c), there are minimal type 2 transport costs since all businesses are co-located</li> <li>• In addition to the direct running costs (including cost of tyres, repairs, fuel etc), there are a number of negative externalities that arise from the transport associated with running wholesale and flower businesses. These costs increase with the number of miles travelled</li> <li>• In addition to the direct vehicle costs, changes to journey times would result in changes to labour costs</li> <li>• Relocating the market or closing it down would also incur additional costs in the form of increased mileage travelled for employees to reach their trading site. These have not been included in the calculations but should be noted as they have the potential to increase the transport costs further. In addition the site is used as a coach park in the day, using the lorry delivery space, which is an efficient use of this asset. The effects of this lost income and the negative externalities arising from any additional mileage travelled by the coaches to reach new parking sites have not been included in the calculations</li> </ul>	

Externalities	
<ul style="list-style-type: none"> <li>• Emissions: the types of vehicle used for the majority of deliveries emit significant amounts of CO2 which contribute to increasing green house gases in the atmosphere and ultimately, global warming. The majority of goods are brought into the market in HGVs and deliveries to purchasers are made by van. The flower market has introduced 'carbon-low' vehicles which are electric vans and are used for some customer deliveries, however their use is not widespread across the market. These vans emit far less CO2 and are not subject to the congestion charge. Currently, these 'carbon-low' vehicles produce less externalities and are cheaper to run. It is hoped that the use of these vehicles for delivery can be spread throughout the flower market and eventually the wholesale market also</li> <li>• Noise: Significant noise is generated through all transport to and from the site</li> <li>• Congestion: There are externalities associated with congestion in the form of increased traffic in and out of London. It is possible to place a value on the cost of additional congestion created (see transport assumptions)</li> <li>• Accidents: The DfT have calculated the accident rate for vehicles travelling on urban roads at night, at peak times and at off-peak times. Three categories of accident are looked at; fatal, serious and slight. In each case, the accident rate is greatest in the night-time, when the majority of food/flower deliveries are made to and from the market. It is possible to place a value on the cost of preventing these accidents and these values, taken from the DfT have been used to look at the total cost to the government of accident prevention in each of the three scenarios</li> </ul>	



# Transport costs –assumptions

## Travel costs

- We have calculated the additional direct transport costs, negative externalities; noise, accidents, congestion and carbon emissions associated with option 2b) and 5. (the difference between the estimated current mileages and those that would be travelled in the alternative scenarios). We have based these calculations on three types of mileage:
  - Mileage travelled to deliver produce/flowers to wholesaler locations
  - Mileage incurred by wholesalers delivering to wholesaler distributors (or distributors travelling to purchase wholesale from suppliers)
  - Mileage incurred in delivering fruit and vegetables and flowers to purchasers to an assumed mid-point at Charing Cross

### Vehicle mix:

- For the three types of journey, we have used data from the MVA survey of vehicle movements.

### Assumed daily vehicle count by mileage type

Estimated vehicle movements	Deliveries to NCGM	Collecting from NCGM	Delivering and Collecting	Total
Cars	58	215	14	287
Light Goods Vehicles	392	846	57	1,295
Rigid 2 Axles	383	1,250	57	1,690
Rigid 3 Axles	33	39	-	72
Articulated 3 Axles	342	117	7	466
Rigid 4 Axles	25	-	-	25
Articulated 4 Axles or more	242	13	-	255
Not classified	25	20	-	45

Source: MVA survey pro-rata'd on the basis of the automatic vehicle count

## Supplies

- The proportion of produce/flowers produced domestically/imported and purchased by wholesalers in the UK is assumed to be:
  - imported produce: we have assumed 50% of imports are flown in and are transported from Heathrow and 50% are shipped in and transported from Harwich
  - domestic produce: we have assumed vegetables have been grown in East Anglia and flowers/fruit in Kent with a mid-point of those areas assumed

Supplies	Domestic	Imported
Fruit	13.6%	86.4%
Vegetables	50.7%	49.3%
Flowers	43.1%	56.9%

Source: DEFRA

## Range of costs

- We have assumed a 'high' cost scenario based on an increased total additional mileage scaled up by 25% from the base
- We have assumed a 'low' cost scenario based on an increased total additional mileage scaled down by 25% from the base



# Transport costs – assumptions continued

## Externalities

- We have used the congestion, accident prevention and noise costs generated by transport per kilometre from the DfT over peak, off-peak and night-time periods (apportioned by the number of hours the market covers in each period)
- We have assumed the environment is urban (as opposed to rural or motorway) in all cases for calculations
- To calculate the cost of carbon emissions, we have used the DEFRA shadow price of carbon over the NPV period. It has not been inflated over the NPV period
- It should be noted that the fuel duty (part of direct transport costs), does include an element for carbon/pollution externalities. It could be argued that there is an element of double counting,

