Cambridge City
Hackney carriage demand survey

December 2017

Executive Summary

This Hackney carriage demand survey has been undertaken on behalf of Cambridge City following the guidance of the April 2010 DfT Best Practice Guidance document, and all relevant case history in regard to unmet demand. This Executive Summary provides the outline of the research undertaken. However, it should not be relied on without reference to the detailed document that follows.

This Report provides documentation of the survey undertaken by LVSA based on your Brief, our responding proposal and confirmation of instructions as received at our Inception Meeting in May 2017. On street interviews were in August, a test rank observation in June with principal observations in October, driver consultation through the Summer and key stakeholder contact throughout the course of the survey. The full report is documentation of the range of evidence collected to review the present application of a limit on the number of hackney carriage vehicles currently operating under the City licensing regulations.

The survey was undertaken in the context of the area being one of growth, strong pro-sustainable transport policies but also focussed purely on Cambridge City Council and not the surrounding hinterland authority of South Cambridgeshire whose vehicles also provide service to people particularly those travelling in the wider Cambridge area. It is also in the context of the Cambridgeshire County Council and Cambridge Greater Partnership Long Term Transport Strategy (LTTS). Further, the current development of Air Quality zones is far forward with Cambridge being one of eight areas given funding for a comprehensive review of how licensed vehicles might help achieve reductions in vehicle emissions.

The City had a period when there was no limit on hackney carriage vehicle numbers. This had two impacts – a reduction of private hire vehicle numbers as well as a strong increase in the level of the hackney carriage fleet which was wheel chair accessible. The City-based fleet is hence dominated by hackney carriages although a lot of South Cambridgeshire and out of town vehicles now supplement the private hire offer people experience in the area, meaning the balance of hackney carriage and private hire is not perhaps as dominant as the fleet might suggest.

The wheel chair accessible vehicles focus on the hackney carriage fleet with a current level of 65% marginally less than the peak of 70% achieved, although this is still a level which suggests some grandfather rights vehicles have actually chosen to be wheel chair accessible.

Present provision for customers with disabilities was set at a high level in the recent Taxi Policy and Handbook to a level at least equalling that required by the more recent permissive enactment of Sections 165 and 167 of the Equality Act.

A full rank observation programme of some 260 hours in a typical period in October was supplemented by a supplementary observation of the two main ranks over a weekend in June. Estimates from the October surveys suggest the private station rank provides 49% of all passengers. St Andrew's Street provides 28% and Market Square 12%. The station rank is even more dominant now than in the last surveys in 2012, although overall demand appears to be reduced from the 2012 levels despite high growth in station patronage. The June test covered a University event but demonstrated the fleet could still cope with such events.

The area retains high patronage in many hours at both the station and the St Andrew's Street ranks, levels seen in only a few cities around England. Station flows tended to be similar in most time periods whereas flows at St Andrew's Street grew through the day. Most current, including the new ranks, see service and usage, although most contribute only very small amounts to the overall total. On the busiest October survey day 74% of the fleet were observed active. However, the highest proportion seen in any one time period was 44%, suggesting spare capacity during that period. Some vehicles clearly only serviced the station, whilst a larger group only serviced the other ranks.

The public told us 87% had used licensed vehicles in the area in the last three months. There were about 2.4 licensed vehicle trips per person per month with half of these using hackney carriages. The station appears to have a much higher proportion of people leaving in hackney carriages given the proximity of the rank there and the ready availability of vehicles. Hailing was also quoted at 4%, much higher than the national average of 1%.

In terms of companies, one was dominant with two other large companies also in place. At least two of these top three companies have a high level of hackney carriages operating within their fleets, a characteristic of an area where there has been a period without limited numbers of hackney carriages and where many private hire have transferred to hackney carriage operation.

There was some interest in using electric licensed vehicles from the public. Overall, most people could get the sort of licensed vehicle they needed. In total six active and two less active ranks were known well by the public, and furthermore those naming ranks generally said they actually used them.

There were very few issues with the service provided by hackney carriages, with the key matter that might increase usage being existence of an 'app' people could use followed by more hackney carriages to phone for and more at lower prices. Latent demand levels were low.

Not many said they needed an adapted vehicle, but a high proportion felt that if people needed such a vehicle, they would get a good service.

Key stakeholders tended to use private hire services, with those in the night time economy more aware of ranks. Police and marshals alike felt there were more than enough vehicles available.

A very high 22% of all drivers responded to the all-driver questionnaire. The trade meeting was also well attended and provided valuable information. The driver fleet was flexible in terms of driving hackney carriage or private hire vehicles as appropriate, and tended to work six days and an above average 47 hours per week.

An encouraging picture of drivers servicing all ranks was obtained, with hackney carriages tending to work longer hours and more periods than private hire. 79% of those responding owned their own vehicle with 68% working on telephone circuits of some kind.

89% said the limit on vehicle numbers should remain including many private hire respondents. Many reasons were given how this policy benefitted the public.

The conclusion of the industry standard test of significance of observed unmet demand was there is no present unmet demand in the Cambridge City Licensing area which is significant. The testing situation of the June event was well responded to by the trade.

The City is at the forefront of both accessibility policies and air quality area developments. Incentives for taking up both accessible and low emission vehicles are in place yet flexible enough to take on board the present developing nature of the new vehicles only now beginning to actually operate.

Overall, there are about the right number of hackney carriage vehicles in the City fleet. This balances providing good service with making a living. The nature of the City does, however, provide opportunity for large out of course events that suggest the spare capacity in the present fleet is about right to allow sufficient reaction to out of course events when needed, without leaving too high levels of over-provision at other times.

The trade appears to be well aware and well able to provide extra capacity when needed and the extra protection afforded to the hackney carriage trade by the limit on vehicle numbers is having positive public benefit at this time. The present Policy document provides a good balance between what could be conflicting requirements. However, a key for future success will be continued information provision and flexibility in application of policy as the new vehicle options grow and develop. Quick wins are possible using current trusted technology whilst rapid dissemination of results from new options will need to go alongside the incentives being offered.

Alongside the City Policy, the trade needs to continue to be flexible and innovative in responding to challenges and opportunities, particularly in regard to modern methods by which passengers wish to obtain vehicles. Against the background of current high rank usage, this is a great current but urgent opportunity. The present fleet structure in the area also provides good opportunities for both private and corporate investment in the fleet to the benefit of the future policies.

The Council can further assist development by using the new map of ranks to promote the current set of rank locations.

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1 General introduction and background

Cambridge City is responsible for the licensing of hackney carriage and private hire vehicles operating within the Council area and is the licensing authority for this complete area. It retains a limit on the number of hackney carriage vehicles licensed. Further historical detail of the specific local application is provided in subsequent chapters. This is the only part of licensing where such a stipulation occurs and there is no legal means by which either private hire vehicle numbers, private hire or hackney carriage driver numbers, or the number of private hire operators can be limited.

This review of current policy is based on the Best Practice Guidance produced by the Department for Transport in April 2010 (BPG). It seeks to provide information to the licensing authority to meet section 16 of the Transport Act 1985 "that the grant of a hackney carriage vehicle licence may be refused if, but only if, the licensing authority is satisfied that there is no significant demand for the services of hackney carriages within its local area, which is unmet." This terminology is typically shortened to "no SUD".

Current hackney carriage, private hire and operator licensing is undertaken within the legal frameworks set by the Town Polices Clause Act 1847. This has been amended by various following legislation including the Transport Act 1985, Section 16 in regard to hackney carriage vehicle limits, and by the Local Government Miscellaneous Provisions Act 1976 with reference to private hire vehicles and operations. Many of the aspects of these laws have been tested and refined by other more recent legislation and more importantly through case law. Beyond legislation, the experience of the person in the street tends to see both hackney carriage and private hire vehicles both as 'taxis' – a term we will try for the sake of clarity to use only in its generic sense within the report. We will use the term 'licensed vehicles' to refer to both hackney carriage and private hire.

The legislation around licensed vehicles and drivers has been the subject of many attempts at review. The limiting of hackney carriage vehicle numbers has been a particular concern as it is often considered to be a restrictive practice and against natural economic trends. The three most recent reviews were by the Office of Fair Trading in 2003, through the production of the BPG in 2010, and the Law Commission review which published its results in 2014. None of these resulted in any material change to the legislation involved in licensing.

The upshot of all these reviews in respect of the principal subject of this survey is that local authorities retain the right to restrict the number of hackney carriage vehicle licenses. The Law Commission conclusions included retention of the power to limit hackney carriage vehicle numbers but utilizing a public interest test determined by the Secretary of State. It also suggested the three- year horizon also be used for rank reviews and accessibility reviews. However, there is no current date even for Government comment about the Law Commission review, yet alone any suggestion of when new legislation might be forthcoming.

After introduction of the 1985 Transport Act, Leeds University Institute for Transport Studies developed a tool by which unmet demand could be evaluated and a determination made if this was significant or not. The tool was taken forward and developed as more studies were undertaken. Over time this 'index of significance of unmet demand' (ISUD) became accepted as an industry standard tool to be used for this purpose. Some revisions have been made following the few but specific court cases where various parties have challenged the policy of retaining a limit. Some of the application has differed between Scottish and English licensing authority's due to some court cases in Scotland taking interpretation of the duty of the licensing authority further than is usual in England and Wales.

The DfT asked in writing in 2004 for all licensing authorities with quantity restrictions to review them, publish their justification by March 2005, and then review at least every three years since then. In due course, this led to a summary of the government guidance which was last updated in England and Wales in 2010 (but more recently in Scotland).

The BPG in 2010 also provided additional suggestions of how these surveys should be undertaken, albeit in general but fairly extensive terms. A key encouragement within the BPG is that "an interval of three years is commonly regarded as the maximum reasonable period between surveys". BPG suggests key points in consideration are passenger waiting times at ranks, for street hailings and telephone bookings, latent and peaked demand, wide consultation and publication of "all the evidence gathered".

The most recent changes in legislation regarding licensed vehicles have been enactment of the parts of the Equality Act related to guidance dogs (sections 168 to 171, enacted in October 2010), the two clauses of the Deregulation Act which were successful in proceeding, relating to length of period each license covers and to allowing operators to transfer work across borders (enacted in October 2015), and most recently enactment of Sections 165 and 167 of the Equality Act, albeit on a permissive basis (see below).

In November 2016, the DfT undertook a consultation regarding enacting Sections 167 and 165 of the Equality Act. These allow for all vehicles capable of carrying a wheel chair to be placed on a list by the local council (section 167). Any driver using a vehicle on this list then has a duty under section 165 to:

- Carry the passenger while in the wheel chair
- Not make any additional charge for doing so
- If the passenger chooses to sit in a passenger seat to carry the wheel chair
- To take such steps as are necessary to ensure that the passenger is carried in safety and reasonable comfort
- To give the passenger such mobility assistance as is reasonably required

This was enacted from April 2017. There remains no confirmation of any timetable for instigating either the remainder of the Equality Act or the Law Commission recommendations, or for the update of the BPG.

In respect to case law impinging on unmet demand, the two most recent cases were in 1987 and 2002. The first case (R v Great Yarmouth) concluded authorities must consider the view of significant unmet demand as a whole, not condescending to detailed consideration of the position in every limited area, i.e. to consider significance of unmet demand over the area as a whole.

R v Castle Point considered the issue of latent, or preferably termed, suppressed demand consideration. This clarified that this element relates only to the element which is measurable. Measurable suppressed demand includes inappropriately met demand (taken by private hire vehicles in situations legally hackney carriage opportunities) or those forced to use less satisfactory methods to get home (principally walking, i.e. those observed to walk away from rank locations).

In general, the determination of conclusions about significance of unmet demand must take into account the practicability of improving the standard of service through the increase of supply of vehicles. It is also important to have consistent treatment of authorities as well as for the same authority over time.

In conclusion, the present legislation in England and Wales sees public fare-paying passenger carrying vehicles firstly split by passenger capacity. All vehicles able to carry nine or more passengers are dealt with under national public service vehicle licensing. Local licensing authorities only have jurisdiction over vehicles carrying eight or less passengers.

These are split between hackney carriages which are alone able to wait at ranks or pick up people in the streets without a booking, and private hire who can only be used with a booking made through an operator. If any passenger uses a private hire vehicle without such a properly made booking, they are not insured for their journey.

2 Local background and context

Key dates for this Hackney carriage demand survey for Cambridge City are:

- appointed LVSA in mid-May 2017
- in accordance with our proposal of April 2017
- as confirmed during the inception meeting for the survey held in mid-May 2017
- this survey was carried out between mid-May and November 2017
- On street pedestrian survey work occurred in August 2017
- the video rank observations occurred in October 2017 (once university students were in place)
- Licensed vehicle driver opinions and operating practices were canvassed during July and August 2017 by an all-trade questionnaire and discussion with trade representatives, including some corporate responses
- Key stakeholders were consulted throughout the period of the survey
- A draft of this Final Report was reviewed by the client during December 2017
- and reported to the appropriate Council committee on 29th January 2018.

Cambridge City is one of five district councils within the county of Cambridgeshire. The authority has a current population of 125,900 using the 2017 estimates currently available from the 2011 census. This is a 3% increase since the previous study estimates. A key different factor about Cambridge is that it is surrounded tightly by the South Cambridgeshire hinterland which is a separate licensing authority. Levels of cycling are very high, as are levels of commuting given the two key rail routes to London.

In terms of background council policy, Cambridge City has transport planning principally led by the County. Their developments have included the St Ives Busway project, a key section of which runs through and south of the City centre near to the rail station. A very strong pro-bus / pro-sustainable transport policy has long been in place, supported by a strong pedestrianisation of the central core, which has no car access between 10:00 and 16:00.

The current Long-Term Transport Strategy (LTTS) had a consultation draft in April 2014. This applied to the period from 2011 to 2031. The vision set out was an integrated transport network enabling efficient and reliable travel between key destinations. The Cambridge Greater Partnership between various parties provided significant transport infrastructure funding to support expected growth in and around the City.

The LTTS focuses on strategic transport policies and priorities up to 2036 and aspirations up to 2050. TTS sets out the background of high car ownership, but low levels of journeys to work by car. Cycling accounts for 9% of journeys to work, three times the national average, and an even higher level of 29% for the City itself. In the overall context, the rural areas of the County are seen to need demand responsive transport, taxi sharing and other schemes. As is the case with most other LTP documents, direct mention of policy towards hackney carriage and private hire services is not included.

The area has seen recent investment in the railway station façade and approach, with a lot of new buildings replacing some of the former car parking area, and revising the access and location of the main, but private rank, servicing the station. Further, more developments are due with new trains and links due over the coming years as the Thameslink scheme comes to fruition. This will provide links from Cambridge through London to many southern England destinations including Gatwick Airport and the South Coast, which may further increase levels of rail travel. At the time of beginning this project, the new Cambridge North station had just opened (21 May 2017). This site, in South Cambridgeshire area, has three trains per hour to London, and will see some of the Thameslink revised services either terminating there or passing through in due course. This could potentially divert some passengers from use of the main Cambridge station, and possibly from Cambridge licensed vehicles.

The nature of the authority means that rank provision is principally via the County Council, with the City having input, but not full control of the traffic regulation orders required.

The present Air Quality Action Plan Theme 1 is 'reduced emissions from taxis'. Measures include items as follows:

34 – Clean Air Zone
36 – Installation of taxi only rapid charge points
41 – licensing conditions to require low emission taxis
40 – fee reductions for low emission taxis

The target is a 100% electric or petrol hybrid taxi fleet within ten years.

The taxi only rapid charge points have been fully funded from a range of sources with an agreed installation timetable seeing them in place by the end of the 2017/18 financial year. Further moneys have been committed to taxi licensing fee reductions over five years to incentivise low and ultra-low emission taxi vehicle uptake.

