



Aberdeen City
Taxi Unmet Demand and Private Hire Overprovision Survey
July 2018

Executive Summary

This Aberdeen taxi unmet demand and private hire overprovision survey has been undertaken on behalf of Aberdeen City Council following appropriate available guidance.

This Executive Summary draws together key points from the main report.

Within the Council licensing area, the council maintains a limit regarding the number of taxis which may be licensed. The current limit is set at 1,079 taxi vehicles. There is not currently a limit on the number of private hire cars.

Data has been collected through consultation with stakeholders, the trade and members of the public. In addition, observations of activity at taxi ranks were undertaken to record volumes of taxis and passengers using each rank and whether any passengers had to wait for taxis to arrive at the ranks.

Surveys were undertaken at all taxi ranks in Aberdeen known to be active. Video cameras were used to record activity at the taxi ranks and the levels of activity during active periods were tabulated and analysed.

The relative levels of activity at the ranks are presented in the following figures.

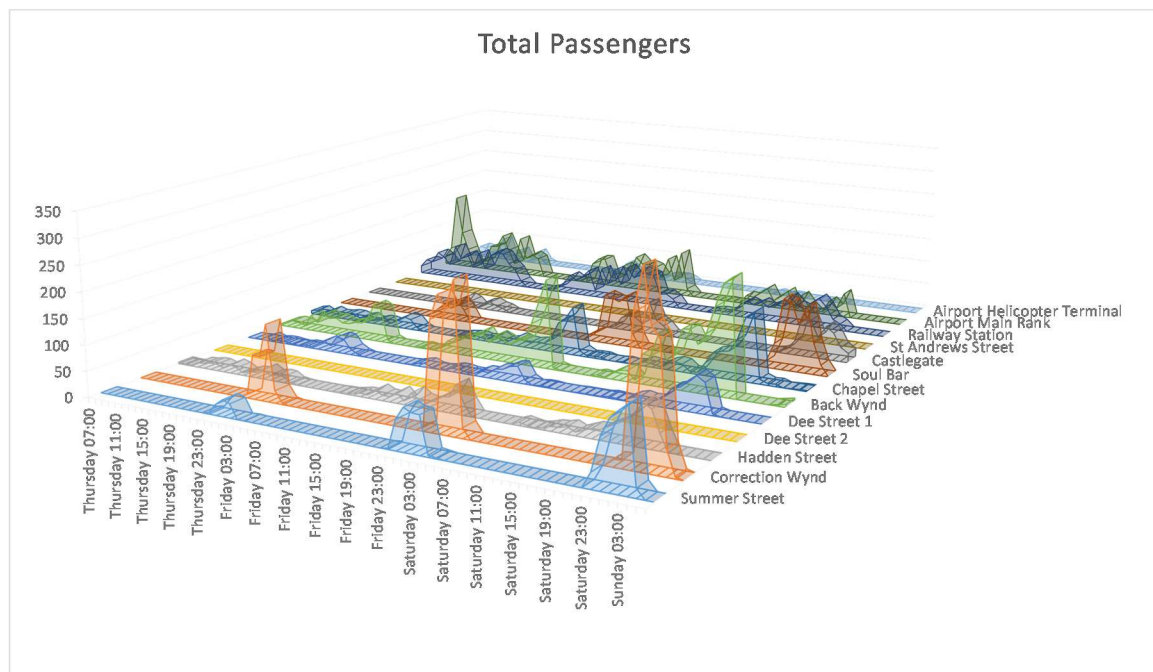
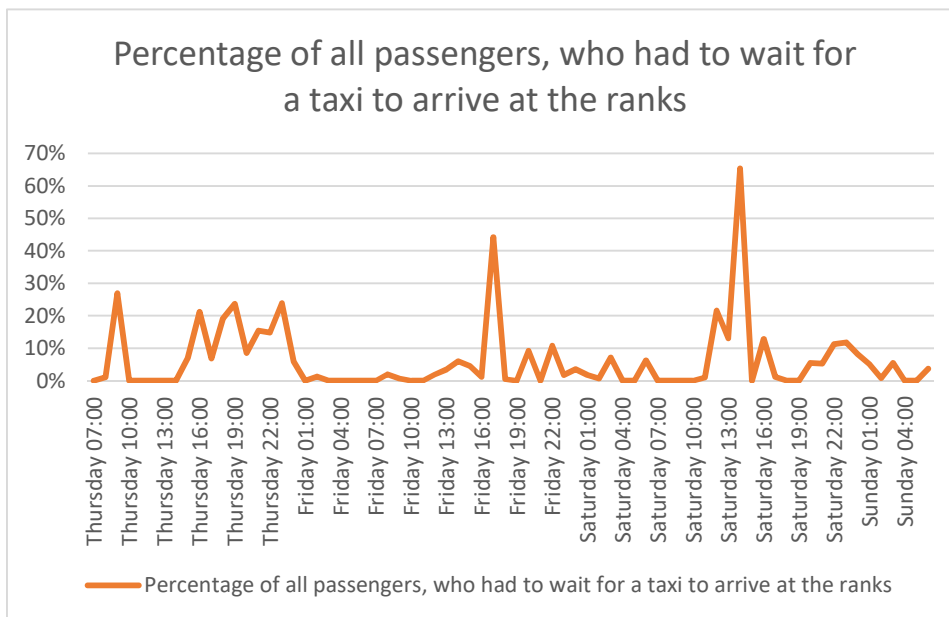