### Shadow price of Carbon with GDP deflator £/tCO<sub>2</sub>e

2007	2008	2009	2010	.....2044
25.5	26.0	26.5	27.0	+2% pa

Source: DEFRA: *The Social Cost Of Carbon And The Shadow Price Of Carbon: What They Are, And How To Use Them In Economic Appraisal In The UK*

### Cost per urban mile at 2005 prices £

Type of vehicle	Congestion	Noise	Accidents
Car/LGV	0.31	0.00	0.02
2/3 Axles lorry	0.76	0.02	0.10
4 axle lorry	1.27	0.03	0.08

### Cost per motorway mile at 2005 prices £ motorway

Type of vehicle	Congestion	Noise	Accidents
Car/LGV	0.05	0.00	0.01
2/3 Axles lorry	0.09	0.01	0.04
4 axle lorry	0.12	0.01	0.04

Source: DEFRA, *based on Food Miles report*

## Assumptions based on the specific options

### Option 4c)

- For the purposes of our analysis, this is the base case. We do not calculate any transport costs associated with this option and the transport costs associated with options 2b) and 5 are the marginal (or additional) costs

### Option 2b)

- We assume the following (phased) eventual dispersal of trade following closing down of the site:
  - 50% of businesses will move to an area in Greater London (we have assumed an arbitrary location at Park Royal for mileage calculations), but they will not be consolidated
  - 25% of businesses will move to an area on the M25 (we have assumed Dartford for calculations)
  - 25% of businesses will cease operations and their trade will be consolidated by either Brake Brothers (Park Royal) or 3663 (Barking), being examples of vertically integrated wholesale distributors