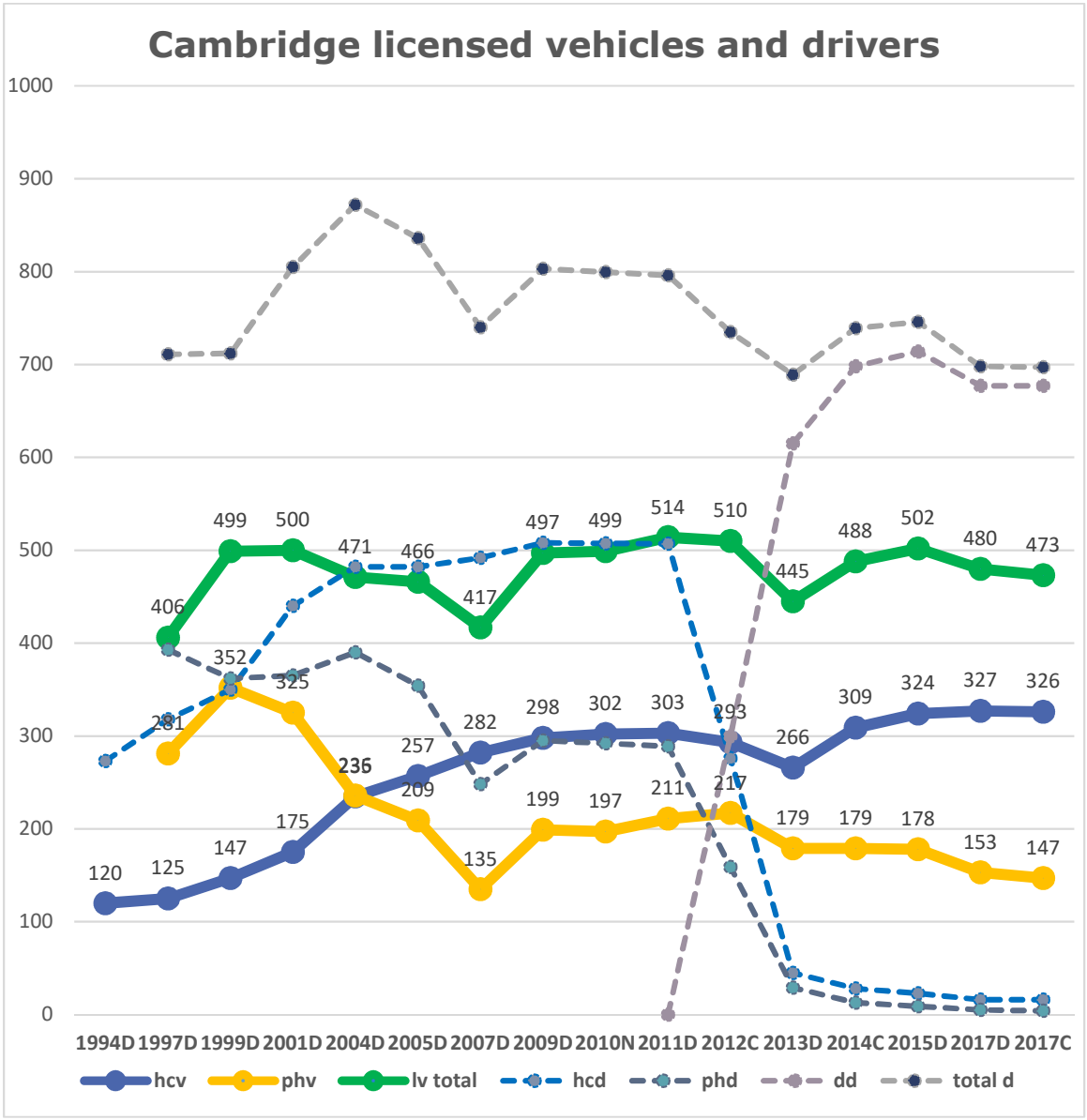
These two items aim to achieve a 20-30% reduction in emissions from taxis with a 1.5-4.5% reduction specifically in NoX emissions from this fleet. This level of benefit was estimated by the EST feasibility study published in 2016, assuming uptake by 67 hackney carriage and 50 private hire vehicles in the early part of the period considered.

All these matters were confirmed by the Licensing Committee in October 2016 alongside the adoption of the revised Taxi Licensing Policy at that time. Revisions to detail are due for agreement in the March 2018 licensing committee activities. This will include confirming fee discounts, exemptions for low emission vehicles, extended age limits and final dates for the changeovers of vehicles. The OLEV funding requires quarterly reporting of progress as well as annual reporting of uptake achievement, together with reporting in any relevant Annual Status Reports.

Further, within the revisions to the Taxi Policy and Handbook came inclusion of the requirements for drivers to follow the Equality Act provisions in regard of not discriminating against those needing wheel chair accessible vehicles. This was included in advance of the recent permissive introduction of Sections 165 and 167 of the Equality Act. In fact, the Cambridge City provision goes further as it allows the greater overall penalty of revoking their licence should that be felt appropriate, a much stronger provision than in the Act. These policies were in fact introduced a few years ago in order to better protect customers. It is felt this system works at least as well as the permissive sections of the Act put in place in April 2017 by national government. This was ground-breaking at the time, and remains best practise particularly given the recent permissive enactment.

All licensing authorities have full powers over licensing the vehicles, drivers and operators serving people within their area. Cambridge City has chosen to utilize its power to limit hackney carriage vehicle numbers, and most recently chose to re-apply these in January 2015.

By drawing together published statistics from both the Department for Transport (D) and the National Private Hire Association (N), supplemented by private information from the licensing authority records (C), recent trends in vehicle, driver and operator numbers can be observed. The detailed numbers supporting the picture below are provided in Appendix 1. Due to the comparative size, the operator figures are shown in the second picture.



Licensing Statistics from 1994 to date

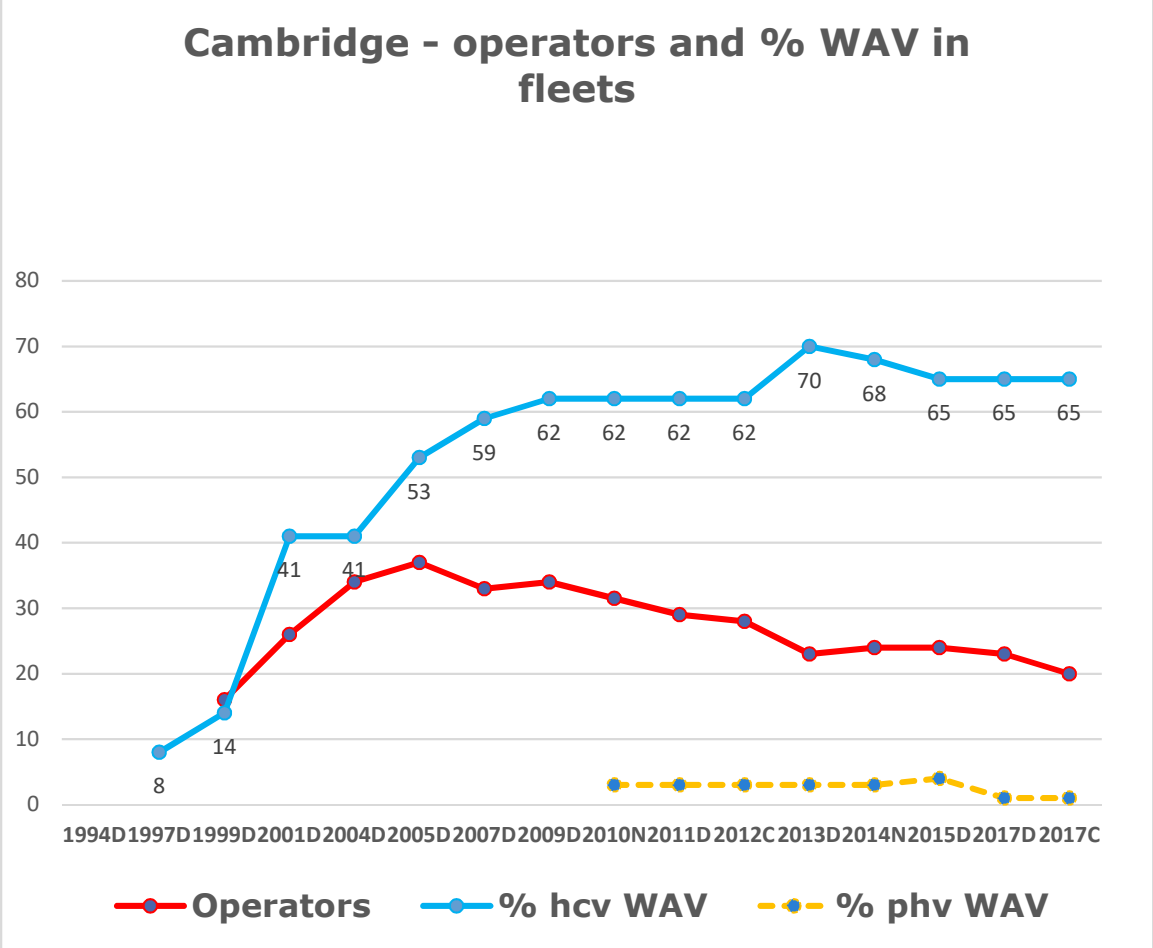
The graph above demonstrates the growth of hackney carriages in the area of some 173% since the start of formal DfT records in 1994. However, most of this growth was up to 2011, after which there was a drop in numbers, but then further growth with the current DfT figure for March 2017 slightly higher than the current October 2017 Council number.

Although private hire vehicles are now 55% of the level they were in 1997, they are 44% of the peak number which was reached in 1999. A high proportion of the reduction appears to be transfers to hackney carriage during the period of no limit on numbers, although numbers were growing up to 2012, after which they have gently declined to the current level.

Whilst this apparently mirrors hackney carriage growth, the impact of some vehicles transferring to out of town operation may also have had some impact, particularly with many vehicles operating under South Cambridgeshire licensing. The graph also clearly shows that, in terms of Cambridge City licensed vehicles, hackney carriage are dominant, and outnumber private hire by more than two to one. However, as already noted a lot of vehicles have over time tended to work in the City but have South Cambridgeshire licences (partly reflecting the fact that a lot of trips from that hinterland are in any event to Cambridge, and partly reflecting different licensing conditions).

In terms of driver numbers, the transfer of vehicles to hackney carriage saw a similar transfer of drivers. However, more recently, dual driver badges have been issued and most have transferred across to these. The latest Council statistics suggest just under 700 drivers exist for 473 vehicles, suggesting a good proportion of potential for vehicle sharing by drivers. Just 20 of these drivers remain only able to drive either hackney carriage or private hire.

Information is also available from these sources to show how the level of wheel chair accessible vehicles (WAV) has varied. It must be noted that in most cases the values for the private hire side tend to be much more approximate than those on the hackney carriage side, as there is no option to mandate for private hire being wheel chair accessible. In some areas, to strengthen the ability of the public to differentiate between the two parts of the licensed vehicle trade, licensing authorities might not allow any WAV in the private hire fleet at all.



Operator numbers and levels of WAV provision in the fleet

For Cambridge City based vehicles, most wheel chair accessible are those within the hackney carriage fleet. The present level of 65% is slightly lower than that at the peak (70%) but is still a very high value for a mixed fleet, although this has predominantly been achieved by the period when all new hackney carriages had to be wheel chair accessible. There are a handful of similar vehicles in the private hire fleet, but this proportion has reduced more recently.

In terms of the latest full DfT statistical survey, undertaken for March 2017, covering all English and Welsh licensing authorities, including London, the average level of WAV hcv is 56%, with the WAV phv level at just 2%. When London and Welsh authorities are removed, the WAV hcv average proportion falls to 41%, but the WAV phv level rises to 4%. There are two authorities in England without any hackney carriages at all. A further eight have no WAV vehicles in their fleet at all, whilst two more have only WAV in their phv fleets. 57 English authorities have fully WAV hackney carriage fleets. The remaining 223 English authorities with mixed (WAV and saloon) hackney carriage fleets have an average WAV level of 23%.

Cambridge is therefore at a much higher level with its current 65% of the hcv fleet WAV style. Taken in context of mixed fleet authorities, Cambridge is 20th highest in terms of the level of WAV proportion of the hackney carriage fleet. Listed with all English authorities excluding London, including those fully WAV, Cambridge would be in 77th place overall of 291 authorities. Taken in context, if all was equal, people in Cambridge would tend to find two out of three hackney carriages were WAV style.

We understand that 121 vehicles (37%) retain grandfather rights to be saloon style, which suggests that a very small proportion of current wheel chair vehicles have such rights but have chosen to be wheel chair accessible. With no new plates being issued, this value is critical to any potential wish to move towards a fully wheel chair accessible fleet, notwithstanding other issues related to electric vehicles more recently introduced into the mix.

There is a further complication within the current Cambridge operation in that the station rank requires a supplementary permit. We have been advised that there are 167 such permit holders, or just over half of the fleet. However, of the 121 grandfather rights vehicles, most of which are saloon, all but one has station permits and tend to focus operation at the station. This means a higher proportion of WAV style vehicles will tend to be found in the city centre. Our full survey found 32% WAV in the station vehicles but 78% of the St Andrew's Street vehicles WAV; with the value for the station the same in the June test, but up to 80% at St Andrew's Street.

Cambridge City undertakes regular review of its policy to limit hackney carriage vehicle numbers in line with the BPG. The previous surveys were in 2012 and 2014, the latter which led to re-application of the limit in January 2015. Prior to this, there had been surveys in at least 1992, 1995 and 1999, with the limit removed in favour of new vehicles having to be wheel chair accessible in 2001.

Ironically the figures seem to suggest that the period between the first thoughts about reintroducing a limit and the actual final application of this led to about at 10% higher level of hackney carriages during that period – immediately before which numbers had reduced from their peak.

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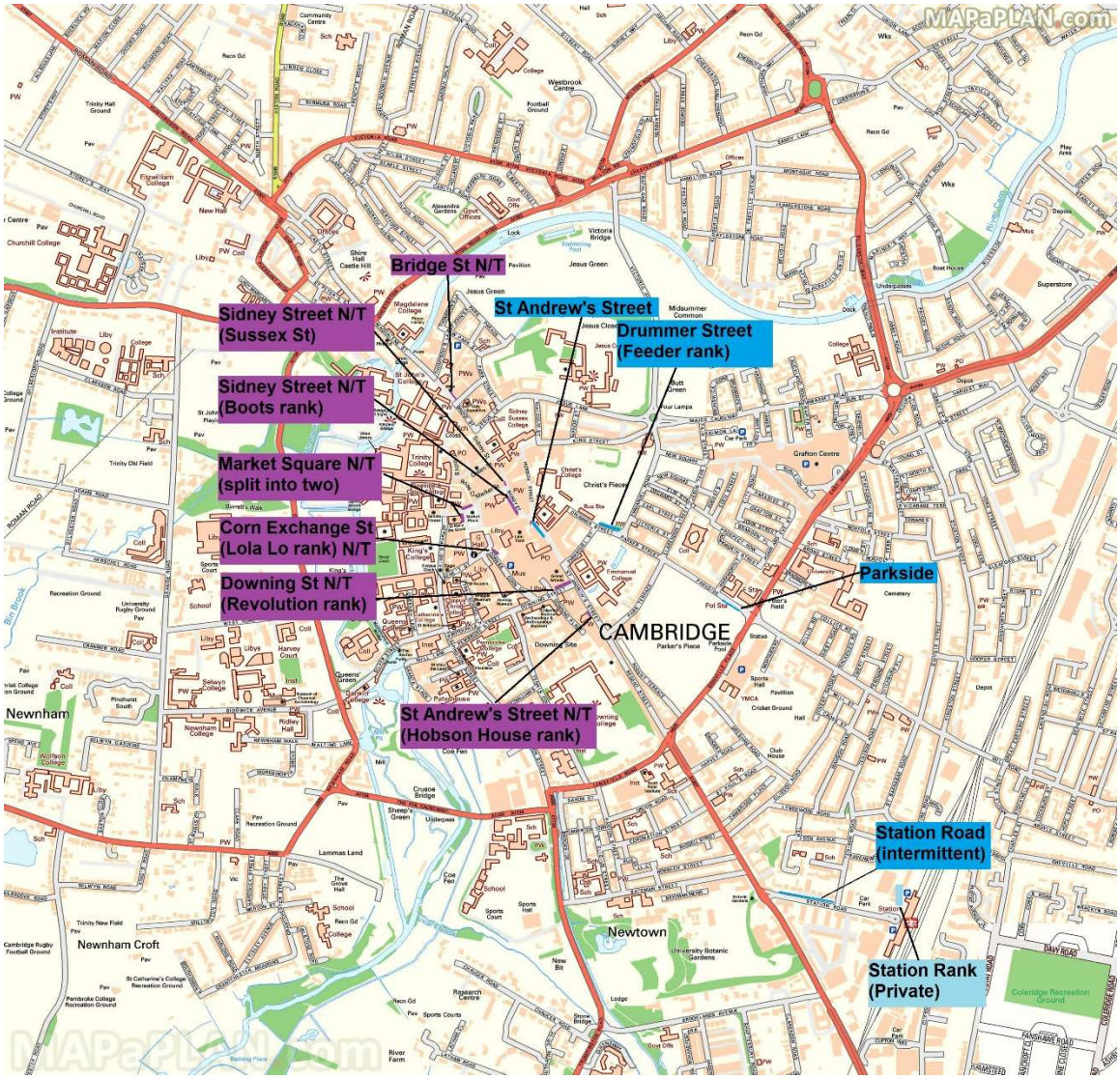
3 Patent demand measurement (rank surveys)

As already recorded in Chapter 2, control of provision of on-street ranks in Cambridge City is principally under the auspices of the County Council who has overall highway powers for the full City area.

Appendix 2 provides a list of ranks in Cambridge City at the time of this current survey. Our methodology involves a current review both in advance of submitting our proposal to undertake this Hackney carriage demand survey and at the study inception meeting, together with site visits where considered necessary. This provides a valid and appropriate sample of rank coverage which is important to feed the numeric evaluation of the level of unmet demand, and its significance (see discussion in Chapter 7). The detailed specification of the hours included in the sample is provided in Appendices 3 and 4.