Figure 1 - Passenger volumes through ranks in Aberdeen

Some passengers were observed waiting from time to time at the ranks, for Taxis to arrive at the ranks. The waiting passengers were observed at various times during periods of low activity as well as during periods of high activity. The length of time that passengers had to wait was generally low. The number of passengers who had to wait was a relatively low proportion of all passengers and occurrences were normally infrequent. The normal situation was that Taxis were waiting at ranks when passengers arrived at the ranks in order to hire one. There were no extensive periods of continuous passenger waiting and no lengthy queues of passengers formed for extended periods of time, waiting for taxis to arrive at the ranks.

A notable feature of the taxi trade in Aberdeen is that night ranks are formed along Union Street after midnight and adjacent ranks on streets around Union Street are closed at this time. On Friday and Saturday nights, taxi marshals operate at the night ranks along Union Street. At times, passengers queue to board queueing taxis at the night ranks on Union Street. It is important to differentiate this type of passenger queueing from that which occurs when no taxis are waiting at the rank. The passenger wait is due to the time taken for people to board the first few taxis in the queue and for subsequent taxis to move up the rank to the boarding point. During these passenger waiting events, there were taxis available in the vehicle queue at the ranks in question. Passenger wait time is not due to undersupply of taxis on these occasions, i.e. even if more taxi were available, they would still need to join the back of the vehicle queue and passengers would not be able to board faster. Such passenger queueing as described is not counted towards the total passenger waiting which was observed when taxis were not present at the ranks.

Passenger waiting is summarised in the following figure.



Despite perceived issues with supply of licensed vehicles late on Saturday night (early hours of Sunday morning) the proportion of passengers who had to wait for taxis to arrive at the ranks was relatively low.

Public and stakeholder perception of the Taxi fleet was generally favourable. However, some respondents felt that there were issues with availability at peak times and reliability of bookings for travel.

Several coefficients are calculated from the rank survey results and from public consultation. The coefficients are entered into a formula to calculate the Index of Significant Unmet Demand (ISUD). The index value for the 2018 survey was **24.6**. This value falls below the threshold value of 80, and suggests that there is **no significant unmet demand** for taxis.

The ISUD value, considered along with feedback from stakeholders and the public leads to the conclusion that there is **no significant unmet demand** in Aberdeen.

Private hire operators were consulted regarding services provided. Most operators operate mixed fleets of both private hire cars and taxis. Taxis dominate provision for private hire bookings. Drivers are self employed and choose their own working hours. The period when most drivers are logged into the booking systems and working tends to be weekday mornings between 7:00 and 10:00. The number of drivers working dwindles through the rest of the day and most drivers choose not to work evenings and nights. Private hire operators are not able to fulfil all bookings attempted at busy periods at night, especially on Saturday nights. It is felt that if more drivers can be encouraged to work nights, then more demand could be satisfied.