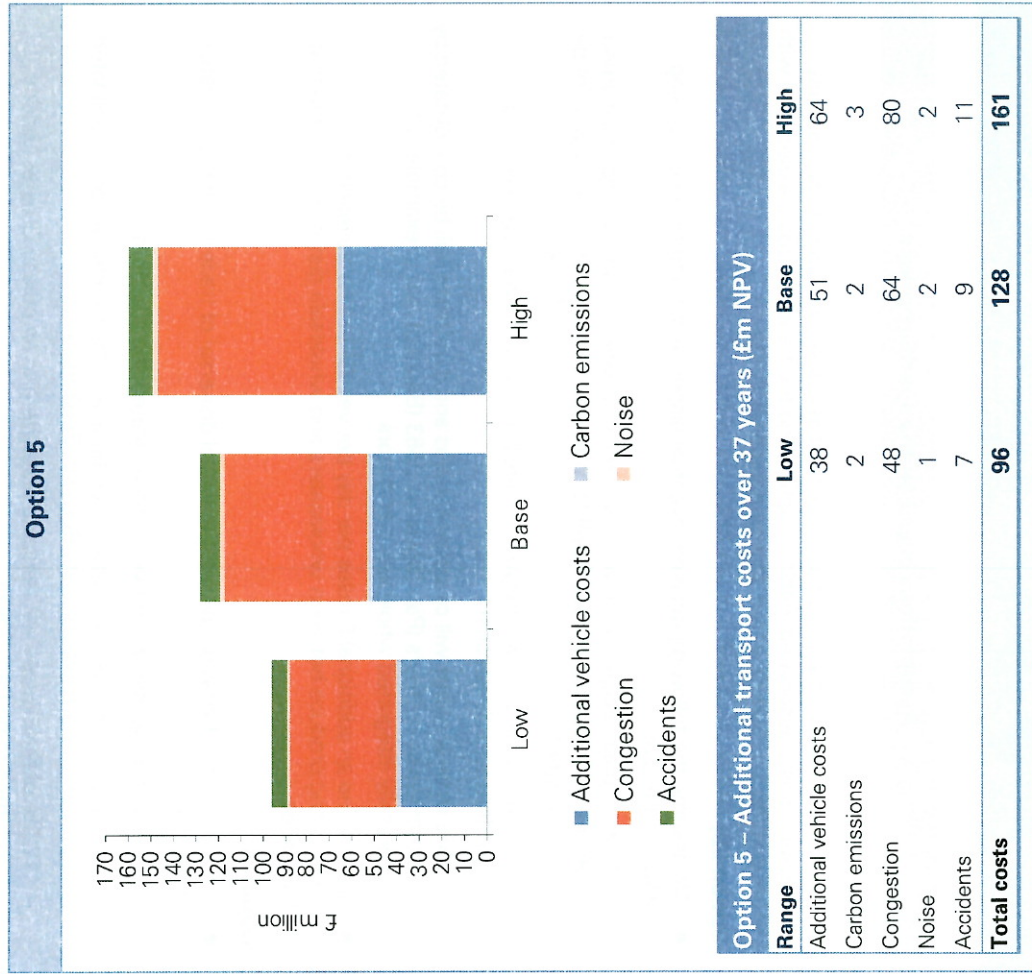
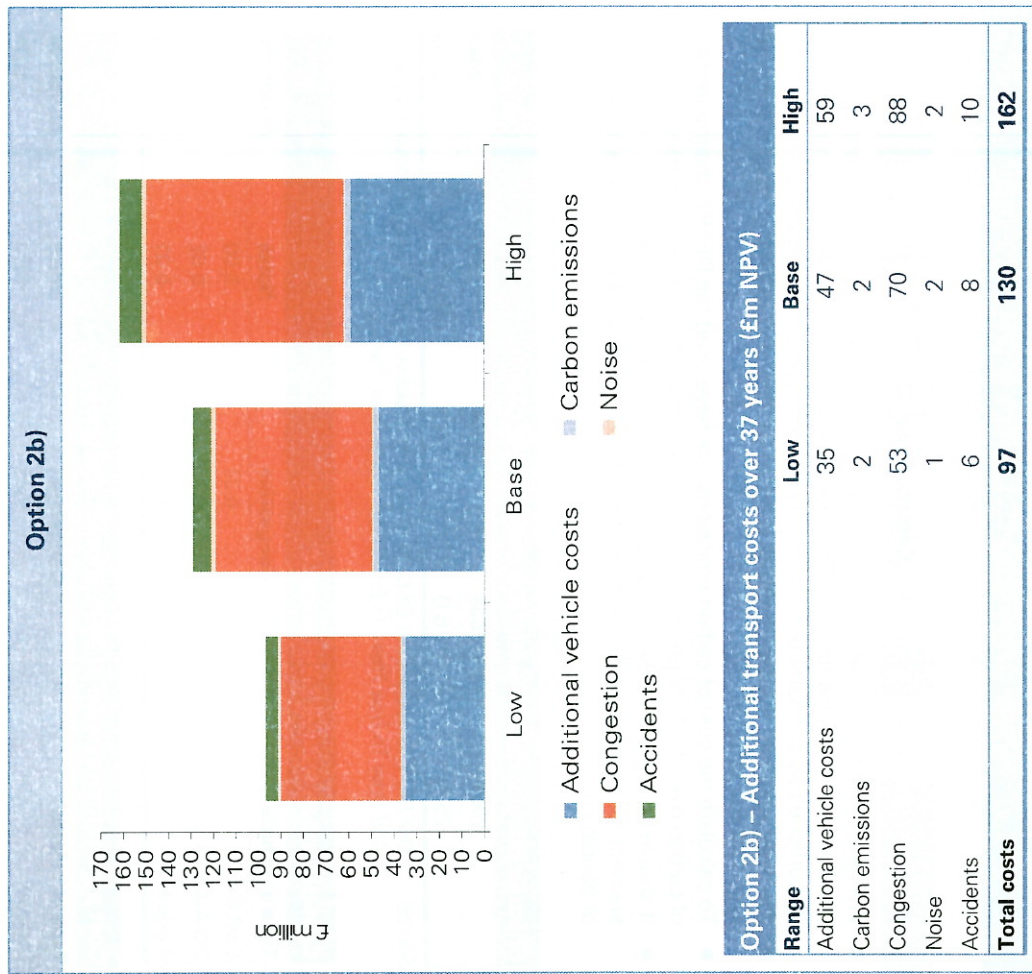
- We assume an additional 5 miles per day per vehicle will be travelled in transporting produce between wholesalers and wholesale distributors, in the first two cases

### Option 5

- We assume the following (phased) eventual dispersal of trade following relocation of the site:
  - 75% of businesses will move to the relocated site (Dartford)
  - 12.5% of businesses will cease operations and their trade will be consolidated by either Brake Brothers (Park Royal) or 3663 (Barking)
  - 12.5% of businesses will re-locate elsewhere to an area in Greater London (assumed to be Park Royal)
- It is assumed that additional mileage between wholesalers and wholesale distributors (type ii above) is only relevant for the 12.5% who re-locate in Greater London. The 75% who move will be co-located on site and for the other 12.5%, Brake Bros and 3663 already have a vertically integrated supply chain, preparing food for distribution on their sites