A map of ranks, provided by the Council, is below:



In terms of change since the last survey, the major revision has been the station rank. The forecourt has been rebuilt and access along Station Road reduced to buses only just west of the station entrance. A purpose built two-lane rank has been built near to the former location but access and egress is now via the single lane exit from what is also a set-down area, Great Northern Road and Tenison Road back to Station Road. Informal feeder spaces are allowed in the car park area. This rank remains restricted to a sub-set of the hackney carriage fleet.

The ranks on council highway on Station Road west and east of Tenison Road both remain marked, although the eastern one has now lost its signs and the road markings are very faded. These spaces could be used by any vehicle but appear rarely used. The section at the far end should now be marked as pay and display bays, and was ever only temporary. The section nearer the station may be returned once the hotel building work is complete, although this will then be a two-part rank split by the hotel entrance. There is a possibility it may not actually return, the capacity will in any event be less than the previous 15 spaces. Its main use was whilst the station forecourt was rebuilt, when it was active for some while. In theory it would still provide a permit-free rank therefore available to all hackney carriages compared to the restricted main frontage rank.

Other ranks remain the same as they were, with the feeder system for St Andrew's Street main rank now supplemented by drivers using mobile phone messaging to move between this rank and the main location due to reduced trust in the call-on system. It has been confirmed that a temporary feeder rank provision in Emmanuel Street to supplement the Drummer Street feeder was only intended to be short term and should not be relied upon long term.

Those in the central area are night only given the full daytime pedestrian system. There are two new night ranks just at the edge of the pedestrian area, one in the bus layby outside John Lewis in Downing Street (known as the Revolution rank), and another using loading bay spaces at the northern end of the one-way Corn Exchange Street (Lola Lo rank), although this latter site may (as does one of the Market Square ranks) suffer from large bin storage in part of the space. These two ranks were introduced at the end of March 2017, although lines were in place before the signs were put in place and they became fully legal.

The trade refers to key ranks using a colour code:

- Yellow – St Andrews Street / Christ's College rank
- Red – Drummer Street feeder
- White – Parkside
- Black – station.

Variation in demand

The council were keen to understand how demand varied over time at key ranks. In our previous survey, we had been able to use a longer-term traffic count at the approach to the station rank to obtain information which was compared to the observed flows to confirm how typical our observations were. This was not possible in this survey as the new road surface and layout did not provide a sensible location for accurate counting to be undertaken.

The possibility of undertaking a similar review at the St Andrew's Street rank, or some combination with the Drummer Street location was considered. Contact was made to see if the call-on system used recorded any information at all – at Drummer Street there is a traffic count loop, and the optical system also records vehicle presence to enable the message of space to be passed back to the sign in Drummer Street. Though both regularly use information to work, neither store any information, nor could be readily modified to do so without significant time and cost.

Hence, it was not possible to obtain longer term data cost effectively at either key rank. The decision was made, however, to undertake two 48-hour observations of the two key ranks over a weekend in June 2017 which would then be compared to the information collected in October 2017 once the students had returned. Further discussion of the differences and results for this test are provided in the rank detailed discussions below.

Station Rank

This rank is directly outside the pedestrian exit from the station. It is slightly further away from the exit / entrance than it used to be, but still provides around 14 direct spaces in two lanes on a paved brick surface. There is a canopy to provide some passenger shelter from rain provided in the middle of the rank. The area also has a drop-off and pick-up area for other vehicles further away from the station, and then a single lane exit from the full area. Pick up is from the passenger side, though being a separate rank, would safely allow loading from both sides, with plenty of space for ramps. Additional vehicles at busy times can wait in the station car park to feed through to the rank.

The principal change from the previous study is that access is no longer directly to Station Road, which is bus only, and now separated off by the paved area leading directly from the station exit along Station Road towards the city centre. All vehicles accessing the rank and pick-up / set-down area must gain access via Great Northern Road, a new link off Tenison Road built between the new developments.

Access to and from Station Road towards the city centre is along Tenison Road. Buses have priority at the Tenison Road / Station Road junction meaning that vehicles leaving the station have to give way to buses from the station together with a small amount of other vehicles.

St Andrew's Street and feeder

This main council provided rank gives six to seven spaces just south of the junction with Sidney Street right at the start of the pedestrianised area of the main city centre. The rank is located on the western side of this one-way northbound road. Loading is from the passenger side, with driver side loading dangerous due to the passing traffic, including many buses. Although the pavement is wide, pedestrian volumes may cause issues when loading wheel chairs.

The rank has a feeder site with nine spaces in Drummer Street, just near the bus station. The main rank has optical detectors linked to a sign at Drummer Street which should change to confirm spaces are available, to reduce over-ranking and the obstruction to through traffic this might cause at the main location. Drummer Street loading, if used, is from the driver side. The location also has public toilets meaning it can act as a rest rank at times.

We were advised that issues with the call-on system mean that drivers using this rank tend to use a text service to confirm available spaces rather than trusting the call-on system. This also allows for vehicles arriving directly along St Andrew's Street rather than passing via Drummer Street. Some passengers do take vehicles from the feeder rank.

We were also advised by a police representative that there had been an informal arrangement allowing excess hackney carriages to wait on Emmanuel Street, and that they were not clear if this will return after road works which prevented it are completed, nor on what basis this was initially allowed. This was the only reference made to this and we have only included this comment for completeness. Highways have confirmed this arrangement was only temporary and that it will not continue. This means that any issues of over-ranking at Drummer Street feeder will need further fresh consideration if they are considered to be problematic in the near future.

Parkside

This rank is a five-space location on the southern side of this one-way road, just north of the long-distance coach stops for Cambridge. Vehicles load from the passenger side of the vehicle, with any driver side loading being dangerous due to passing traffic. There would be plenty of space for wheel chair loading although this would block the pavement at the time of use.

Sidney Street, near Sussex Street

This night time rank, formally available from 1900 to 0700 only, is on the western side of the street between Market Street and Sussex Street. The highway is brick tiled at this point so any attempt at painting markings would be futile, even if legally possible. The location is marked on two low bollards at either end of the two spaces provided. There is no other signage or any pedestrian guidance to the location, with the only real advertising being vehicles sitting there.

Sidney Street is one way northbound and only accessible between 16:00 and 10:00. Loading from either side would be possible given the slow speeds, although usage of wheel chair ramps could be difficult given the overall narrowness of both pavement and street.

Sidney Street, near Petty Cury (Boots rank)

This location is directly outside the Boots store just north of Petty Cury. It is again on the western side of the one-way northbound road although this location has a wider road and pavement than the rank above. Again, it is only marked by signs on low bollards at either end, with brick paving again making any other marking very difficult.

Market Square

This area is also within the pedestrianised area only accessible to vehicles between 16:00 and 10:00. The Square surrounds the market stalls. There are two sections of rank, both available 19:00 to 06:00 only. Both have five spaces. The western side rank is near to Great St Mary's Church and with tarmac road surface does have clear road markings. It is a clearway at other times, but loading is allowed from 16:00 to 19:00 and 06:00 to 10:00. However, the rank often tends to have one space taken up by large waste bins used for the market. Loading would be possible from either side, although the passenger side pavement is relatively narrow. This rank is marked 'taxi rank covered by CCTV'.

The section of rank on the northern edge has signs and small bollard signs but with brick tiled paving no road markings. It is in a layby although the pavement here is much wider, and again loading would be possible from either side of the vehicle given the very low traffic speeds and volumes here.

Bridge Street

This rank is located in the pedestrian zone of this Street, with access allowed for buses, taxis and vehicles needing to get to properties in Bridge Street South. This is not part of the central area pedestrianisation and does not have as stringent access arrangements. The road is one-way northbound, and the rank is on the eastern side of the road. This means that passengers need to enter from the driver's side, although passenger side loading is possible but with caution given the passage of buses. It is located in a layby which has four spaces, but signing only on small bollards.

St Andrew's Street, Baptist Church (Hobson House rank)

This rank has clear larger street sign marking but again being on brick paving, no road markings. The site can also be used for loading 07:00 to 10:00 and 16:00 to 19:00 and for disabled badge parking between 10:00 and 16:00. Passenger loading is from the passenger side with a relatively wide pavement nearby. Further, driver side loading would be unsafe given the volume of buses passing immediately adjacent to the rank.

Unlike many other ranks, the adjacent road is two way, albeit bus and taxi only southbound, so vehicles could service it from the driver side heading southbound.

Downing Street (Revolution rank, John Lewis)

This is a recently introduced rank with five spaces which takes over from the bus stop at this location between 22:00 and 06:00. The rank is well-signed but road markings only define the bus stop and not the use as a taxi rank. Pedestrian loading would be from the passenger side, although like the Baptist Church rank the road nearby is two-way. The John Lewis building overhang effectively provides shelter at this location, the only council rank to have such a facility.

Corn Exchange St (Lola Lo rank)

This new rank is a two-space location in a lay-by right at the northern end of this one way street, near to an exit from the nearby shopping centre. The passengers must enter from the drivers' side given the road layout. Passenger side loading would be possible given the slow other traffic speeds, but wheel chair loading here would be disruptive to other traffic. The rank operates from 19:00 to 07:00 only every day, and is otherwise a loading bay.

Access from this location follows the one-way route out to Wheeler Street, Bene't Street and Trumpington Street, so can be fairly lengthy possibly suggesting the likelihood of vehicles waiting here could be quite low.

Rank observations

There were two elements to the rank observation programme. The two busiest ranks at St Andrew's Street and the private rail station location were initially observed during June over a period running from Thursday 16th June at 06:00 through to 03:59 on Sunday 19th June in both locations. A wider, all-rank coverage was undertaken from 14:00 on Thursday 12th October 2017 until 06:59 in the early hours of the Sunday. The latter survey provided 260 hours of observations across the ranks in the City, including several lesser used locations. Full details of the coverage of the two surveys are contained in Appendices 3 and 4 of this report.

Rank usage overview

In order to set the observed rank usage in context, the October full survey programme results were used to estimate typical weekly usage of hackney carriages by rank in Cambridge at this time. The table below also compares these results to the June surveys for the two top ranks, and to the previous (2012) survey data results. The table below is listed in order of the rank with highest usage from the full 2017 estimates first (irrespective of if the rank is private or otherwise). Values shown are estimated weekly passengers at each location. Full details of the results by hour by rank are provided in Appendices 5 and 6 for the June and October surveys in 2017.

Rank	2017		2017, June-based		2012	
	Flow	%	Flow	%	Flow	%
Railway Station (private)	13,263	49 (63)	21,445	59 (71)	14,145	45
St Andrew's Street	7,668	28 (37)	8,908	24 (29)	12,290	38
Market Square	3,307	12			586	2
Drummer St	965	4			91	0.0
Downing St	569	2			n/a	
Sidney St, Sussex St	540	2			3,000	9
Bridge St	431	2			462	1
Parkside	244	1			302	1
St Andrew's St Church	32	0.0			Not covered	
Corn Exchange St	4	0.0			n/a	
Sidney St, Boots	0	0			1,200	4
Total	***27,023***		***36,443***		***32,076***	
Comparison to 2012	***-16%***		***+14%***			

The table demonstrates how dominant the railway station rank is in the overall picture. In the full rank survey, it takes some 49% of all passengers. St Andrew's Street follows second, but with just over half the level of passengers. Market Square is the next with 12%.

As expected, some passengers do take vehicles from the feeder rank in Drummer St which is near the bus station and several bus stops, amounting to some 4% of estimated 2017 typical trade from ranks.

Three other ranks, including the new Downing St rank, take around 2% of passengers, whilst the last rank with any significant usage, Parkside, near the coach stops, provides about 1% of average weekly patronage. Some use was observed both of the St Andrews Street church rank, and of Corn Exchange Street new rank, but usage of both was low. No observed usage was found for the Sidney Street rank near Boots.

Compared to 2012, the station has increased dominance although based on the October flows, but actual volumes there have reduced about 6% (but see below).

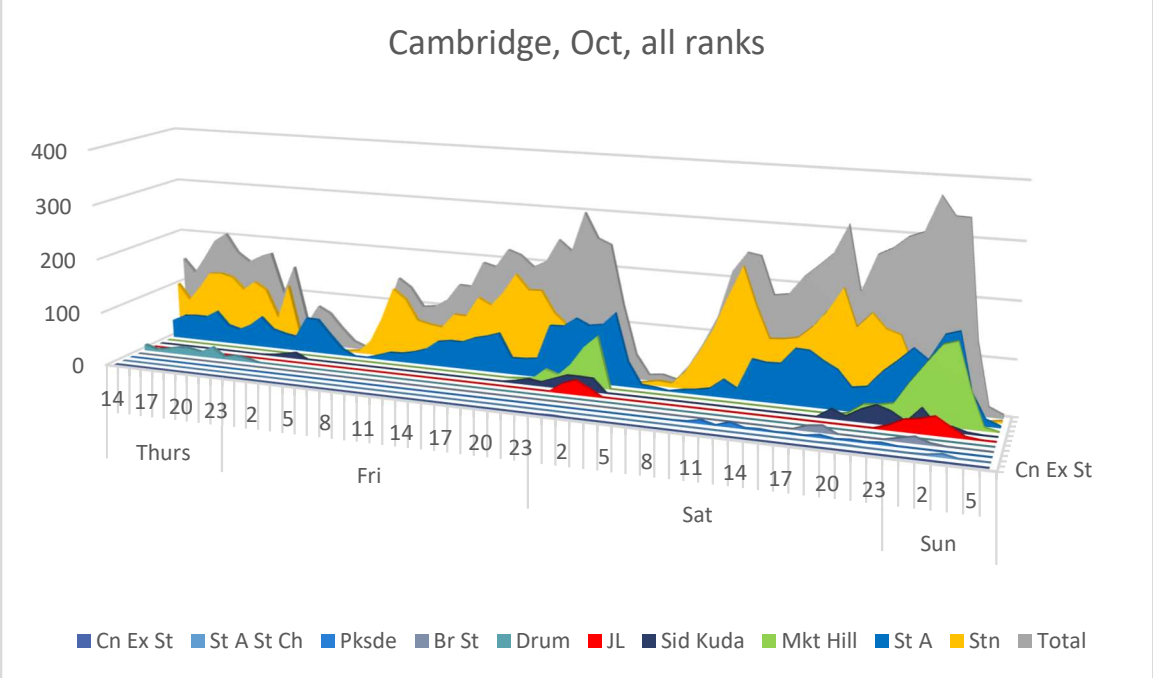
St Andrew's Street has lost about a third of its typical passenger numbers, although the Market Square ranks appear to have increased almost six times, with consequent significant increase in the proportion they take of the total. Sidney Street, Boots, appears to have lost any usage, whilst the other rank has also seen significant reduction. Bridge St and Parkside locations have remained fairly stable in volumes, although the proportion of the total for Bridge Street has actually marginally increased. The two new ranks have added about 2% to the overall flows, although net losses suggest an overall reduction of around 16% since 2012.

However, review of the June information shows increased passenger numbers based on the June flows, so much so that both top two sites have about 13% and 19% more flow for an equivalent set of hours in June compared to October. This may have related to a major University open day on the Saturday of the survey in June, which may have increased the station flows particularly on the Saturday. On this basis, we would suggest that rank flows in 2017 are probably fairly similar throughout the year to what they were in 2012, despite significant growth in the area (see synthesis section for comparison in station patronage growth and other discussions).

Having set the context, the following section provide more detail on the current usage of ranks in Cambridge, as well as discussing operation of each rank in more detail to paint a clearer picture of usage by time of day and rank.

Overview of ranks from direct observations

Graphs were produced to compare the data collected in a visual manner. The first graph shows the overall results of the October wider survey.

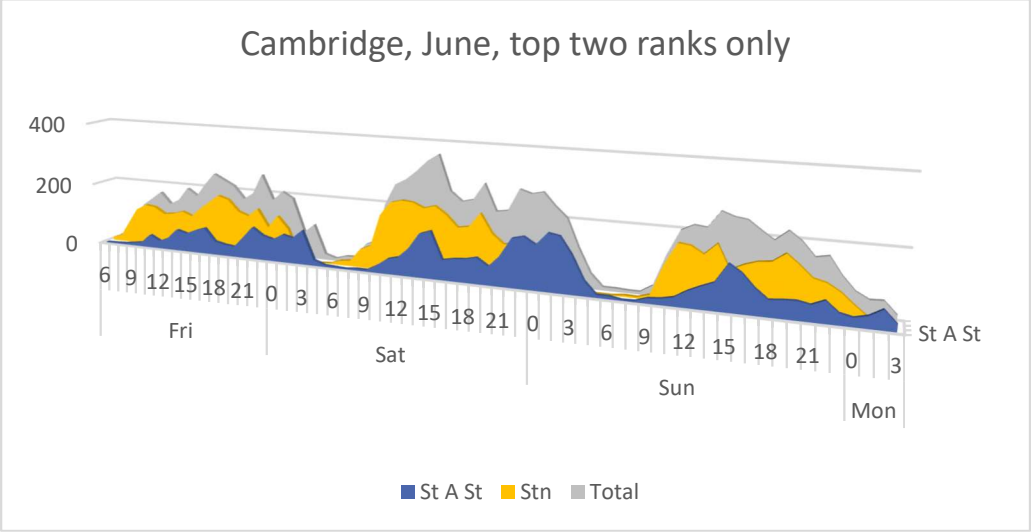


This demonstrates graphically the general dominance of the station rank followed by the St Andrew's Street rank. However, it also shows that the St Andrew's Street rank tends to grow in usage through the day, with a dip and then an overnight peak, whilst the station tends to drop off in usage as train services reduce after the evening peak. Flows are higher as the weekend progresses. In terms of night demand, Market Square provides a good proportion of the night demand, being almost equal to demand from St Andrew's Street on the Saturday. The new rank at Downing Street also makes a clear contribution to night demand on both Friday and Saturday nights.