The number of private hire cars licensed was assessed to determine whether there is an overprovision of private hire cars. Symptoms of overprovision would be low rates of hourly hires and lengthy waits between bookings. The assessment was complicated by the nature of the private hire trade in Aberdeen. Most operators have a mixed fleet of taxis and private hire cars which fulfil bookings. The data from private hire operators could not differentiate between bookings fulfilled by taxis and those fulfilled by private hire cars.

Considering the private hire data for the mixed fleet, the hire per hour rate for private hire bookings was generally higher than that for taxis. The wait time between hires was commensurate with the wait times taxis experienced on the ranks. These statistics do not suggest that there is an overprovision of licensed vehicles working on private hire booking circuits.

The assessment of private hire car overprovision must consider only private hire cars and not all vehicles working on private hire circuits. If we assume

that private hire cars operate at a similar level of utilisation per vehicle as taxis working on the booking circuits, then the statistics regarding booking frequency and wait times between bookings indicate that the level of provision is not excessive. If we were to consider the overall number of private hire cars and the estimated total number of private hire bookings undertaken, the existing fleet of private hire cars could not fulfil the current level of demand without the capacity provided by taxis working on private hire booking systems.

Consequently, the assessment determined that there is **no overprovision of private hire cars**.

The elderly and people with mobility impairments rely more heavily on the services of licensed vehicles, than the population at large. Feedback from consultation with stakeholders and with the trade, suggested that there are no issues with the availability of wheelchair accessible vehicles and provision of appropriate service to mobility impaired users.

The market for providing licensed vehicle services to the elderly and mobility impaired is a growing market. The private hire operators appear to be well equipped to address this growing market.

It is recommended that there is no need to increase the limit on taxi licences. There is no need to introduce a limit on private hire car numbers as there is no overprovision of private hire cars.

Measures which would encourage more drivers to work unsocial hours would help to address the perceived limited availability of licensed vehicles on Friday and Saturday nights. It is recommended that measures such as a revision of the fares table, with a new higher distance based tariff during the late night peak periods on Friday and Saturday nights is explored. If Uber were to commence operations in Aberdeen, their surge pricing policy during times of peak demand, would result in higher fares for travel with Uber during peak periods.

Some passengers find the wheelchair accessible vehicles used in the taxi fleet to be less comfortable than saloon cars and more difficult to get in and out of. However, it was generally felt that there was a need for wheelchair accessible vehicles to be available for those who needed them. It was also generally felt that a mixed fleet was appropriate to meet the needs of all users.

There was some feedback that there is some reluctance amongst taxi drivers to accept hires from wheelchair users. Anecdotal evidence indicated that a minority of drivers were not keen on undertaking such hires and it was suggested that some would even go to such lengths as to leave a rank if they

thought a wheelchair user was likely to try and hire them. It should be stressed that there was no suggestion that such behaviour was prevalent amongst drivers, but different sources indicated that some drivers did discriminate against wheelchair users.

A review was undertaken regarding existing ranks and potential new ranks to be implemented in Aberdeen.

The existing ranks were visited and assessed. The existing ranks were generally found to be suitable and well located for existing demand and patterns of use. Some limitations were identified regarding use by wheelchair user or visually impaired users. However, rank locations and configuration were generally found to be suitable.

Two of the existing ranks were in part or whole, largely unused. The rank on St Andrew Street was unused during the site visit and rank observation survey. The rank on Dee Street is split into two separate bays, split by the junction with Langstane Place. Whilst the rank is generally lightly used, the usage is concentrated on the section of the rank between Union Street and Langstane Place. The section beyond Langstane Place is largely unused. It is thought that the configuration of the rank lends itself to this pattern of use. The taxis which wait for passengers on the section between Langstane Place and Union Street, have the option of leaving the rank and turning left onto Langstane Place and subsequently, on to Union Street and then destinations to the north, west or east. However, from the section beyond Langstane Place, taxis departing the rank may only travel south along Dee Street.

Members of the public and the trade were asked if they could identify new locations which would be suitable for the establishment of a new rank. Suggestions were received from both the trade and the public. The potential new rank locations were assessed for suitability. The long list was distilled down to two suggested locations which may be suitable for establishing new ranks. These are locations which are likely to have sufficient demand to establish and sustain an active taxi rank, without being too close to existing active ranks and having a detrimental impact on existing ranks.