# Transport costs – additional vehicle and externalities costs



Source: DEFRA, DfT and KPMG Analysis



# Transport costs – additional labour costs and conclusions

Labour costs			Conclusion
Additional labour costs over 37 years (£m NPV)			
Option	Ranges	Additional Driver Costs	
2b)	Low	£36m	<ul style="list-style-type: none"> <li>The tables on the previous page show the relative additional transport costs resulting from choosing option 2b) or 5 as the alternative to 4c). 4c) is more attractive because of the proximity to the assumed centre of end user supply at Charing Cross and the relative impact of additional transit/light van miles on the other options which may be tested further as part of the Tenant Business Analysis to be undertaken by CGMA in the summer.</li> </ul>
	Med	<b>£49m</b>	
	High	£61m	
5	Low	£45m	<ul style="list-style-type: none"> <li>In addition to the costs of vehicles (direct and externalities), we should also consider the impact on the labour force. Extra journeys mean extra hours of driving and based on the number of additional miles travelled under the options and the mix of urban and motorway driving we can estimate the additional labour costs (using the average wage for drivers in the South East from the New Earning Survey)</li> <li>The following tables summarises the qualitative impact of transport</li> </ul>
	Med	<b>£60m</b>	
	High	£75m	
Source: National Statistics and KPMG Analysis			

Option	Applicability	Impact
2b)	<ul style="list-style-type: none"> <li>If the market is closed down, trade will be significantly dispersed and the mileage and costs associated with smaller vehicles (both direct and externalities) will increase substantially</li> </ul>	●
4c)	<ul style="list-style-type: none"> <li>Redevelopment of the market will have little effect on transport costs. Wholesalers and wholesale distributors will still be able to purchase goods and services from each other on site and deliveries will still cover the same distances. The move towards using carbon efficient vehicles (as per the flower market currently) could also contribute to lowering carbon emissions</li> </ul>	●
5	<ul style="list-style-type: none"> <li>Relocating the market will cause some dispersal of trade, but it is assumed the majority of wholesalers and wholesale distributors (75%) will move to the new site. Additional transport costs will be incurred through mileage associated with van deliveries into London</li> </ul>	●



# Diversity of supply

The issue		The evidence	
<ul style="list-style-type: none"> <li>Diversity of supply is an important economic argument that is sometimes used to justify market intervention, in the absence of which consumers or other interested parties are disadvantaged</li> <li>Diverse suppliers bring fresh ideas, offer innovative products and processes, and contribute to the economic strength of the communities in which they operate</li> <li>For London as a whole, the supply of restaurants with fresh, varied and innovative produce, helping to provide a high quality food service, could be seen as an important part of London's attraction as a capital</li> <li>If the market were to close, the choice of suppliers available who can easily deliver to Central London may be considerably reduced as the main alternative would be to re-locate much further from the centre. The effect may be to decrease choice</li> </ul>		<ul style="list-style-type: none"> <li>New Covent Garden Market is the largest wholesale market providing fruit and vegetables in London. Nearly 40% of fruit and vegetable going into London's catering trade is supplied by the market<sup>(1)</sup></li> <li>Approximately 245 different companies trade at the market and over 350 types of fruit and vegetable are available for purchase<sup>(1)</sup>. Many suppliers offer similar produce and this helps to ensure that the prices are competitive</li> <li>Londoners spend 35% more on meals in restaurants and cafes and 26% more on foodservice overall than the national average. Overall, the foodservice market in London is valued at almost £6.0 billion. Niche markets such as ethical, gourmet and ethnic products are seen as important drivers for the London restaurant sector<sup>(2)</sup>. Anecdotal evidence suggests that many foodservice chefs are interested in sourcing local products, not only to meet consumer demand, but also as a means of differentiating their product offering from other providers<sup>(2)</sup>. New Covent Garden Market offers a huge diversity of produce available to purchasers and specialist food preparation services tailored to individual chef requirements</li> <li>Increasing consumer awareness and preference for local / sustainable food is a key driver that provides opportunities for the wholesale markets. Research<sup>(3)</sup> suggests that 70% of consumers want to buy local food and 49% want to buy more than they do at the moment. Also Reuters reported last year that sales of organic food are rising strongly in Britain despite a downturn in overall consumer spending and that locally produced supplies are struggling to keep pace with demand. Therefore markets like Covent Garden may be an important part of ensuring supply can meet demand both from organic and locally produced food as well as imported products<sup>(4)</sup></li> </ul>	
Option		Applicability	
2b)		<ul style="list-style-type: none"> <li>If the market was to close and the traders have to disperse, we have assumed that some would close and consequently the supply of diverse and unusual products would be severely disrupted</li> </ul>	
4c)		<ul style="list-style-type: none"> <li>Re-developing the market will increase the availability of chill chain and so should maintain or enhance the diversity of supply and importantly, address the key health and safety and food hygiene concerns</li> </ul>	
5		<ul style="list-style-type: none"> <li>88%<sup>(5)</sup> of market traders surveyed said that it was very important or important that they remained at the existing site to continue to effectively run their businesses. If the site were to move, it is assumed that only 75% of traders would relocate (with the remainder either consolidated by larger companies or setting up independently of the new site). Therefore choice and competition would continue but be reduced</li> </ul>	