All other ranks see some use, but of minor levels only. When taken together, Thursday demand is generally similar most of the day, but drops off overnight. The Friday and Saturday profiles see demand growing towards the overnight peak, although overall there are several peaks and the general profile of demand cannot be considered to be 'peaky' as demand has a general rise and fall rather than any significant spikes at any small number of hours.

The second graph considers the June flows at the two top ranks only. This confirms the profiles shown on the main survey but also demonstrates that Sunday is generally quieter than Saturday, but only marginally less busy than Friday considering the top two ranks. The main difference appears to be a lack of late night peak, although this may relate to cover only of the top two ranks and omission of any information for the night only ranks.

Comparison of the Saturday profiles show the increases potentially from the arrival of students into the City for the university open day. This particularly affects the station flows as a much higher number arrive during the morning period than on the October Saturday.



Detailed review of ranks

This section considers each rank by day. Again, the review is undertaken considering the busiest ranks through to the quietest, using the actual observations undertaken, including both June and October. Detailed results are included in Appendices 5 and 6.

Station Rank

This rank was observed from 06:00 on Thursday 16th June 2017 until 03:59 in the early hours of Monday 19th June 2017. It was also covered from 14:00 on Thursday 12th October 2017 to 06:59 in the early hours of Sunday 15th October 2017. In all cases, vehicle arrival times were taken as they approached the rank area, and departures as they left. This means any waiting time in other places such as the station car park, is excluded from the vehicle wait times for fares, although mentioned where appropriate.

Thursday, October

For the 17 observed hours, there were some 1,164 passengers leaving this rank in 880 vehicles, a low occupancy of just 1.3 passengers per vehicle. 14% of vehicles arriving left without passengers, mostly in the afternoon period.

7% of passengers arriving had to wait for a vehicle to arrive. The longest wait was seven minutes in the 18:00 hour, whilst others waited in most hours from 14:00 through to the 22:00 hour (apart from in the 15:00 hour).

However, over the full period observed the average passenger delay was just nine seconds.

In terms of passenger flows, they were generally between 71 and 130 in most hours, apart from the 01:00 which had just nine, and the hours between the 02:00 and the 04:00 which saw no passengers and only a few vehicles. Flows then were two and five in the 05:00 and 06:00 hour on the Friday morning. The peak flow was 130 in the 18:00 hour which did link in with the highest average passenger hourly delay, which was just 26 seconds despite 23 people having to wait for a vehicle to arrive.

Vehicles waited between two and seven minutes for passengers in most hours. However, vehicle waits towards the end of the night were longer, around 16 minutes, though maximum vehicle waits were not much longer, with the most observed being 28 minutes. This excludes any waiting time at feeder locations such as within the station car park.

Friday, June

The 24-hours observed on the Friday in June saw some 2,343 passengers leave in 1,657 vehicles, a low occupancy of 1.4 people per vehicle. 11% of arriving vehicles left the rank without passengers, interestingly mostly during the afternoon.

This set of observations saw a total of 360, or around 15% of people arriving having to wait for a vehicle to arrive at the rank. The longest observed wait was nine minutes, with waiting occurring in every hour from 12:00 onwards until the 02:00 hour, apart from no-one having to wait in the 15:00 hour. However, only four of these hours saw average passenger waits over a minute in any hour, and the overall average passenger delay for this set of observations was just over half a minute.

Passenger flows rose steeply from a start of just 10 but were 114 in the 09:00 hour, and then remained over 100 per hour until the midnight hour (apart from a slightly lower 98 in the 23:00 hour). The peak flow was 186 in the 18:00 hour. The 02:00 hour only saw one passenger, and there were none at all in the 03:00 and 04:00 hours early on the Saturday morning.

Apart from longer waits in the first three hours by vehicles for passengers, most vehicles tended to wait between one and eight minutes for a fare. This included all observable queueing time, but may have excluded vehicles that waited in the car park.

Friday, October

For the full 24 hours starting at 07:00 on this day, 1,967 passengers left the rank in 1,398 vehicles, again a low occupancy of 1.4. A similar level of 13% of vehicles left without passengers, again in the afternoon. This level of passengers was about 16% less than that observed in June.

4% of people arriving did so when there was no vehicle available for immediate hire. These were restricted to the 18:00 and 19:00 hours, with the worst wait being just four minutes. Over the full set of observations, average passenger delay was just six seconds.

Passenger numbers began at 27 and rose to a peak of 131 in the 09:00 hour, then falling to between 67 and 114 until the 16:00 hour. Flows were then between 94 and 180 in every hour up to the midnight hour. After this, flows dropped to 22, then none until four in the 05:00 and nine in the 06:00. The peak hour was the 19:00 hour.

Vehicle waits for passengers at the main rank area were generally five to 20 minutes, but were longer in the last three hours. Some of the vehicles operating early in the morning arrived and waited some while for their first fares. Again, these figures exclude any time waiting in the feeder areas.

Saturday, June

This Saturday saw some 2,860 passengers leave the rank in 1,604 vehicles, a high occupancy of 1.8 per vehicle. A higher level of 14% of arriving vehicles left without passengers. Again, many of these were late afternoon and early evening.

Similarly to the Friday in June, many hours saw people waiting, with a total of 458, or some 16% arriving when no vehicle was available for immediate hire. In these 24 hours, the longest wait was 12 minutes, but the average passenger delay over all passengers was just half a minute. Only four hours had average passenger delays a minute or more.

Flows were again low at the start, but rose rapidly to some 173 at 10:00. They were then between 205 and 223 in every hour from the 11:00 to the 15:00, then reducing but rising again to another peak of 205 in the 19:00 hour. They then fell, but remaining over 100 until dropping to 60 in the 01:00 and 34 in the 02:00 hour, after which there were no more passengers with just one in the 05:00.

During the busy period, vehicles hardly waited at all for fares, but in less busy times the observed wait for fares ranged from four to eight minutes, but higher in the quietest hours. In the early hours there were some waits by vehicles of up to 39 minutes.

Saturday, October

This day – a full 24 hours of observation – saw 2,389 passengers leave in 1,368 vehicles, a moderate occupancy of 1.7 per vehicle, higher than on the Friday or Thursday. 11% of vehicles left without passengers, mostly around the 16:00 and 17:00 hours and the end of service to the rank. The overall passenger flow was again some 16% below that of the June Saturday. On the October Saturday no passengers ever arrived when there was no vehicle already waiting for them.

Passenger flows rose from seven in the 07:00 hour (first passengers were in the 05:00 hour), and quickly rose to the peak of 230 in the 12:00 hour. Flows were 100 or more in every hour from the 10:00 until the 23:00 hour, though only one other hour (19:00) saw flows over 200. After this flows dropped to 79, 89 and three before the rank became quiet in the 03:00 hour. There were one and four passengers respectively in the 04:00 and 06:00 hours.

Vehicle waiting times for fares at the rank were between seven and 21 minutes, longer than on previous days. They were longer at the start and end of service and generally on this day vehicle maximum waits were longer.

Sunday, June

On the Sunday in June, with observations covering some 22 hours, 1,985 passengers left the rank in 1,279 vehicles, a moderate occupancy of 1.6 per vehicle. 11% of arriving vehicles left without passengers.

During this period, 227 or 11%, of passengers ended up waiting for a vehicle to arrive. People had to wait in most hours from 12:00 to 23:00 plus the 10:00 hour. The longest wait, 20 minutes, was in the 22:00 hour. However, only two hours saw average waits in the hour a minute or more, and again the average wait over all passengers was 35 seconds.

Passenger flows were very low in the first four hours, but rose to 106 in the 10:00 hour and then remained between 100 and 171 in every hour up to the 23:00 when flows dropped to 79, then 48 and then 20 before the rank became quiet in the 02:00 hour.

Vehicle waits in the busy periods were four to eight minutes, but higher in the hours up to 09:00 and in those from 23:00 onwards.

Summary

The station rank is a very busy location, with many flows of over 100 passengers per hour. Although there are people arriving when vehicles are not immediately available, the high volumes overall mean that average delay to passengers across the operation of the rank is low. The June flows appear to be around 15% higher than those in October, which increased levels of waiting, but not to significant levels.

As in previous years, there may be times that it appears there are passengers waiting for vehicles, but often this is 'geometric' delay waiting for vehicles to arrive from the feeder location in the station car park, rather than waiting for vehicles to return to the rank. We have taken care to ensure our record of waiting only covers periods when people are actually waiting for a vehicle to return to the rank, rather than for one to arrive from the feeder location. However, it is also true that the nature of the volumes of demand at the station means that what might otherwise be considered as large numbers having to wait actually are diluted by their proportion being small compared to the high volume of overall departures.

St Andrew's Street

Observations were undertaken from 06:00 on Thursday 16th June 2017 until 03:59 on Monday 19th June 2017, then again from 14:00 on Thursday 12th October 2017 through to 06:59 in the early hours of Sunday morning, 15th October 2017.

Sample observations at Drummer Street suggest that the additional waiting time there for vehicles then moving to St Andrew's Street rank is between three and ten minutes, which needs to be added to the vehicle waiting times quoted below. The longest vehicle wait recorded at Drummer Street was just under 20 minutes, which again would need to be added to the maximum times recorded below. In the sample observation on Thursday at Drummer Street, most vehicles had waited there before proceeding to St Andrew's Street.

Thursday, October

During the 17 hours observed, a total of 665 passengers used some 421 departures from this rank, a moderate occupancy of 1.6 per vehicle. A very small further 5% of vehicles left the rank without passengers.

Just nine passengers arrived to find no vehicle there for immediate hire. The longest waited just five minutes. The waits occurred in the 14:00 and 18:00 hours but neither were a minute or more. Over all passengers, the average passenger delay for this period of observations was just two seconds.

Passenger flows were between 27 and 65 in every hour apart from 04:00 which saw 37 and 05:00 in the early hours of Friday which say just 12. There were no passengers in the 06:00 hour at all. The peak flow was 65 in the 02:00 hour, with the next highest flow at 03:00, then at 18:00, all over 60.

Vehicle waits for fares ranged from two to 27 minutes at the main section of rank – excluding any waits in the feeder which are evaluated separately below. One wait of 35 minutes was observed in the midnight hour.

Friday, June

On the Friday, during a full 24-hour period, a total of 1,168 passengers used this rank, leaving in some 703 vehicles, a moderate occupancy of 1.7 per vehicle. A further 6% of vehicles arriving at this rank left without passengers.

During the course of the observations, 40 people arrived when there was no hackney carriage available for immediate hire. However, the longest wait recorded was four minutes. When shared over all passengers during this full day, the average passenger delay was just five seconds. Of the hours with people waiting, none had average delays over a minute, and only the two off peak hours with delay counted towards any significance of the unmet demand observed.

Passenger flows were 14 or less until the 11:00 hour, after which they gently rose to a peak of 85 in the 17:00 peak commuter hour. They dropped for the next few hours before rising to 103 in the 22:00 hour and the absolute peak of 110 in the 03:00 hour, after which flows dropped, although there were still passengers around in the final 05:00 hour of this period.

Vehicle average waiting times for fares were between three and eight minutes for most of the day. Vehicles did wait longer in the first few hours when passenger numbers were lower. Maximum observed waiting times were never more than 21 minutes for most hours, although again earlier there were vehicles waiting up to 45 minutes for fares. The highest number of vehicles left empty in the 04:00 hour, and also at times when passenger flows were clearly falling (e.g. 19:00 to 21:00 hours).

Friday, October

Within the 24-hour period on Friday 13th 2017 starting at 07:00 a total of 1,244 passengers left this rank in 747 vehicles, a moderate occupancy of 1.7 per vehicle. This was about 7% more than that from the June sample. 4% of arriving vehicles left without passengers. 35 passengers arrived when no vehicle was available for immediate hire.

The longest recorded wait was nine minutes, and the average over all passengers just six seconds. Waiting occurred in the 12:00, 15:00 and 17:00 hours with worst waiting in the 15:00 hour, where the average delay in the hour was just over a minute.

Passenger flows only began in the 08:00 hour, with flows between seven and 29 in the next five hours. Flows were then between 46 and 74 from the 13:00 to the 18:00 hours after which they dropped to between 30 and 34 for the next three hours. From the 22:00 hour on they were higher, starting at 98 and rising to the peak of 133 in the 03:00 hour. There were then 45, six and four passengers in the last three hours.

Vehicle waits for fares at the rank tended to be between three and 19 minutes, dependent on flow levels. When flows were lower, a longest wait for a fare of 34 minutes was recorded. All other were lower than this.

Saturday, June

On the Saturday in June, the full 24-hours of observations saw 1,917 passengers leave the rank in some 992 vehicles, a high occupancy of 1.9 per vehicle. A lower 3% of other vehicles arrived but left without taking passengers.

Some 15% of all passengers arriving did so when there was no vehicle available for immediate hire. People had to wait in every hour from the 10:00 to the 14:00, in the 18:00, 21:00, 22:00, 23:00 and 05:00 hours. Five of these hours saw average passenger waits in that hour over a minute. The worst waiting was in the 23:00 hour. However, when taken in the context of the full operation of the rank on this day, the average overall passenger delay was 34 seconds. The longest a person had to wait that we recorded was 15 minutes.

Morning passenger flows were very low until the 13:00 hour, after which there was a peak of 148 in the 15:00 hour. Flows then fell to between 58 and 93 per hour until rising from the 22:00 hour onwards with the peak of 175 in the 01:00 hour. Flows then dropped back, although remaining over 117 in the 03:00 hour. These are some very high flows of passengers.

Vehicle waits for passengers, excluding any waiting time at the feeder rank, were very low, often no more than a few minutes, with the longest time a vehicle waited being 18 minutes, apart from one vehicle waiting nearly 36 minutes in the 05:00 hour.

Saturday, October

The full 24-hours through to the early hours of Sunday morning saw some 1,500 people leave the rank in 811 vehicles, a high occupancy of 1.8 passengers per vehicle. This flow was about 22% less than that observed in June. Just 3% of arriving vehicles left without passengers. 12 passengers arrived when there were no vehicles available for immediate hire – with the longest waiting five minutes. Overall average passenger delay was just one second. People waited in the 14:00, 16:00, 17:00 and 03:00 hours but no average delay was ever greater than a minute (in fact, none greater than eight seconds).

Passenger flows were no more than 18 in the hours up to the 12:00, apart from there being 32 people in the 11:00 hour. The next three hours saw 70-74 passengers in each hour, after which there were two hours with 100 and 99 respectively. Flows then dropped to a low of 42 in the 20:00 hour, rising again then to the peak of 157 in the 03:00 hour, after which they quickly reduced to just two in the 06:00 hour.

Vehicle waits at the rank itself ranged from four to 22 minutes, although there were some longer times recorded in the first and last hours, and one vehicle was there nearly an hour, but right at the end of the period surveyed.

Sunday, June

Flows on this day were lower, at 1,046 over the 22 hours observed. These people left in 579 vehicles, a high average occupancy of 1.8 per vehicle. A higher level of 8% of vehicles left the area empty. Again, quite a few of these were at lower flow times.

During the Sunday, 48 passengers arrived and found they had to wait for a vehicle to arrive. The longest observed passenger wait was six minutes, with all but two passengers waiting no more than five minutes. People waited in the 11:00, 12:00, 15:00, 17:00 and 21:00 hours, with only one hour having an average passenger greater (and only just) over a minute. The average passenger delay for the site was just seven seconds.

Passenger flows were between three and nine in the first three hours observed, then 16-27 for the next three hours. They then rose with the peak of 138 in the 15:00 hour. They then dropped to between 48 and 64 up to the 22:00 hour then were between 21 and 35 for the last five hours, apart from a higher 57 in the 02:00 hour.

Vehicles tended to wait longer for fares, between eight and 23 minutes, depending on flows of passengers. The longest vehicle wait was nearly 37 minutes, much longer that on other days.

Summary

This rank tends to be quieter overall than the station rank, but operates for most hours whereas the station is linked to rail operations. Though people do arrive when vehicles are not there for immediate hire, waits tend to be short and the average passenger delay is very low. There are less vehicles leaving this rank without passengers. Overall, the service provided here is excellent, and serves those wishing to travel very well.

Market Square

The pair of ranks here were observed from 20:00 on Friday 13th October 2017 through to 02:59, and again from 19:00 on the Saturday to 06:59.