Source: (1) Professor David Hughes, 2006

(2) London Wholesale Markets Review, GLA

(3) <http://uk.reuters.com/article/electionsNews/idUKL2057297620070621>

(4) Institute of Grocery Distribution 'The Local and Regional Food Opportunity 2005

(5) Tenants Business Analysis, KPMG



# Market failure and competitiveness

The issue	The evidence
<ul style="list-style-type: none"> <li>Market failure is a term used by economists to describe the condition where the allocation of goods and services by a free market is not efficient. With competition and no externalities, markets will allocate resources so as to maximize the economic surplus or rent available. However, if these conditions are not met, markets may fail to achieve the optimal outcome</li> <li>If there are potential externalities (and these include both positive and negative ones) there is a case for government to intervene in the market, assuming it can be done cost effectively.</li> <li>An example of a negative externality is the externalities of pollution, congestion and noise related to transport, discussed earlier. If the market options do not take account of these impacts, we can argue that the full cost of the options have not been included and to obtain the right value of the options, we should "internalise the externality" (in other words include the full cost of the externality in our overall appraisal). To an extent fuel duty covers some of the pollution impact</li> <li>Imperfect information also leads to market failure as competition relies on good information</li> <li>Similarly, if there are positive externalities (an example is the spillover of expertise resulting from having a critical mass of traders able to share innovation and market knowledge to mutual benefit) these should be included in any overall appraisal</li> <li>Some of the wider rationale for the market intervention (diversity of supply and externalities have been discussed elsewhere), but this issue focuses on the need to intervene to reap the benefits or avoid the costs</li> </ul>	<ul style="list-style-type: none"> <li>There are really two aspects to this issue from the perspective of the market. On the one hand the NGCM traders themselves operate a highly efficient and competitive market in which every bit of produce is sold at the end of the day. Markets do not operate efficiently with imperfect information but at NCGM, the buyers can see and touch the produce they wish to purchase and ascertain it's true quality, therefore imperfect information is much less of an issue</li> <li>The second dimension is in relation to the market as an entity, as opposed to the trade between operators. As a unit it is able to deliver economies of scale, for example in waste disposal or parking facilities. Without the infrastructure provided many of the traders would have to raise prices to their customers and/or reduce the diversity of supply</li> </ul>

Option	Applicability	Impact
2b)	<ul style="list-style-type: none"> <li>Allowing the market to close may lead to higher prices and a contraction of supply diversity (as discussed earlier). The wider externalities created by the market would not be addressed adequately and the extra congestion, pollution etc. would have to be borne by the public purse</li> </ul>	●
4c)	<ul style="list-style-type: none"> <li>The redevelopment option is constructed to address some of the issues that the market cannot deal with, such as the wider health and safety issues. It incorporates the negative externalities and provides an opportunity to exploit the positive ones, such as the critical mass of expertise</li> </ul>	●
5	<ul style="list-style-type: none"> <li>Relocation would enable the market to continue to operate. However the major transport externalities would not be addressed by this option</li> </ul>	●



# SME impacts

The issue	The evidence
<ul style="list-style-type: none"> <li>The on-going stimulation and support for small and medium enterprises (SME) has long been a core plank of government policy. This is evidenced by the new Enterprise Strategy just launched by the Department for Business, Enterprise and Regulatory Reform and the Department for Innovation, Universities and Skills</li> <li>A centre that is able to provide support to small businesses by the provision of services in credit control, meeting rooms, marketing, training etc. is well positioned to fulfil this aim. Typically it needs a critical mass of businesses in order to create a centre of expertise that facilitates the transfer of innovation and best practice. Without a specialist service, traders would have to rely on generic small business support which would lack the specialist expertise and transfer of innovation and best practise in the sector</li> <li>So the core issue to address is to explore the most efficient way of creating an environment that supports SME operators who are able to provide innovation, diversity, productivity and effective competition</li> <li>A market environment in which better market information is provided supports the ability of SMEs to purchase at competitive prices</li> </ul>	<ul style="list-style-type: none"> <li>The existence in one physical location of approximately 250 businesses can lead to many benefits. The existing CGMA management is committed to developing this 'centre of excellence'</li> <li>As an example of the type of impact that innovative and creative management can have is in the setting up of an electric flower delivery vehicle. This has enabled a porter in conjunction with a third party to set up a viable environmentally and efficient business unit that delivers flowers on demand. It replaces previous reliance on taxis, avoids the congestion charge and enables several deliveries to be combined</li> <li>The current management (and, one suspects, any future management) are able to exploit the economies of scale and provide this centre of expertise and provide a range of services (training, meeting rooms etc.) that would not be possible for the individual traders</li> <li>According to the Saphir report, the market does provide an environment in which SMEs can purchase competitively</li> </ul>

Option	Applicability	Impact
2b)	<ul style="list-style-type: none"> <li>The loss of the market as an entity would lead to the loss of an readily available support service for traders that is focused upon their requirements and would remove the potential for improved service</li> </ul>	●
4c)	<ul style="list-style-type: none"> <li>Redevelopment may allow a much more focused and professional centre of expertise to be set up to the benefit of SMEs in this sector</li> </ul>	●
5	<ul style="list-style-type: none"> <li>Relocation would enable a market to continue to operate in a combined fashion and could allow a much more focused and professional centre of expertise to be set up to the benefit of SMEs in this sector</li> </ul>	●



# Irreversible risk

The issue	The evidence
<ul style="list-style-type: none"> <li>The Green Book defines irreversible risk as occurring 'where implementation of a proposal might rule out later investment opportunities or alternative uses of resources'. It suggests that a full assessment of costs is carried out in any proposal. Consequently our analysis is designed to ensure that all the wider economic arguments for and against the closure or relocation of the market are fully considered</li> <li>Again quoting from the Green Book, 'Irreversibility is often associated with facilities on which people place 'option values' (the value of knowing a facility is available to enjoy, if they wish to do so). This is also linked to 'existence values' (the value of knowing that something continues to exist, even if the respondent does not expect to make any practical use of it).'</li> </ul>	<ul style="list-style-type: none"> <li>The premises from which the market currently operates have been deemed inappropriate in the medium term, given health and safety concerns. As such, if the market is not redeveloped or relocated, it will close down. Once it has closed down and suppliers have dispersed or have been forced to close down themselves, it will be very difficult to start market operations up again</li> <li>The irreversibility is driven by two main factors. Firstly the physical site itself is unique in terms of the distance to central London. Once it is re-developed to alternative use, it would be almost impossible to find a site of such size and in such a prime location again</li> <li>Secondly, the market embodies a unique set of skills and knowledge about a niche wholesale sector. We understand that this knowledge about products, suppliers, customers and quality has been built up over generations. If the market was re-located or closed, there is a major risk that this knowledge would be lost</li> </ul>

Option	Applicability	Impact
2b)	<ul style="list-style-type: none"> <li>If this option is chosen and the market is forced to close down, irreversible risk is likely to be an issue as it will be very difficult to reopen the market, especially as an alternative use for the land is likely to have been found</li> </ul>	●
4c)	<ul style="list-style-type: none"> <li>If the market is redeveloped, irreversible risk will not be an issue. Trading will continue as it is currently, and the number of suppliers could even expand</li> </ul>	●
5	<ul style="list-style-type: none"> <li>Relocating the market might make it difficult for operations to continue as they are now. It may not be feasible for all suppliers to move to a new site and therefore there is a risk that the experience will not be effectively recreated</li> </ul>	●



# Labour market

The issue	The evidence
<ul style="list-style-type: none"> <li>A fully efficient labour market is one in which buyers and sellers of labour are able to buy and sell labour easily so that no labour is underutilised or no labour shortages occur. The wage rate will be the prevailing market rate and workers are able to move from one employer to another quickly and easily</li> <li>The effect of this efficiency will be felt throughout the market operation. As a result the price of labour should be lower</li> <li>In terms of specialised knowledge and skills, it should be easier for higher value workers to obtain employment</li> </ul>	<ul style="list-style-type: none"> <li>New Covent Garden Market provides employment for around 2,800 people</li> <li>The Management group at the market have found that it is much easier to source low-skilled, manual labour such as food choppers than it is to source traders to work front-of-house at the market, due to the increased exposure and degree of knowledge required to operate in this role effectively. Nevertheless, the existence of a large base of knowledgeable workers does make it more likely that these specialist skills can be maintained</li> <li>In other words, it is, arguably, an efficient labour market because it is relatively fluid, with everyone working in the same space and able to move between market jobs easily. Employees of the trading companies build up specialist skills over time allowing them to move between wholesale companies operating at the market</li> </ul>

Option	Applicability	Impact
2b)	<ul style="list-style-type: none"> <li>Closing the market will disperse these skills across a wider area and make it harder for employers to source knowledgeable employees. As a result wages could, overall, rise leading to increased prices. Employees who lost their employment may find it more difficult to sell the specialist knowledge elsewhere</li> </ul>	●
4c)	<ul style="list-style-type: none"> <li>Redeveloping the market will enable the efficient labour market to continue to operate</li> </ul>	●
5	<ul style="list-style-type: none"> <li>Re-locating the market will, in theory, allow the efficient labour market to continue to operate, although, potentially, we might expect some disruption in the short term as some workers may not want to relocate and would be lost to the market (part of the irreversible risk issue)</li> </ul>	●