Friday observations

On the Friday, a total of 253 passengers used this rank, leaving in 106 vehicles, a very high occupancy of 2.4 per vehicle. During the observations 10 people arrived when no vehicle was immediately available, but waiting at most three minutes. When shared over the full set of observations this netted out at an average passenger delay of just four seconds.

Flows occurred in all hours observed, but were just two and four in the first two hours. The next three hours saw 24, 16 and 39 people, after which the flows rose to 73 and the peak of 95 in the 02:00 hour. Vehicle wait times for fares varied from three to 17 minutes. There were some vehicles that waited up to half an hour for fares.

Saturday observations

The Saturday saw passenger flows totalling 618 leaving in 261 vehicles, a very high occupancy of 2.4 per vehicle. 8% more vehicles arrived but left without passengers. Flows started at just five in the 20:00 hour and rose to a peak of 147 in the 03:00 hour, then dropping back to six before the area became quiet.

During the observations, seven people arrived when no vehicle was immediately available for hire. However, their longest wait was just two minutes and the average passenger delay for this rank for this set of observations was just one second. Similar vehicle waits of three to 13 minutes occurred, again with a vehicle waiting up to half an hour for a fare in one hour.

Summary

This pair of ranks is well-used although clearly has particular hours when most used. It is clear vehicles are coming here to seek passengers, and that passengers know they can get hackney carriages at this location.

Drummer Street

This rank is mainly a feeder to the St Andrew's Street rank, but its location near to the bus station does mean that some passengers take vehicles waiting here. The location was observed on Thursday 12th October 2017 from 14:00 through to midnight that day. During that period, 99 passengers travelled in 76 vehicles from here, a low occupancy of 1.3 people per vehicle. As expected, a much higher number, some 80% of all arriving, left this location empty and are assumed to proceed to St Andrew's Street.

During the course of observations there was one time when a passenger arrived and found no vehicles waiting here, and had to wait two minutes for a vehicle to arrive. This was in the 19:00 hour. Passenger numbers ranged from five to 21, with the peak in the 20:00 hour. The rank was in fact used by passengers in every hour that we observed.

For those vehicles leaving empty, the average wait of between three and ten minutes has to be added to that at St Andrew's Street to give a true vehicle wait time for fares there.

Downing Street

This new rank was observed from 22:00 on the Friday until 02:59 in the early hours of Saturday, then from 22:00 on the Saturday night until 06:59 on the Sunday morning, in both cases covering the start hours for this location.

Friday observations

On the Friday, the rank was not used until the midnight hour, when 17 people used it. Flows peaked at 26 in the next hour and 14 in the last hour observed. The total of 57 people left this rank in 33 vehicles, a moderate occupancy of 1.7 per vehicle. A fifth of vehicles left the rank empty.

No passenger ever arrived when there was no vehicle available for immediate hire. Average vehicle wait times were seven to 16 minutes, although one vehicle was recorded waiting nearly 40 minutes.

Saturday observations
On the Saturday, the rank first saw usage in the 23:00 hour, with eight passengers. Flows were then between 17 and 32 in the next four hours, with just three in the final hour that there was any activity. In total, the 106 passengers left in 64 vehicles, a moderate occupancy of 1.7 per vehicle. A higher 26% left the area without passengers.

The midnight hour did see two people waiting up to four minutes for a vehicle to arrive. Vehicles tended to wait six to 13 minutes to gain fares.

Summary
This rank is well-used given its new status.

Sidney Street, Sussex Street (Kuda)
This rank was observed on all three October nights. On the Thursday, it was observed from midnight until 02:59 in the early hours of Friday. On Friday observed hours were longer, from 19:00 until 02:59, and on the Saturday they covered 19:00 until 06:59.

Thursday observations
The three observed hours in the early hours of Friday saw 19 passengers leave this location in eight vehicles, a very high average occupancy of 2.4. A further 27% of arriving vehicles left without passengers.

There were two people in the midnight hour, six in the 01:00 and 11 in the 02:00 hour. One vehicle had waited for a fare some 33 minutes whilst the others had waited between two and seven minutes.

Friday observations
On the Friday, a higher number of passengers, 111, used the rank and left in 54 vehicles. This was a relatively high occupancy of 2.1 per vehicle. 32% left the rank without taking passengers. No passenger ever arrived without a vehicle being there for them to hire immediately.

Passenger numbers were four, ten and seven in the first three hours (with none in the 19:00 hour). They then rose to 16 and were 25 or 24 in each of the next three hours. Vehicle waits were between seven and 16 minutes, apart from one vehicle that waited 47 minutes having arrived in the 19:00 hour.

Saturday observations

The Saturday observations, into the early hours of Sunday, saw a higher level of 167, with the rank operating till the 04:00 hour. These left the area in 75 vehicles, a relatively high occupancy again of 2.2 per vehicle. A similar level of 27% of vehicles left without passengers. One passenger arrived in the midnight hour and ended up with a wait of 18 minutes for a vehicle. On the vehicle side, typical waits for a fare were one to 14 minutes, with the longest vehicle wait recorded of 24 minutes.

Summary

This rank is well-used on most nights, although flows are lower than at other locations, but vehicles appear to find it worthwhile pausing here to gain customers.

Bridge Street

Observations here were undertaken from 18:00 on Saturday 14th October through to 06:59 in the early hours of Sunday morning, covering the operating hours of this location. During our observations, 41 passengers used 21 vehicles to leave this rank, a relatively high occupancy of two per vehicle. A further 9% of vehicles arriving left the area without passengers. Only the 18:00, 19:00, midnight, 01:00 and 02:00 hours saw passengers. Levels ranged from three to 12. The 18:00 hour saw three people waiting up to two minutes, but all other passengers arrived when vehicles were already there. Very low vehicle wait times, never more than three minutes, suggest the potential that these vehicles were in fact booked rather than waiting at the rank, although it may just be people take advantage of any vehicle that arrives. Overall demand, however, is very low.

Parkside

This rank was observed on Saturday 14th October 2017 from 08:00 through to midnight that night. During the course of the observations, a total of 29 passengers used the rank. They left in 19 vehicles, a moderate occupancy of 1.5 per vehicle. A further 65% of vehicles arriving left without passengers.

There were never more than eight passengers from this location during a day, with many hours with just one passenger. However, vehicle waiting times for fares tended to be low perhaps suggesting booked vehicles are operating to this location, which would fit with it being the long distance coach stop as well as a rank with very low flows. There were no vehicles in hours without passengers which supports this view.

During the course of observations, seven people arrived when no vehicles were there for immediate hire, although the longest wait for a vehicle was five minutes, and often less, supporting further the idea of people phoning in for vehicles as they approached.

St Andrew's Street, Church rank

This location was observed on Friday 13th October from 22:00 to 02:59 and again on Saturday 14th October from 19:00 until 06:59. During the first set of observations, it was not used at all, either by passengers or vehicles.

However, on the Saturday night, the rank was used by eight passengers, leaving in four vehicles, a relatively high occupancy of two per vehicle. Most of the active hours (20:00, 21:00, 02:00 and 03:00) only saw one passenger, but the final hour active for passengers, 03:00, did see five. In all cases vehicles had waited for passengers, between one and seven minutes, with some cases of vehicles leaving without taking passengers (actually 56% of those arriving). Demand is not high, but people are clearly taking advantage of vehicles waiting here.

Corn Exchange Street

This rank was observed on the Friday from 20:00 through to 02:59, during which just one person and two vehicles used it. On the Saturday, observations from 19:00 through to 05:59 saw two vehicles wait briefly but no passengers used the location. It is possible this location is still developing given that it has not been available for very long.

Sidney Street, Boots rank

This location was observed on one evening, but no activity by passengers or vehicles was identified.

Activity levels of hackney carriage fleet

Information was gathered during the main survey of the level of vehicles active on the Saturday of the October survey. Over 1,000 different vehicle observations were obtained during five separate 2-hour sample periods near to the two main active rank locations. A small number were discounted as being private hire vehicles passing by.

During the course of our sample observations, we observed 74% of the current hackney carriage fleet, a high proportion, but not excessive. The proportion of the fleet seen near either of the two main ranks was, however, much lower. The figures quoted are the proportion of the 74% seen at the two locations. At St Andrew's Street, we saw 23% of the fleet in the afternoon period, 41% early evening and 44% in the period just after midnight. For the station, proportions were more consistent with 30% in the late afternoon and 34% in the late evening.

In terms of vehicles focussing on one location, of the observations, 10% of vehicles were only observed at the station, 30% only at St Andrew's Street, and the remaining 60% were observed passing both locations. If this proportion applies to the full fleet, this suggests no more than 24 vehicles only service the station, whilst there are no more than 72 not able to service that location.

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4 General public views

It is very important that the views of people within the area are obtained about the service provided by hackney carriage and private hire. A key element which these surveys seek to discover is specifically if people have given up waiting for hackney carriages at ranks (the most readily available measure of latent demand). However, the opportunity is also taken with these surveys to identify the overall usage and views of hackney carriage and private hire vehicles within the study area, and to give chance for people to identify current issues and factors which may encourage them to use licensed vehicles more.

Such surveys can also be key in identifying variation of demand for licensed vehicles across an area, particularly if there are significant areas of potential demand without ranks, albeit in the context that many areas do not have places apart from their central area with sufficient demand to justify hackney carriages waiting at ranks.

These surveys tend to be undertaken during the daytime period when more people are available, and when survey staff safety can be guaranteed. Further, interviews with groups of people or with those affected by alcohol consumption may not necessarily provide accurate responses, despite the potential value in speaking with people more likely to use hackney carriages at times of higher demand and then more likely unmet demand. Where possible, extension of interviews to the early evening may capture some of this group, as well as some studies where careful choice of night samples can be undertaken.

Our basic methodology requires a sample size of at least 200 to ensure stable responses. Trained and experienced interviewers are also important as this ensures respondents are guided through the questions carefully and consistently. A minimum sample of 50 interviews is generally possible by a trained interviewer in a day meaning that sample sizes are best incremented by 50, usually if there is targeting of a specific area or group (eg of students, or a sub-centre), although conclusions from these separate samples can only be indicative taken alone.

It is normal practice to compare the resulting gender and age structure to the latest available local and national census proportions to identify if the sample has become biased in any way.

More recently, general public views have been enlisted from the use of council citizens' panels although the issue with these is that return numbers cannot be guaranteed. The other issue is that the structure of the sample responding cannot be guaranteed either, and it is also true that those on the panel have chosen to be there such that they may tend to be people willing to have stronger opinions than the general public randomly approached.

Finally, some recent surveys have placed an electronic copy of the questionnaire on their web site to allow interested persons to respond, although again there needs to be an element of care with such results as people choosing to take part may have a vested interest.

For this survey, some 276 people were interviewed in the streets of Cambridge. Some 18% were interviewed near to the railway station, with the remainder in the shopping streets of the City Centre. Detailed results are included in Appendix 7.

They were asked if they had used a licensed vehicle in the Cambridge City area in the last three months. In total, 74% said they had. However, the city centre value was much higher at 87%, with just 14% of those interviewed near the station saying they had used a licensed vehicle. This may be affected by it being difficult to intercept passengers actually using hackney carriages or other licensed vehicles at the station due to how close the rank and pick-up point are to the exit, and the need to maintain safe exit from the station when undertaking interviews.

All were asked how often they used a licensed vehicle in the Cambridge area. 75% provided frequencies. When weighted by the level of frequency, the city centre sample made 2.8 licensed vehicle trips per person per month. The station value was much lower at 0.6, with the overall value for the survey being 2.4 trips per month. When people were asked in regard to frequency of hackney carriage trips, these values reduced to 1.3 for the city centre, 0.5 for the station and 1.2 overall. Interestingly, this suggests that some 83% of station trips made are most likely by hackney carriage. The value for the city centre sample suggests 46% using hackney carriages.

People told us how they normally obtained a licensed vehicle in the Cambridge City area. Consistently, 37% of respondents said from a rank. This is in the same order of magnitude as the above proportion based on levels of usage. This is also a very high proportion compared to many other locations we have recently surveyed. A further 4% said they hailed. Overall 47% used a telephone, 6% a direct free phone, 2% booked on line, 1% used a mobile and just a further 1% used an app. However, when asked, 71% of those using an app said it was a general computer search rather than a specific 'app'.

Just nine different companies were named by those saying who they used when they booked licensed vehicles by phone. 54% of respondents named at least one company. There were 15% of those responding who provided three company names, and a further 19% provided two names.

From the total number of responses, the top company gained 51% of all mentions. Their proportion at the station was 86% of all mentions for those interviewed there. The next two largest companies obtained 21% and 19% overall each. There were two companies with 3%, and the app-based named obtained 2%.

There were three other companies named, which were either out of area or unknown operators, but the latter two only obtained one mention each, and the out of town operator just 1% of all mentions. Overall, this suggests a moderately competitive environment, but dominated by two medium and one very large operator.

All those at the station responding said they could always get a licensed vehicle of a kind that suited them; whilst for the city centre sample this value was 94%, very high. The remaining respondents mainly were unable to get wheel chair accessible vehicles, or suitable vehicles (not specified) when they phoned. Just 1% of all respondents to this question said they could not get wheel chair accessible vehicles they needed at a rank, but gave no further information.

In overall terms of the type of licensed vehicle people would choose in Cambridge, 69% said their main concern was getting a vehicle and that they would choose the first available vehicle. 19% said they would choose a saloon style vehicle. 7% would choose an electric powered saloon, 4% an electric powered wheel chair accessible vehicle and just 1% a wheel chair accessible vehicle of any power type.

In terms of ranks people were aware of, some 22 different names were provided. These represented six active ranks and two less active ranks. There were also minor mentions (mainly by one person) of locations which could not be identified. Taking the two given names for St Andrew's Street, 43% of the total responses related to that rank, followed by 27% for the railway station rank. 16% were aware of Drummer Street. Market Square, Sidney Street, Bridge Street, John Lewis and Parkside were all mentioned, but only by very small numbers, mainly with just one mention.

73% of those responding said that they used the ranks which they had mentioned, a very high level of actual stated usage.

Whilst there were some 56 separate mentions of where people would like to see ranks, these referred to just 13 locations, and were made by 38 different respondents. 58% of those giving ranks named just one place. The top place people wanted a rank, with 27% of the overall responses, was at Addenbrooke's Hospital.

When added together, 29% said a rank in the Market area or Market Square – which is interesting as an active rank is there, but at night only, given that the area is otherwise not available to vehicles. 20% asked for a rank in Sidney Street (where again there are two night time ranks, at least one of which we found to be active). Several active locations were mentioned by small numbers, including asking for ranks at the station, St Andrews's Street and Corn Exchange. This suggests a potential need for better signing of ranks, and clarity about when they are available.

11% of those interviewed told us the problems they had with the hackney carriage service. Of this 11%, 10% said they had two problems and one person said they had three. The top issue was delay getting a taxi (49%) followed by 17% saying driver issues and 14% cleanliness. There were two people who said there were not enough dog-friendly vehicles, two complaining about circuitous routes being used and one who for whom their hackney carriage had not turned up (but this suggests it may have been a booking in any event). Overall, this level of overall problems is not significant.

As is usual, a higher number of people told us about matters that might encourage them to use taxis, or use them more often. Some 31% of respondents gave us at least one factor that might cause them to use hackney carriages, or use them more. Of these, 42% provided two factors. The top factor given was 26% of mentions for an 'app' they could use to get a hackney carriage in the area. Closely second were more hackney carriages that could be accessed by phone, equal with those saying if they were cheaper. Better vehicles obtained 16% of mentions, better drivers 7% and more rank based hackney carriages just 6%. 2% said they would use them more were they easier to get by phone, and 2% said they would use them more were the vehicles electric (these two items came under the 'other' respondent provided category, as did those saying 'cheaper').

A very high 95% of those interviewed said they did not have, nor knew anyone who did have, any disability that meant they needed an adapted vehicle when travelling by licensed vehicle. The remaining 5% said they needed a wheel chair accessible vehicle. 86% of these did not mind if the vehicle was rear or side loading, whilst one person (the remaining 14%) said they preferred rear loading.

There were no respondents saying they preferred a side loading vehicle, although this level of response was not really significant.

Of those responding, 57% said they did not know if people with disabilities in Cambridge got a good service from hackney carriages and their drivers or not. Taking the remaining response, 68% said they thought people did get a good service. 28% felt they did not, with 4% responding 'other' but not saying what they meant by that response.

For this survey, people told us if they had ever given up waiting at ranks for a hackney carriage. One response was not a hackney carriage rank location and was removed from the results. The other results were split between those saying they had given up at the station and those who had given up at other locations. One person told us two locations where they had given up waiting for a hackney carriage. The resulting observable latent demand value was 1.05 for council ranks only, 1.02 for the station rank alone, and 1.07 for tests covering all observed ranks including the station. These calculations assume that all those not giving any answer had never given up waiting.