# Human, social and cultural capital

The issue	The evidence
<ul style="list-style-type: none"> <li>In terms of definitions, human capital describes the stock of productive skills and knowledge embodied in labour</li> <li>Closely related is social capital which refers to connections between and within social networks</li> <li>The relevance of these issues to NCGM is that human and social capital in this context relates to a comprehensive understanding of how the market operates in terms of produce, quality, reliability, suppliers, customers etc</li> <li>We could also add cultural capital as describing something that is an important part of the national culture</li> </ul>	<ul style="list-style-type: none"> <li>The Market dates back to the early 17<sup>th</sup> century and was granted a charter in 1670. It moved to its current site at Vauxhall in 1974</li> <li>We understand that traders have built up knowledge of prices, customer credit worthiness, product specifications and variety, and therefore it is difficult for someone with no experience of working in the market to acquire this knowledge quickly</li> <li>Historical knowledge of how the market operates has been built up over time and its produce has been used in the London catering industry for centuries</li> </ul>

Option	Applicability	Impact
2b)	<ul style="list-style-type: none"> <li>Allowing the market to close will mean London will lose this important historical feature. Human and social capital built up over years, and, in the case of cultural capital, over centuries will be lost</li> </ul>	●
4c)	<ul style="list-style-type: none"> <li>Redevelopment of the market will allow it to remain open, and improvements to the site may increase its longevity and importance</li> </ul>	●
5	<ul style="list-style-type: none"> <li>Relocation of the market will allow the Covent Garden legacy to continue, however the human and social capital built up in the Nine Elms area over nearly 40 years will be displaced and is more likely to be lost</li> </ul>	●



## Conclusions – multi-criteria analysis

- We are able to compute, based on a set of assumptions about mileage and externalities, the additional cost of the transport effect of the key options, 2b) and 5. These are summarised in the table below and show that the total quantifiable impact of transport may be in the range of £142m to £236m for option 2b) and £149m to £248m for option 5
- However our conclusion from this analysis (summarised by the indicator table below which roughly ranks the issues in terms importance from left to right) is that the wider economic risks and issues that the Green Book encourages us to review are critical. There are very significant economic risks, some potentially irreversible, if option 2b) or 5 is selected. These risks relate to the diversity of supply, the impact on SMEs, the impact on the market (both for goods and labour) and the loss of human and social capital. These risks, together with the quantifiable transport impact, lead us to the firm conclusion that option 4c) is the preferable option from the broader economic perspective

### Transport Costs

Issue		Vehicle Costs		Externalities		Labour		Total	
Option									
2b)	Low	£35m		£62m		£44m		£142m	
	Med	£47m		£83m		£59m		£189m	
	High	£59m		£104m		£74m		£236m	
5	Low	£38m		£58m		£52m		£149m	
	Med	£51m		£77m		£70m		£198m	
	High	£64m		£97m		£87m		£248m	

### Non-quantifiable ranking and indicators

Issue		Direct Transport (vehicle plus labour costs)		Transport Externalities		Diversity of Supply		Market Failure		SME Impacts		Irreversible Risk		Labour Market		Human and Social Capital	
Option																	
2b)		●		●		●		●		●		●		●		●	
4c)		●		●		●		●		●		●		●		●	
5		●		●		●		●		●		●		●		●	



## Detailed transport assumptions

- The transport model was based on 6 sets of assumptions. These expand and build upon those discussed on page 5 and 6, namely:
  1. Product mix (percentage of fruit, vegetables and flowers) and sources (import, UK)
  2. Distances from four source points (Heathrow, Harwich, Kent, East Anglia) measured in motorway and urban miles
  3. MVA vehicle survey and automatic vehicle numbers to determine the number to deliveries and collections
  4. Direct travel costs
  5. Externalities and CO2 conversion factors
  6. Labour costs
- The following tables summarise these assumptions.

### 1. Product mix

Percentage of fruit, vegetables and flowers and sources (import, UK)				
Type of produce	Market share	% produce shipped in (Harwich)	% flown in (Heathrow)	% grown in Kent % grown in East Anglia
Fruit	41.2%	43.2%	43.2%	13.6%
Vegetables	41.2%	24.7%	24.7%	0.0%
Flowers	17.5%	28.5%	28.5%	43.1%
Percentage of all deliveries to NCGM		33.0%	33.0%	13.2%
				20.9%

Source: CGMA and Defra



## Appendices

# Detailed transport assumptions

### 2 i) Mileage travelled delivering to NCGM

Option 4c)				
Start location	End location	Urban Mileage	Motorway Mileage	
Harwich	Nine Elms	72	13	
Heathrow	Nine Elms	14	4	
Kent (Faversham)	Nine Elms	38	14	
East Anglia (Ely)	Nine Elms	66	11	

### Option 2b) and 5

Start location	End location	Urban Mileage	Motorway Mileage
Harwich	M25 (Dartford)	-	72
Heathrow	M25 (Dartford)	-	57
Kent - Faversham	M25 (Dartford)	2	34
East Anglia (Ely)	M25 (Dartford)	1	78
Harwich	Greater London (Park Royal)	13	77
Heathrow	Greater London (Park Royal)	11	-
Kent - Faversham	Greater London (Park Royal)	3	88
East Anglia (Ely)	Greater London (Park Royal)	11	72
Harwich	3663 (Barking)	1	77
Heathrow	3663 (Barking)	27	7
Kent - Faversham	3663 (Barking)	17	33
East Anglia (Ely)	3663 (Barking)	2	68
Harwich	Brake Bros (Park Royal)	13	77
Heathrow	Brake Bros (Park Royal)	11	-
Kent - Faversham	Brake Bros (Park Royal)	3	88
East Anglia (Ely)	Brake Bros (Park Royal)	11	72

Source: The AA

### 2 ii) Mileage travelled collecting from NGCM

All options (as applicable)			
Start location	End location	Urban Mileage only	
Nine Elms	Charing Cross	2.6	
Greater London (Park Royal)	Charing Cross	19	
3663 (Barking)	Charing Cross	9	
Brake Bros (Park Royal)	Charing Cross	11	
M25 (Dartford)	Charing Cross	9	

**2 iii) Mileage travelled between market traders in dispersed market – 5 miles**  
per trip. Trips assumed to be the 50% of the number of collection trips (option 2c) and 12.5% (option 5). See section 3 for number of trips.



## Detailed transport assumptions

### 3. Mileage travelled collecting from NGCM

Estimated Vehicle Movements				
Type of vehicle	Deliveries to NGCM	Collecting from NGCM	Delivering and Collecting	Total
Cars	58	215	14	301
Light Goods Vehicles	392	846	57	1,352
Rigid 2 Axles	383	1,250	57	1,747
Rigid 3 Axles	33	39	-	72
Articulated 3 Axles	342	117	7	473
Rigid 4 Axles	25	-	-	25
Articulated 4 Axles or more	242	13	-	255
Not classified (1)	25	20	-	45
Total	1,500	2,500	135	4,270

Source: MVA vehicle survey and automatic count.

Note (1) Not classified were excluded from totals used

### 4. Direct vehicle costs in pence per mile

Direct vehicle costs - basis for urban and motorway miles(1)				
Type of vehicle	Fuel	Tyres	Repairs & Maint	Total mileage cost
Cars	0.16	0.01	0.05	0.21
Light Goods Vehicles	0.16	0.01	0.05	0.21
Rigid 2 Axles	0.19	0.01	0.05	0.24
Rigid 3 Axles	0.31	0.02	0.07	0.40
Articulated 3 Axles	0.31	0.02	0.07	0.40
Rigid 4 Axles	0.36	0.02	0.08	0.46
Articulated 4 Axles or more	0.53	0.04	0.11	0.67

Source: RHA website based on Road Haulage Association Estimates, vehicle classes mapped to MVA categories

Note(1) Urban costs are assumed to be 20% higher and motorway 20% lower. This is based on average fuel consumption figures for urban and motorway



# Detailed transport assumptions

## 5. Indirect costs in pence per mile

Types of externality (motorway)					
Type of vehicle	CO2	Congestion	Noise	Accidents	Total cost per mile
Cars	0.01	0.05	0.00	0.01	0.07
Light Goods Vehicles	0.01	0.05	0.00	0.01	0.07
Rigid 2 Axles	0.01	0.09	0.01	0.04	0.15
Rigid 3 Axles	0.02	0.09	0.01	0.04	0.15
Articulated 3 Axles	0.02	0.12	0.01	0.04	0.18
Rigid 4 Axles	0.02	0.12	0.01	0.04	0.18
Articulated 4 Axles or more	0.03	0.12	0.01	0.04	0.19

Source: DEFRA for CO2 cost and Road Miles report for externalities

Types of externality (urban)					
Type of vehicle	CO2	Congestion	Noise	Accidents	Total cost per mile
Cars	0.01	0.30	0.00	0.02	0.33
Light Goods Vehicles	0.01	0.30	0.00	0.02	0.33
Rigid 2 Axles	0.01	0.76	0.02	0.09	0.88
Rigid 3 Axles	0.02	0.76	0.02	0.09	0.89
Articulated 3 Axles	0.02	1.27	0.04	0.08	1.41
Rigid 4 Axles	0.03	1.27	0.04	0.08	1.41
Articulated 4 Axles or more	0.04	1.27	0.04	0.08	1.43

Source: DEFRA for CO2 cost and Road Miles report for externalities

## 6. Wage costs

Labour costs	
Average driver wage	£23, 732
No of working days	210
Cost per minute	£0.27
Minutes per mile (motorway)	1.3
Minutes per mile (urban)	3.5
Market days	312

Sources: National Statistics (annual Survey of Hours and Earnings)  
AA  
CGMA