Overall 62% had regular access to a car, with the value lower at the station (45%). We interviewed about 6% more males than in the census value for the area, and the 31-55 age group was overrepresented by 14% at the expense of the other two groups, with 11% less of the lower age bracket and 3% less of the older bracket. This should not have unduly affected our responses. Further, the internal checks noted above suggest that the information received is consistent through our interviews with people.

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5 Key stakeholder consultation

The following key stakeholders were contacted in line with the recommendations of the BPG:

- Supermarkets
- Hotels
- Pubwatch / individual pubs / night clubs
- Other entertainment venues
- Restaurants
- Hospitals
- Police
- Disability representatives
- Rail operators
- Other council contacts within all relevant local councils

Comments received have been aggregated below to provide an overall appreciation of the situation at the time of this survey. In some cases there are very specific comments from one stakeholder but we have tried to maintain their confidentiality as far as is possible. The comments provided in the remainder of this Chapter are the views of those consulted, and not that of the authors of this report.

Our information was obtained by telephone, email, letter or face to face meeting as appropriate. The list contacted includes those suggested by the Council, those drawn from previous similar surveys, and from general internet trawls for information. Our target stakeholders are as far as possible drawn from across the entire licensing area to ensure the review covers the full area and not just specific parts or areas.

For the sake of clarity, we cover key stakeholders from the public side separately to those from the licensed vehicle trade element, whose views are summarized separately in the following Chapter.

Where the statistical analyses in Chapter 2 demonstrate low levels of wheelchair accessible vehicle (WAV) provision, an increased emphasis will be given to the issue in terms of the focus of stakeholders but also in specific efforts to contact disabled users and their representatives.

Supermarkets

Three supermarkets told us their customers did use licensed vehicles. Two said staff would phone for vehicles if asked, whereas the third had a free phone provided to an operator, but staff would also phone if people asked them to. None were aware of ranks, and none had ever received complaints about the service provided.

However, much of this is effectively private hire style without ranks being there. One other supermarket said they were not able to provide comment at all.

Hotels

Two hotels could not be contacted, but all four of those who responded said their customers did use licensed vehicles. Two said staff would phone for vehicles when asked and two said people usually made their own arrangements, or that staff would phone were they asked. Two were aware of the station rank, and the other two when asked about ranks replied with the name of the major company in the area. None had received any complaints about the service provided.

Public houses

Six pubs told us their customers used licensed vehicles. Two said staff would make a phone call if patrons asked. One said most customers made their own arrangements. The remaining three said customers often made their own arrangements, but that if asked pub staff would phone for a vehicle when asked. Four were aware of the St Andrews Street rank with one aware of a booking office. None had received any complaints about the service provided. However, one location said they had issues with illegal parking late at night, which they felt was by vehicles from outside the area, or by private hire vehicles claiming they were waiting for bookings. Three other locations had either closed or proved impossible to contact, whilst four refused to provide any information.

Night clubs

Four night clubs had patrons who did use licensed vehicles. Three said people made their own arrangements if they needed licensed vehicles. One said people would go over to the Sidney Street rank adjacent to them. One other location was aware of Sidney Street, whilst two were aware of the St Andrew's Street rank. Two had not received any complaints. However, one felt drivers often had inappropriate behaviour towards customers, and another said there were often delays in people being picked up. Three other clubs either refused to take part or did not respond in the time available.

Restaurants

One restaurant advised us that their customers did use licensed vehicles, which people usually phoned for themselves, or obtained from the Market Square rank. They were not aware of any issues with usage of the service. Three others had no comment or were not contactable.

Hospitals

No comment was made by the hospitals in the area.

Police

The principal issue which the police had was over-ranking of the Drummer Street location which they told us happens on a near-daily basis. One representative said there had been an arrangement for excess hackney carriages to wait on Emmanuel Road, which had been removed when road works took place, although it is not clear what basis this provision was ever made on.

Disability

No comment was provided by any disability representatives.

Rail and other transport operators

Neither the rail station operator or other local transport operators had any comment.

Appendix 8 provides nationally available information regarding passenger throughput at the station. This shows that Cambridge is now the 36th largest used station on the English, Welsh and Scottish rail network, with some 11.4m trips per year entries and exits for the last available year, ending March 2017. Growth since the last survey is around 25%.

Other Council contacts

The City Council equality officer was not aware of any issues, either positive or negative, with usage of the licensed vehicle service, but also sought comment from another officer, and the Equality and Diversity network the Council has. They thought there had been supplementary spaces provided on Emmanuel Road nearby which were removed leading to the over-ranking at Drummer Street worsening.

Input was received from those providing marshals to busy ranks – with a general feeling reported that Cambridge has ample taxis available. Attention is needed to infrastructure and the facilities around ranking and enforcement. They felt that hackney carriages were most likely to work with the relevant authorities and would also advise such authorities when they felt others were not being compliant. The main concern was how South Cambridgeshire vehicle numbers were being taken into account as they suggested such vehicles caused more issues that were less easy to solve.

Listing of all key stakeholders contacted is provided in Appendix 9.

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6 Trade stakeholder views

The BPG encourages all studies to include 'all those involved in the trade'. There are a number of different ways felt to be valid in meeting this requirement, partly dependent on what the licensing authority feel is reasonable and possible given the specifics of those involved in the trade in their area.

The most direct and least costly route is to obtain comment from trade representatives. This can be undertaken by email, phone call or face to face meeting by the consultant undertaking the study. In some cases to ensure validity of the work being undertaken it may be best for the consultation to occur after the main work has been undertaken. This avoids anyone being able to claim that the survey work was influenced by any change in behavior.

Most current studies tend to issue a letter and questionnaire to all hackney carriage and private hire owners, drivers and operators. This is best issued by the council on behalf of the independent consultant. Usual return is now using an on-line form of the questionnaire, with the option of postal return still being provided, albeit in some cases without use of a freepost return. Returns can be encouraged by email or direct contact via representatives. Some authorities cover private hire by issuing the letter and questionnaire to operators seeking they pass them on when drivers book on or off, or via vehicle data head communications.

In all cases, we believe it is essential we document the method used clearly and measure response levels. For this survey, a copy of the letter and questionnaire were passed to the Council who issued them to 675 dual licence drivers, 15 hackney carriage only drivers and five private hire only drivers in mid-July 2017. A six-week response time was given, closing on 1 September 2017. A total of 151 responses were received. This is a very high 22% response rate, excellent for this kind of survey.

A meeting was held with all drivers towards the beginning of the study to encourage them to respond to the questionnaire and to allow them to ask further questions or provide further inputs. The invitation was sent to all those usually attending the trade meetings with the Council. A further invitation for comment was sent to a wider group including most private hire operators to encourage the best possible response from all involved in the trade.

Those present at the meeting were grateful for the encouragement and explanation of the importance of the driver survey. Two representatives offered to have copies of the letter for issue in case any did not arrive by post, or to reiterate their importance. They also shared copies of the link to the on-line survey both physically and by email.

A representative at the meeting also asked that rear loading WAV be added into the considerations regarding how well people with disabilities had their needs met, although we understand this request has been taken on board in the mean time.

One driver provided a direct written response apart from the formal questionnaire. Their main comment was need for further feeder spaces for St Andrews Street rank. They also told us they tried to use the new rank in Downing Street as well as the established rank along St Andrew's Street near the Baptist Church but were prevented from doing so due to other vehicles being there, and no action being taken to prevent their illegal use of the spaces. They were also opposed to the supplementary station permit situation telling us this meant those plates having a high black-market value.

The information received was checked to identify any duplicate entries, of which there did not appear to be any, although there were two duplicated badge numbers, which were assumed to be an error and the returns counted as legitimate on inspection.

All told us the kinds of vehicle they drove. 90% said they drove both hackney carriage and private hire, with 9% saying just hackney carriage and the balance of 1% just private hire.

Of those responding, 87% said they had Cambridge City dual licences, 9% had just a hackney carriage license and 1% had both a Cambridge City dual and a hackney carriage only license. One person said they had a South Cambridgeshire driver license whilst two others (1%) said they had both Cambridge City dual and a South Cambridgeshire drivers' license. However, when asked directly if they had a South Cambridgeshire drivers' license, 21% said they did, more than the numbers in the previous question.

On average, respondents had 12 years' service in the Cambridge city licensed vehicle trade, although quoted years ranged from one to 45.

The most frequently worked number of days was six (31%) but very closely followed by five days (30%) and seven days (26%). The only other significant number of days worked was four (10%) with 2% saying two days and 1% saying three. In terms of hours, the average was 47, higher than in many other areas and therefore above average.

A moderate number told us the issues that affected their choice of shift, some giving more than one reason. From all the responses, the most frequent response, with 32%, was avoiding heavy traffic and rush hours. 26% said they worked at busy times of demand, with 22% saying they worked around family commitments.

7% simply said they worked when they preferred to but did not say further why. 6% said their hours were impacted by sharing the vehicle they drove. 3% said 'other', 2% said they worked when they had commitments and 1% said they worked sociable hours only. Just 2% of responses were that they avoided awkward customers.

79% said they owned their own vehicle whilst 16% said someone else also drove their vehicle.

68% said they worked on radio circuits, with 91% of these on one company circuit. The remaining 9% worked cross three other companies.

In terms of ranks served, 12 locations were named, with further colloquial names used. There were three other names used for St Andrews Street, two for Drummer Street. 2% of responses said 'all but the station', 8% simply said 'all' and 13% said 'town centre'. This suggests a good knowledge and service of most ranks in the area by drivers, not always the case, and certainly an encouraging picture.

Most said their most frequent way of getting fares was from ranks, with 62% of responses saying this. 23% said phone bookings, with 6% saying hailing. 4% said from an 'app' whilst 4% said from contracts with private companies, with a further 1% saying from school contracts. This suggests the area does have a high focus on hackney carriage style usage of licensed vehicles, rather than the more usual dominance by phone bookings.

88% of those responding said they thought the limit on vehicle numbers should remain.

A fair number responded matters that benefitted the public from having a limit on vehicle numbers. Of all the responses, 48% were that it reduced pollution and congestion. 19% said it reduced over-ranking, 13% said it reduced the public safety issues of having tired drivers, whilst 11% said they believed it meant cars were always available at ranks. 9% felt it had a positive impact on the ability to keep vehicles clean, safe and well-maintained.

The question regarding trade group allegiance was not answered by sufficient respondents to give any meaningful answers.

The quoted periods worked were reviewed. Most focussed on the 1300/2000 shift period, with between four and six per cent of the periods worked being in this period, compared to one to four per cent for the overnight session, and two to four per cent for the morning period.

From this analysis, the day with most vehicles operating was Saturday, followed by Thursday and Friday. Sunday saw the least drivers saying they worked.

A trade representative made the point that there tended to be a focus of WAV style vehicles servicing the city centre, with most saloons tending to service the station rank, given they have permits for that location. This is backed up by our observations, where we saw 78-80% of vehicles near St Andrew's Street were WAV compared to the 65% in the overall fleet. The representative was concerned about passengers who found using WAV difficult and believed they were more common than those needing the service of WAV.

7 Evaluation of unmet demand and its significance

It is first important to define our specific view about what constitutes unmet demand. Our definition is when a person turns up at a hackney carriage rank and finds there is no vehicle there available for immediate hire. This normally leads to a queue of people building up, some of who may walk off (taken to be latent demand), whilst others will wait till a vehicle collects them. Later passengers may well arrive when there are vehicles there, but because of the queue will not obtain a vehicle immediately.

There are other instances where queues of passengers can be observed at hackney carriage ranks. This can occur when the level of demand is such that it takes longer for vehicles to move up to waiting passengers than passengers can board and move away. This often occurs at railway stations, but can also occur at other ranks where high levels of passenger arrivals occur. We do not consider this is unmet demand, but geometric delay and although we note this, it is not counted towards unmet demand being significant.

The industry standard index of the significance of unmet demand (ISUD) was initiated at the time of the introduction of section 16 of the 1985 Transport Act as a numeric and consistent way of evaluating unmet demand and its significance. The ISUD methodology was initially developed by a university and then adopted by one of the leading consultant groups undertaking the surveys made necessary to enable authorities to retain their limit on hackney carriage vehicle numbers. The index has been developed and deepened over time to take into account various court challenges. It has now become accepted as the industry standard test of if identified unmet demand is significant.

The index is a statistical guide derived to evaluate if observed unmet demand is in fact significant. However, its basis is that early tests using first principles identified based on a moderate sample suggested that the level of index of 80 was the cut-off above which the index was in fact significant, and that unmet demand therefore was such that action was needed in terms of additional issue of plates to reduce the demand below this level, or a complete change of policy if it was felt appropriate. This level has been accepted as part of the industry standard. However, the index is not a strict determinant and care is needed in providing the input samples as well as interpreting the result provided. However, the index has various components which can also be used to understand what is happening in the rank-based and overall licensed vehicle market.

For clarification, unmet demand almost certainly exists in each and every areas where hackney carriages operate. What is important from the point of view of policies limiting vehicle numbers is if the overall level of unmet demand identified can be counted as significant. The rule of thumb, accepted as an industry standard, is that a value below 80 means there is unmet demand, but it is not significant. A value of 80 or more means the index has identified unmet demand, and that it is significant to the degree that consideration should be given to at least increasing the current level of the limit, if not revising the policy per se. However, none of this is statutory or fixed and despite the apparent preciseness of the index and the cut-off level, final judgement remains with the committee who are required to be certain there is no unmet demand which is significant when they retain a limit policy.

ISUD draws from several different parts of the study data. Each separate component of the index is designed to capture a part of the operation of the demand for hackney carriages and reflect this numerically. Whilst the principal inputs are from the rank surveys, the measure of latent demand comes from the public on-street surveys, and any final decision about if identified unmet demand is significant, or in fact about the value of continuing the current policy of restricting vehicle numbers, must be taken fully in the context of a careful balance of all the evidence gathered during the survey process.

The present ISUD calculation has two components which both could be zero. In the case that either are zero, the overall index result is zero, which means they clearly demonstrate there is no unmet demand which is significant, even if other values are high. This does not deny unmet demand, just makes it clear that the level cannot be counted as significant under the ISUD definition of significance of unmet demand.

The first component which can be zero is the proportion of daytime hours where people are observed to have to wait for a hackney carriage to arrive. The level of wait used is ANY average wait at all within any hour. The industry definition of these hours varies, the main index user counts from 10:00 to 18:00 (i.e. eight hours ending at 17:59). The present index is clear that unmet demand cannot be significant if there are no such hours. The only rider on this component is that the sample of hours collected must include a fair element of such hours, and that if the value is non-zero, review of the potential effect of a wider sample needs to be considered.

The other component which could be zero is the test identifying the proportion of passengers which are travelling in any hour when the average passenger wait in that hour is greater than one minute.

If both of these components are non-zero, then the remaining components of the index come into play. These are the peakiness factor, the seasonality factor, average passenger delay, and the latent demand factor.

Average passenger delay is the total amount of time waited by all passengers in the sample, divided by the total number of passengers observed who entered hackney carriages.

The seasonality factor allows for the undertaking of rank survey work in periods which are not typical, although guidance is that such periods should normally be avoided if possible particularly as the impact of seasons may not just be on the level of passenger demand, but may also impact on the level of supply. This is particularly true in regard to if surveys are undertaken when schools are active or not.

Periods when schools are not active can lead to more hackney carriage vehicles being available whilst they are not required for school contract work. Such periods can also reduce hackney carriage demand with people away on holiday from the area. Generally, use of hackney carriages is higher in December in the run-up to Christmas, but much lower in January, February and the parts of July and August when more people are likely to be on holiday. The factor tends to range from 0.8 for December to 1.2 for January / February.

There can be special cases where summer demand needs to be covered, although high peaks for tourist traffic use of hackney carriages tend not to be so dominant at the current time, apart from in a few key tourist authorities.

The peakiness factor is generally either 1 (level demand generally) or 0.5 (demand has a high peak at one point during the week). This is used to allow for the difficulty of any transport system being able to meet high levels of peaking. It is rarely possible or practicable for example for any public transport system, or any road capacity, to be provided to cover a few hours a week.

The latent demand factor was added following a court case. It comes from asking people in the on-street questionnaires if they have ever given up waiting for a hackney carriage at a rank in any part of the area. This factor generally only affects the level of the index as it only ranges from 1.0 (no-one has given up) to 2.0 (everyone says they have). It is also important to check that people are quoting legitimate hackney carriage rank waits as some, despite careful questioning, quote giving up waiting at home, which must be for a private hire vehicle (even if in hackney carriage guise as there are few private homes with taxi ranks outside).

The ISUD index is the result of multiplying each of the components together and benchmarking this against the cut-off value of 80. Changes in the individual components of the index can also be illustrative. For example, the growth of daytime hour queueing can be an earlier sign of unmet demand developing than might be apparent from the proportion of people experiencing a queue particularly as the former element is based on any wait and not just that averaging over a minute. The change to a peaky demand profile can tend towards reducing the potential for unmet demand to be significant.

Finally, any ISUD value must be interpreted in the light of the sample used to feed it, as well as completely in the context of all other information gathered. Generally, the guide of the index will tend not to be overturned in regard to significant unmet demand being identified, but this cannot be assumed to be the case – the index is a guide and a part of the evidence.

The latent demand factor taken from the on-street interviews for the full survey is 1.07. When focussed only on those giving up at the station, the value for the station itself is 1.02. For council ranks only, therefore excluding the station, the value is then reduced to 1.05. This latter value is the one which should be used to test council only rank performance.

For this survey, inspection of the overall profile of demand suggests that there are a number of peaks at different times, such that demand for the area cannot be considered to be peaky at this time. This has the effect of meaning the overall index of significance of unmet demand remains at the calculated level rather than being reduced by the influence of issues related to having to meet a key peak in demand.

Data was collected in both June and October at the two main ranks. However, the station rank is a private rank, and were unmet demand here to be found to be contributing to the significance of the overall unmet demand, this could not be counted towards the need for extra plates as the Council cannot influence the extra requirements which reduce supply at that location.

We undertook a test using the industry standard ISUD calculation making use of all available information from all ranks surveyed. This is a harsh test, not taking account of the focus of the June surveys on the two key ranks, nor excluding the station impact. For this data set, the overall average passenger delay was 0.267 minutes. 29.6% of observed off peak hours saw delay of any size and 9.3% of all passengers travelled in hours when there was a minute average delay or more in that specific hour.

The result of this calculation identified the ISUD factor to be 78.3. This is a high level of unmet demand, but is short of the cut-off level of 80 at which point industry standard guidance would suggest that the observed unmet demand was significant. Hence the overall conclusion from this is that there is currently no unmet demand for hackney carriages in the Cambridge City licensing area which is significant. This implies the current limit policy can be retained without any need to issue any further licences.

We would also point out that the results of the October survey alone, for all ranks including the station provided an ISUD factor of 1.18; excluding the station increased this value to 2.4 since the service provided to the station tends to be much better than that provided to the other ranks when considered via the ISUD index. The structure of our October survey was designed to be more robust and a better overall test of the level of significance of unmet demand.

The June survey, which we believe to have been on a very busy weekend influenced by one specific event related to the University, would have suggested there was unmet demand which was significant. However, this survey only covered the two busiest ranks and was undertaken as a specific additional test, and could not be realistically seen as a true average reflection of overall performance. Were a true ISUD calculation to be undertaken using that data, there would be a need to add in various balancing factors which would tend to reduce the index calculated below the cut-off level. We believe it shows that there are times when current demand can put severe pressure on provision of hackney carriage service, but that when taken in context, this cannot be taken to imply need for more vehicle provision. It does however give the possibility that some people might feel there are not enough hackney carriages at times.

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8 Accessibility and Air Quality Review

The main demand survey was supplemented by the need to review, consider and take forward a balanced view regarding two potentially conflicting and often externally applied pressures on the current licensed vehicle provision in Cambridge City at this time. These cover accessibility and air quality requirements and concerns.

On the accessibility side, the Law Commission review concluded that councils should have a statutory duty to undertake reviews of accessibility of the licensed vehicle fleet on the same frequency that demand surveys were undertaken. The background to this is various research and canvassing which led to the Equality Act – although much of this Acts' impact on private hire and hackney carriage has never been fully put in place, and much of which has been put in place has been carried out 'permissively' rather than in a strict enforceable manner.

The aim to have a licensed vehicle fleet which is as accessible as possible to all that need its services is undisputed. However, various bodies have also long grappled with the various competing demand this implies. At one point, the Government planned that all hackney carriage vehicles would be fully wheel chair accessible. However, concerns about what 'fully wheel chair accessible' actually meant compared to what vehicles could practically deliver meant this direction was abandoned. Plans to consult on what this might constitute in general terms were also never taken forward.

Where there have been moves forward, particularly with implementing Sections 165 and 167, the option of a mandatory application was also not taken forward, instead with legislation put in place 'permitting' local authorities to implement lists that apply the Act to those on the list. Whilst this has the benefit of allowing local decisions about local need, it also implies every licensing authority might make subtly different decisions about the specific way forward, leading to potential public misunderstanding and confusion, particularly if they travelled in more than one licensing area, or worst, travelled in one area that received impact from several licensing areas (as is potentially the case for Cambridge City).

Air quality issues have similar conundrum implications for licensed vehicles. Legal action has meant the Government has very short lead times on getting change in this arena. Rightly or wrongly, the licensed vehicle fleet, and particularly the hackney carriage element of this, have been seen as good opportunities to improve air quality in key central areas where they often focus their operations. However, hackney carriage fleets have over decades focussed on use of diesel based vehicles to achieve operational and financial benefits, which are now ironically seen as the worst offenders.

A key issue here is that the short, often potentially imposed, lead times are contrary to an industry mainly provided by private investment – often focussing on high investment in vehicles over long periods. This is even more so the case if an authority requires wheel chair accessible vehicles which tend to have higher initial costs, and often higher ongoing running costs, than saloon style vehicles which are rarely much other than private cars used as licensed vehicles.

The ULEV taxi scheme feasibility study

This study, funded by national Government alongside several other areas, was for Cambridge City, published in March 2016. It followed on from the centre of Cambridge becoming an Air Quality Management Area in 2004, and a study of 2012 that found 27.4% of traffic on King Street was 'taxis' (not defined if this is just hackney carriage or both hackney carriage and private hire). This is not surprising as this is the only 24-hour route out from the main St Andrew's Street all-day rank. The 2012 study also found Euro 2 – 4 diesel taxis were two and a half times as polluting as the typical diesel car at that time.

The ULEV study provided practical review of the potential options, seeing that the present hackney carriage age limit was a positive assistance to the speed of impact of any ULEV targets, and also noting that the proposed revised access system to the City Centre, using ANPR rather than bollards, was also a positive tool that would help focus ULEV hackney carriages on that area. However, the issue of the grandfather rights for saloon vehicles was seen as a potential negative.

In the period between June and August 2016, the bones of the "Encouraging the shift to low emission taxis" strategy was drawn together. This was discussed at the licensing meeting on 17 October 2016, and points agreed subject to receiving funding from the Government. Full details of the proposals were included in the current Hackney Carriage and Private Hire Policy, adopted that day.

The City declared an Air Quality Management Area in 2004, with an Air Quality Action Plan first adopted in 2005 and a more comprehensive version also adopted in 2010. A new version is in preparation to cover 2015-2025 and includes plans to transform the taxi fleet into a low emission fleet leading to a significant reduction in emissions and a significant improvement in air quality.

Present minimum age limits and Euro standards of engines will be maintained along with new policy incentives to encourage uptake of hybrid and electric vehicles in the fleet (Policy para 29.8, reiterated below)

New vehicle licences will not be granted in respect of vehicles unless less than four years old and is Euro 5 or higher.

Vehicle licences will not be renewed unless the vehicle is less than nine years old and meets the Euro 4 standard or higher.

These policies imply that by 2017/18 all internal combustion fleet will have Euro 5 or Euro 6 engines. Better maintenance will be encouraged through education and promotion.

Other incentives and policies in place are:

- ULEV to have up to five years free from vehicle fees
- Reduced fee for any petrol/electric hybrids
- Consider up to 15 year age limit for fully electric and 10 for petrol/electric hybrids
- Consider just a yearly inspection for first five years for ULEV
- Consider Electric Only taxi rank
- Market the Government grant scheme for such vehicles
- Provide rapid taxi only charging infrastructure
- Set date for all new vehicles to be low emission or ultra low emission – presently suggested as 1/4/2021
- Set date for all vehicles to be low or ultra-low – suggested 1/4/2026
- Use city centre ANPR access system to restrict access to that area to ULEV or hybrid vehicles only

This policy has a review date at latest of October 2021 but is under constant review to allow flexibility given the ULEV vehicle market is currently a very much developing one.

To set the context, our current understanding of available vehicles is as follows:

- Fully wheel chair accessible electric vehicle with petrol range extender just introduced December 2017 in London (Tx5)
- Fully electric fully wheel chair accessible vehicle with 175 mile range battery due for release in Spring 2018 (Dynamo)
- Fully tested, fully wheel chair accessible electric vehicle (no detail about range extension or current range), currently on hold due to court decision (Metrocab).
- Fleet of fully electric Nissan Leaf vehicles presently operating in Dundee though only relatively small vehicles more suitable to private hire (but believed to be operating as hackney carriage in Dundee as part of the mix).

- Active and trusted Toyota Prius hybrid vehicles presently part of the current Cambridge hackney carriage and private hire fleets.

Whilst a great amount of further information is still needed to flesh out the details, critically including actual accessibility standards and operational / cost information, the above at least provides a more positive opportunity viewpoint than was in place when the Policy was first set.

Our understanding is that the new Tx5 includes a turntable to allow wheel chairs to be loaded and for the passenger to face forwards or backwards in a fully secured position, with one or two passengers also possible. This overcomes current significant concerns about the present Tx vehicles where some disabled people cannot enter comfortably, and often choose to be carried sidewards-on in order to avoid not being able to travel. The larger alternative wheel chair vehicles based on converted van-style bodies overcome this, but at present none of these are expected to be able to become diesel free although this may change over time.

A major concern is the initial cost of the fully wheel chair accessible vehicles even when offset by Government grant. However, the designers of at least two of the vehicles are known to be seeking to work with the trade to demonstrate significant operating cost savings that reduce the whole life costs – although it may be at least 18 months before clear data becomes available given one vehicle has only just been introduced and another will not begin trials for another few months yet. Ironically, the one vehicle that had such trial data is the one which is not presently moving forward.

We understand that a further rear-loading WAV style vehicle is also under development although this may still be some while from production, whilst a key matter of real world information on range and performance of new vehicles is presently lacking. Some of this is due to vehicles not being around long enough yet, whilst some available data is being held back as commercial in confidence, which is understandable but unfortunate. Finally, the Government will be producing a guide to the uptake and understanding of low emission vehicles, due out late Spring 2018.

From our review of overall demand for hackney carriages, there is a clear split between the two main ranks, only one of which is truly City-centre based, although the station does also have additional current access criteria imposed as it is on private land. Dependant on air quality controls around the station, this may be a positive step allowing ULEV vehicles to focus on the city rank and non-ULEV to focus on the station as the policy and technology develop.

There is a further concern that the present wheel chair accessible fleet contains a range of different, but fully accessible vehicles. These allow different persons to find vehicles suiting their needs, although there is also the view that well-trained drivers can make most vehicles meet peoples' needs given driver care. At present there are around 11 different wheel chair accessible vehicle styles, with rear-loading vehicles also now allowed. The future at present may only contain three such vehicles but this may change, hence the need for keeping the policies under review. Review may also be necessary as further information comes forward on real performance both of new, developing and current vehicles.

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9 Summary, synthesis and study conclusions

This Hackney carriage demand survey on behalf of Cambridge City has been undertaken following the guidance of the BPG and other recent case history regarding unmet demand and its significance. This chapter first summarises each chapter in turn, and then draws together a synthesis, firstly in terms of demand and if and how any unmet demand is significant in terms of Section 16 of the 1985 Transport Act, and secondly in terms of how currently developing Cambridge policies might be taken forward.

Background and context

This survey was undertaken by LVSA based on the Council Brief and our proposal of April 2017 as confirmed and developed at our May 2017 inception meeting. On street interviews were in August, rank observations principally in October but with supplementary tests at the two main ranks undertaken in June, drivers were consulted in July / August, with key stakeholders contacted throughout the survey period, including obtaining current national views on air quality licensed vehicle plans.

Cambridge City has a growing population and is also influenced strongly by the surrounding neighbouring South Cambridgeshire hinterland. Both cycling and rail commuting make the transport background of the City relatively unique. The picture is further influenced strongly by pro-sustainable transport policies supported by a long term pedestrianisation of the central core, and a developing busway rapid transit. In due course this may be supported by possible light rail developments. Shortly the full service from the Thameslink and other rail developments will come on stream, further increasing levels of rail patronage for the City. This presently increases licensed vehicle use significantly since the station is a moderate distance from the central core and many other key destinations.

The City remains part of the wider Cambridgeshire County, whose Long Term Transport Strategy seeks to develop the integrated transport network with strategic transport policy to 2036 and aspirations to 2050. This is now being taken forward by the Cambridge Greater Partnership. As is usual, these higher level documents make very little mention of licensed vehicle services apart from use for demand responsive transport in rural areas. The County are the main provider of rank infrastructure in terms of regulation orders although there is significant involvement by the City in determining overall need and passing this to the County for implementation.

The City is also one of the first eight leading authorities in terms of Air Quality Action Plans and seeking reduced emission from licensed vehicles. This is set in the context of reviews finding a 20-30% reduction in emissions from licensed vehicles was possible (results of the EST feasibility study), with the key exit route from the main rank having high levels of contribution of emissions from such vehicles. Plans to incentivise low and ultra-low emission licensed vehicle uptake are advanced.

In terms of the licensed vehicle fleet, most hackney carriage growth was up to 2011, after which there was a drop. There was some growth in the run up to the application of a limit on vehicle numbers, after which numbers have remained stable. The unlimited hackney carriage policy led to a strong decline in private hire vehicle numbers (although some such vehicles also moved to South Cambridgeshire), with present numbers 44% of the peak level, and continuing to decline (probably now with transfer to other out of town licences).

The apparent fleet mix sees Cambridge City having a hackney carriage dominated fleet, although this is tempered by many private hire being out of town based.

Most drivers are now able to drive either hackney carriage or private hire vehicles, though a few single use driver badges remain on both sides. Current driver levels suggest potential for high levels of vehicle sharing by drivers.

Most wheel chair accessible licensed vehicles are within the hackney carriage fleet, with present levels being slightly lower than the peak of 70% reached briefly in 2013. The present level is 65%, whilst the level in the private hire fleet is small but reducing. Much of the current level of WAV results from the need for all new hackney carriages to be wheel chair accessible, though further growth would be hard with the present grandfather rights provide to the first 121 vehicles (37% of the fleet), though this proportion suggests a few are choosing to be WAV style.

Provision for those using hackney carriages with disabilities was updated in the Taxi Policy and Handbook a few years ago well in advance of the much more recent application of Sections 165 and 167 of the Equality Act by the Government in permissive legislation enacted in April 2017.

Regular review of the limit policy and level of vehicles occurs, although there was a gap in surveys during the period of no limit.

Rank observations

Since the last survey, the station rank has been redeveloped with access and egress less easy than it was. Two new Council ranks have been introduced operating at night only, but only starting in March 2017 they are still developing use. The full October rank review covered some 260 hours across all ranks, with a supplementary mid-June set of observations at the two busiest ranks supplementing our understanding of rank demand variation.

Estimates of average weekly passenger demand for 2017 show the dominance of the station rank, which provides 49% of all passengers. St Andrew's Street provides 28% with Market Square 12%. All but one other rank saw some passengers, although the busiest only took 4% of passengers (Drummer Street), with two ranks only seeing very light usage. Comparison to 2012 flows suggest the station is now even more dominant than it was then, although actual flows there are down 6%. St Andrew's Street has also reduced in usage since 2012, whilst Market Street appears to have increased.

The June two-rank test found increased passenger numbers, which appear related to a University event that weekend. Overall consideration of the information collected suggests 2017 flows are probably fairly similar through the year to those observed in 2012, despite significant growth in the area.

In terms of rank usage, St Andrew's Street tends to grow in usage through the day with an overnight peak whilst the station tends to drop in usage as train service levels reduce. Saturday flows are higher than Friday. Market Square is a key provider of night demand with the new Downing Street rank also making a clear contribution to night demand. Thursday demand is similar throughout the day but lower at night, whilst both Friday and Saturday both rise to overnight peaks. However, our view is that demand in Cambridge at this time cannot be considered to be 'peaky' as there are no significant spikes observed in our information.

The June information confirms a similar profile, but also shows Sunday less busy, but only marginally less than Friday at the top two ranks. Review of the Saturday flows demonstrated the impact of the University Open Day, although it is important to have tested the impact of such an event on service levels.

Detailed review of each rank by day showed some interesting operational characteristics. A key matter was how well even the revised layout at the station served very high volumes of passengers. The same was true of the St Andrew's Street rank, with the feeder rank clearly critical to providing sufficient vehicles there for much of the day.

Sample fleet activity levels on the Saturday of the main survey identified 74% of the hackney carriage fleet active. St Andrew's Street saw rising levels of vehicles servicing it as time moved on (from 23% to 44%). The station tended to see more similar levels of vehicles in each time period, with a range of 30-34%. Just 10% of vehicles were only seen at the Station rank with a higher level of 30% only servicing St Andrew's Street. Applied to the full fleet this would suggest 72 vehicles only service St Andrew's Street but only 24 only servicing the station.

On street public views

276 people were interviewed in the streets of the City, with 18% near the railway station. The city sample saw 87% saying they had used a licensed vehicle in the last three months. When using frequency levels, 2.4 trips per month were made by licensed vehicle against 1.2 for hackney carriages. The station figures suggested 83% of licensed vehicle trips at the station were made by hackney carriage, an encouraging level. For the city sample, the proportion by hackney carriage is 46%. This compares to the quoted level of normal usage from ranks of 37%, quite high. The 4% level of hailing was also relatively high compared to national values that tend to be more like 1%.

In terms of companies phoned, 51% named one company, with that level being 86% at the station. There were two other companies with 21% and 19% each. This suggests a moderately competitive environment albeit dominated by one large and two medium sized operators, but still with space for smaller companies. At least two of these three companies include hackney carriages within their fleet, typical for an area where there has been a period of no limit on vehicle numbers in the recent past.

The level of people telling us they could get licensed vehicles of a kind that suited them was very high. However, 69% would always take the first vehicle available at a rank. 7% said they would choose an electric powered saloon, 4% an electric powered WAV, and 19% a saloon style vehicle.

People were aware of six active and two less active ranks. St Andrew's Street was the most common rank named, followed by the station and Drummer Street. A high level of 73% of those mentioning ranks told us they used the ones they had named. The key location a new rank was preferred was at Addenbrooke's Hospital. However, a similar volume wanted a rank at Market Square, interesting as that location exists and is active, albeit only at night. Responses to this question suggested better signing of ranks, and particularly the time they were available to the public was necessary.

Just 11% of respondents told us issues they had with the hackney carriage service, not significant. Top issue, however, was delay getting a taxi. 26% of those responding to matters that might encourage them to use hackney carriages or use them more was availability of an 'app' they could use to get hackney carriages. The next two matters, not far behind in frequency, were more hackney carriages that could be phoned for, and more at lower prices.

The level of people saying either that they needed a WAV, or knew someone who did, was low. Most of those needing an adapted vehicle said it would be a full WAV style vehicle. Just one person preferred a rear loading vehicle with none saying they must have a side loading WAV.

57% did not know if those with disabilities in the area got a good service from hackney carriages or not. However, of the remainder 68% felt people did, with 28% saying they felt they did not.

The quoted latent demand value ranged from 1.02 for the station rank alone to 1.05 for Council ranks only and 1.07 for all ranks. These are very low figures.

The sample showed some bias to males and the middle age group, but this should not have unduly affected the results.

Key stakeholder views

Supermarkets and hotels mainly used private hire services, though two hotels were aware of the station rank. More pubs were aware of the St Andrew's Street rank. One complained about issues arising from what they felt were non-Cambridge based private hires late at night blocking their access. Most night clubs who responded were aware of ranks, and felt most of their customers did use vehicles from the ranks. One was concerned about driver attitudes to their customers and another felt phoned for vehicles tended to end up delayed in arriving. Police and marshal views were that there were more than enough vehicles available.

Trade views

A very high 22% of all dual drivers sent letters responded to our invitation – excellent for this kind of survey. A meeting was also held with trade representatives which provided useful input.

Most respondents drove both private hire and hackney carriage vehicles as appropriate at the time. 21% of respondents said they had a South Cambridgeshire drivers' licence as well as the Cambridge City one. Average length of experience was 12 years, but with a range from a year up to 45 years.

Most frequently people worked six days, closely followed by five and seven days. The average of 47 hours worked is above average.

Top reason affecting working hours was 32% avoiding heavy traffic and rush hours, with 26% saying they worked at the busiest times and 22% saying family commitments affected when they worked. Just 6% were affected by someone else sharing the vehicle they drove.

79% of respondents owned their own vehicle, with 68% working on radio circuits, the bulk working for the largest company. Drivers had a good knowledge and provided service to most ranks, an encouraging picture. Most said their most frequent way of getting fares was from ranks, with 62% saying this. 6% said hailing and 4% an 'app'. The responses suggest a high focus in this area on hackney carriage usage of vehicles.

There was a strong 88% response that the limit on vehicle numbers should remain. Of those responding, 48% said the limit helped reduce pollution and congestion whilst 19% felt it reduced over-ranking issues. 13% felt it kept the issue of tired drivers reduced, 11% felt it meant vehicles were always at ranks whilst 9% said it helped keep vehicles safe, clean, safe and well-maintained.

Most worked the 1300/2000 shift with the lowest values for the overnight session. The day with most vehicles operating was Saturday, then Thursday and Friday, with the least working on Sundays.

Formal evaluation of significance of unmet demand

Using all available data from both sets of data collection is a harsh but robust test of unmet demand and its significance. The result of this is a factor just short of the cut-off which would define unmet demand as being significant. This suggests that there is no unmet demand at this time which is significant in the area.

Using the more balanced test based on the October information alone reduces the level of the index significantly, from 78.3 to just 1.18, or 2.4 if the station (private) data is excluded.

All of these calculations add to the conclusion that the area currently does not have unmet demand which is significant. Even the existence of an out of course event affecting the June data did not reduce service levels – the trade responded and more than adequately met demand.

Air quality and accessibility considerations

The City has given significant consideration to both accessibility and air quality impacts of its hackney carriage and private hire fleet in recent years. A key thrust of the removal of the limit on vehicle numbers was to increase the level of WAV style vehicles in the fleet, which has clearly been achieved. A very recent change allows rear-loading vehicles to widen the options available both to the travelling public and to drivers in terms of operational flexibility, access standards and cost.

In terms of air quality, the City benefitted from one of the eight studies published in March 2016. This found 27.4% of traffic on the key King Street was 'taxis'. Key outputs were positive support for the present vehicle age limit and for the proposed ANPR control to the city centre area. 2016 saw the City draw together its 'Encouraging the shift to low emission taxis' strategy. This was built into the current Hackney Carriage and Private Hire policy adopted in October 2016. The City will incentivise the trade to take up hybrid and electric vehicle options. It also provides for future setting of dates by which all new, and then all hackney carriage and private hire vehicles will be low or ultra-low emission style.

The licensed vehicle industry is currently seeing introduction of a number of pure electric, range extended electric and hybrid vehicles that will enable the trade in Cambridge to take advantage of the options available. However, the major concerns relate to trust in the new technology as well as the overall initial cost of such vehicles, without corresponding evidence of the quoted lower maintenance and operating costs.

At the present time, the station rank requires a supplementary permit which means not all vehicles are able to service the busiest rank. The nature of demand from the two main ranks is also very different, with longer journeys more likely from the station albeit with lower occupancies. However, our evidence is that the number of vehicles focussing on one rank only tends to be relatively small, with a higher proportion of those focussing targeting the St Andrew's Street location rather than the station. This could have benefit that may allow quick wins using hybrid vehicles, already proven and trusted at the station, whilst focussing pure electric and range extended electric on the City centre ranks which are likely to need higher emission standards.

Overall, recent developments seem to be moving towards providing options for the City to have both an accessible and an air quality efficient fleet, although higher take-up of the more effective vehicles may not be practical in the early part of the development whilst drivers are persuaded of the viability of the options. It is very likely that more rapid change will occur around two to three years from now although early adopters will have to bear more risk, yet may gain more benefit than those that follow. The need to review and monitor options is critical to ensuring sufficient vehicles remain available.

Synthesis

At present, our overall view is that there about the right number of hackney carriage vehicles to service current demand and also allow a reasonable living to be made by those in the trade. There are times when the fleet is under pressure at out of course events, but this is normal for any transport provision and seems relatively balanced at present. Whilst there is evidence of spare capacity in the current fleet, we would not feel comfortable suggesting any less vehicles are generally needed.

The trade appears to know when to provide further capacity, and seems to have the spare capacity to react when necessary, and the current limit ensures there is no over-reaction in provision of too much excess capacity which can have impact on economics of operation.

The current operation is complicated by the present grandfather saloon rights policy as well as the requirement for a permit for the busiest rank, with these two added restrictions working together to tip provision of saloon style vehicles in the city centre to around one in five vehicles compared to the one in three in the fleet. A trade representative has suggested this causes issue with passengers finding WAV style vehicles difficult to enter. However, those we spoke with in the streets mainly said they could find the right kind of vehicle readily, with no more than one in five saying they chose a saloon at a rank when they had a choice.

In terms of accessibility and air quality, the current Policy document provides a good balance between what can be conflicting requirements. It also allows sufficient flexibility and encouragement to allow the trade to feel able to move forward although it is clear review of options and achievement are very important. The option of known hybrid vehicles forming an early part of change whilst the higher access but less proven style vehicles following when available seems a fair balance of quick wins and solid future gain. It will be very important to ensure that economics allow retention of the current fleet level given the results from our survey, and the impact of events.

The present operation seems balanced, with willingness of the trade to develop and make use of new opportunities. The council can assist development with improved rank marketing, such as evidenced by the map which has been produced, which needs to be made widely available. This could be part of a leaflet explaining the range of vehicles available in the hackney carriage fleet, as well as explaining in summary style the present protection provides to those travelling with disabilities by provision of the local Taxi Policy and Handbook.

It is also clear there needs to be a clear way that passengers having issue with vehicle styles can quickly feed back to the Council their concerns and views. With new vehicle types being added with the new electric / range extended petrol vehicles, this could be an opportunity to hold road shows where people can understand the facilities and explain any issues to both trade and council staff and councillors.

There will be need for the Council to obtain and disseminate information as it is made available in regard to the operation and evidence about new vehicle types, perhaps offering and assisting with trials of each of the different vehicle types in conjunction with manufacturers if this provide possible. Demonstrations of all new vehicle types when possible are essential. The required reporting of progress will also be an opportunity for sharing of progress both with the trade and with the public. It is also valuable that the on-street interviews showed the public did have interest in supporting electric vehicle introduction.

The trade needs to consider taking advantage of present and developing options including app based booking – particularly focussing on versions carefully built to meet current legislative requirement. The involvement of companies in the hackney carriage trade in this area may prove very beneficial to this development, as well as to the options by which sustainable vehicles might be added by a mix of personal and corporate investment.

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10 Recommendations

On the basis of the evidence gathered in this Hackney carriage demand survey for Cambridge City, our key conclusion is that there is no evidence of any unmet demand for the services of hackney carriages either patent or latent which is significant at this point in time in the Cambridge City licensing area. The committee is therefore able to retain the current policy limiting vehicle numbers, and also retain the limit at its current level. This decision could be defended if necessary.

Opportunity should be taken by the council to promote rank locations in the City using the map now available, including operating hours. This could be part of a leaflet promoting the range of vehicles available as well as on web-based locations.

Sharing of information about how the new Policy is developing, and continual review and revision if necessary is also very important. This will need provision of sufficient council staff and committee time to ensure progress is enhanced and not hindered.

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Appendix 1 – Detail of fleet size

	hcv	Phv	lv total	Hcd	phd	dd	total drivers		Operators	% hcv WAV	% phv WAV
1994D	120			273				**1994D**			
1997D	125	281	406	318	393		711	**1997D**		8	
1999D	147	352	499	350	362		712	**1999D**	16	14	
2001D	175	325	500	440	365		805	**2001D**	26	41	
2004D	235	236	471	482	390		872	**2004D**	34	41	
2005D	257	209	466	482	354		836	**2005D**	37	53	
2007D	282	135	417	492	248		740	**2007D**	33	59	
2009D	298	199	497	508	295		803	**2009D**	34	62	
2010N	302	197	499	*508*	*292*	_	*800*	**2010N**	*32*	62	3
2011D	303	211	514	507	289	0	796	**2011D**	29	62	*3*
2012C	293	217	510	*276*	*159*	*300*	735	**2012C**	28	62	*3*
2013D	266	179	445	45	29	615	689	**2013D**	23	70	*3*
2014C	309	179	488	28	13	698	739	**2014N**	24	*68*	*3*
2015D	324	178	502	23	9	714	746	**2015D**	24	65	4
2017D	327	153	480	16	5	677	698	**2017D**	23	65	1
2017C	326	147	473	16	4	677	697	**2017C**	20	*65*	*1*

Appendix 2 – Present rank details

Rank / operating hours	Spaces	Comments
24-hour ranks		
St Andrew's Street (near Hobson Street / Christ's College)	6 to 7	Main town centre rank – controlled by byelaw rather than Traffic Regulation Order (TRO)
Drummer Street	9	Rank near to bus station – has TRO – in 2013 became linked feeder to St Andrew's Street using CCTV system.
Parkside	5	Covers longer distance bus and coach stops – has TRO
Station Road	2 parts – 4 spaces and 7 spaces	Rank on public highway near railway station – rarely used – one part now very faded, other part still in place in May 2017. Section nearest city centre replaced by pay and display parking, section nearest station under review, if remains will be reduced in size (was quoted at 15 vehicles rather than the 7 above)
Night ranks		
Bridge Street	4	1900-0600. Only marked by small bollards signs with no road marking practicable.
Sidney Street near Sussex Street	2	1900 to 0700 only – marked only by low bollards – near Superdrug. Has TRO. In 2017 now well-used. Marked for two taxis. Road surface is brick blocks so hard to mark even if was possible legally.
Sidney Street near Petty Cury	6	1900 to 0600 only – marked only by low bollards – near Boots. Has TRO.
Market Square	2 areas 5+5	Both 1900-0600. First area also marked as 'rank covered by CCTV', however one of bays full of large bins for market stalls. Marked clearly on signs and road. On Western side near St Mary's Church. Second part on tiled road surface marked by small bollards and street sign only – on northern side outside

		Cookshop, TRO for both allows loading 0600-1000 and 1600-1900. 1000-1600 is within pedestrianised area. Was formerly 24 hour but always affected by pedestrianised hours.
St Andrew's Street near Baptist Church / Hobson House	4	1900-0700. Signs only at each end, road is tiled so hard to mark, also loading 0700-1000 and 1600-1900, disabled parking 1000-1600 so no legal road marking possible.
Downing St	5	New rank in bus layby outside John Lewis. Sign and road markings for buses, sign only for taxis, 2200 to 0600, covering full length of bus stop. Formally and legally in place March 2017.
Corn Exchange St	2	New rank in loading bay, near to exit from Grand Arcade shopping centre, but bay includes large bins from shops. Put in place in March 2017
Informal rank locations		
Jesus Lane	n/a	Potential location where private hire arrange pick-ups, from trade comment
Cambridge station (private rank)		
Rail station	14 (approx. plus feeders)	Administered by rail company with supplementary permit arranged with trade group, number of permits limited to less than current number of hackney carriages. Rank now revised with new station frontage and access arrangements. Near set-down area and all vehicles leave via single lane exit and relatively tortuous route out round new development. Feeders informally within car parking area.
Other locations		
King's Parade	n/a	Former rank now disabled parking bays
Fair Street	n/a	Former rank not used and now disabled parking bays

New Square	n/a	Location where trade would like a rank
St Andrew's Street near Park Terrace	6	1900 to 0700. Has TRO but physically removed by revised road layout and kerbing. Discussions current with police and highway authority to re-sign and rebrand to help address issues with illegal plying for hire near Regal. No change as yet. No longer listed formally.

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Appendix 3 – June survey programme

See separate document

Appendix 4 – October survey programme

See separate document

Appendix 5 – Detailed June rank survey results

See separate document

Appendix 6 – Detailed October rank survey results

See separate document

Appendix 7 – On Street interview results

See separate document

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Appendix 8 – National rail information for Cambridge station

Rail year (ends March in last year noted)	Entries / exits	Growth / decline
1997 / 1998	3,909,257	n/a
2002 / 2003	5,475,112	+8% per year
2004 / 2005	6,060,475	+11%
2005 / 2006	6,137,423	+1%
2006 / 2007	6,522,309	+6%
2007 /2008	6,997,887	+7%
2008 / 2009	7,571,838	+8%
2009 / 2010	7,661,146	+1%
2010 / 2011	8,245,416	+8%
2011 / 2012	8,823,236	+7%
2012 / 2013	9,168,938	+4%
2013 / 2014	9,824,859	+7%
2014 / 2015	10,420,178	+6%
2015 / 2016	10,954,212	+5%
2016 / 2017	11,424,902 (36th largest)	+4%
1997/98 to 2016/17		+192%
2012/3 to 2016/17		+25%

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Appendix 9- List of Stakeholders consulted

Key consultees	Response
Supermarkets	
Asda, Coldhams Lane	R
Marks and Spencer, Coldhams Lane	Y
Waitrose, Fitzroy Street	Y
Sainsbury's, Brooks Road	Y
Hotels	
University Arms Hotel	(N)
The Castle Bed and Breakfast	(N)
Royal Cambridge Hotel	Y
Fenners Hotel	Y
Centennial Hotel	Y
Bridge Guest House	Y
Restaurants / Cafes	
Baroosh	(N)
La Raza	(N)
The Cow	(N)
Ta Bouche	Y
Public Houses	
Nusha	(N)
The Fountain	(N)
Baron of Beef	R
Regal Wetherspoons	Y
The Eagle	Y
Castle Inn	R
All Bar One	R
Mitre	Y
The Cambridge Brew House	Y
The Mill	Y
The Portland Arms	Y
The Old Spring	N
Night Clubs	
Lola Lo	Y
Ballare	R
The Place	Y
Fez	Y
Revolution	Y
Kambar	N
Salsa Club	(N)

Other key stakeholder groups	
Cambridge Hospital	N
Police	Y
Highways	Y
Cambridge Business Against Crime (CAMBAC)	Y