The first location thought to be suitable for a new rank, is on Upperkirkgate. This location is close to retailing and business premises as well as the Council offices, and would serve daytime demand from these land uses. In the evening there is likely to be demand from nearby night time economy venues.

The second suggested location is on Guild Street. This location would serve the bus station and local retailing and business premises during the day and night time economy venues in the evening.

Both new locations would have some constraints regarding the size of the ranks and the potential rank on Guild Street is in a sensitive traffic area which may make this location less desirable. However, in terms of operational demand, both would be likely to be well used by passengers.

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1 General introduction and background

Aberdeen City Council is responsible for the licensing of taxi and private hire cars operating within the council area. At the present time it operates a limit on the number of taxi licences under the Civic Government (Scotland) Act 1982 Section 10 and on the basis of the results from previous surveys. This current Report provides the results from the 2018 review of demand for taxis in Aberdeen, undertaken using the guidance given in the April 2012 "Taxi and private hire car licensing: Best Practice Guidance for Licensing Authorities" (the BPG). In addition to the survey of demand for taxis, the survey also encompassed a survey of overprovision of private hire cars, in accordance with the requirements of sub-sections 3A, 3B and 3C of Section 10 of the Civic Government (Scotland) Act 1982. The commission also encompassed a review of existing taxi ranks and a review of proposed locations for new taxi ranks.

Stakeholder consultation was undertaken by email, and phone-calls as appropriate. On-street questionnaires were undertaken during May and June 2018, together with the video observation of activity at ranks at the beginning of May and beginning of June 2018.

Trade consultation was undertaken using an online survey, with links to the survey distributed to the trade by the Council. Additional contact was made directly with a sample of taxi drivers at the ranks and discussion with representatives of private hire operators.

At the present time, a local authority is entitled to place a limit on the number of taxi licences under the Civic Government (Scotland) Act 1982 as long as the Council is satisfied that there is no significant unmet demand for the services of taxis in the City.

At the present time, each licensing authority in Scotland supervises the operations of two different kinds of locally licensed vehicle (carrying eight or less passengers):

- Taxi vehicles which alone are able to wait at ranks and pick up people in the street (ply for hire) as well as accepting pre-bookings;
- Private hire cars, which cannot ply for hire and must be pre-booked.

The "Best Practice Guidance" paragraphs 5.30 to 5.36 explain guidance regarding quantity restrictions on taxi licences. The Scottish Government remains of the view that decisions as to the case for limiting taxi licences should remain a matter for licensing authorities in the light of local circumstances (para 5.32). The key is that 'licensing authorities that presently restrict numbers of taxi licences are, however, encouraged to

periodically review this policy and to examine the wider policy direction” (para 5.32).

Report structure

This Report provides the following further chapters:

- 2 Local background and context
 - 3 Patent demand measurement (rank surveys)
 - 4 General public views
 - 5 Key stakeholder consultation
 - 6 Trade stakeholder views
 - 7 Evaluation of unmet demand and its significance
 - 8 Private Hire Car overprovision analysis
 - 9 Demand profiles
 - 10 Rank review
 - 11 Summary, synthesis and study conclusions
 - 12 Recommendations
- Appendix A – Rank Survey Results

Each of chapters 2 to 10 presents the results from the analysis undertaken to identify the facts behind the research and analysis. Chapter 11 summarises the individual chapters and moves towards an overview of the data and conclusions based on looking at all elements of data collected ‘in the round’.

With respect to the principal subject of this survey, local authorities retain the right to restrict the number of taxi vehicle licenses.

A more recent restriction, often applied to areas where there is no ‘quantity’ control felt to exist per-se, is that of ‘quality control’. This is often a pseudonym for a restriction that any new taxi vehicle licence must be for a wheel chair accessible vehicle, of various kinds as determined locally. In many places this implies a restricted number of saloon style taxi licences are available, which often are given ‘grandfather’ rights to remain as saloon style.

Within this quality restriction, there are various levels of strength of the types of vehicles allowed. The tightest restriction, now only retained by a few authorities only allows 'London' style wheel chair accessible vehicles, restricted to those with a 25-foot turning circle, and at the present time principally the LTI Tx, the Mercedes Vito special edition with steerable rear axle, and the Metrocab (no longer produced). Others allow a wider range of van style conversions in their wheel chair accessible fleet, whilst some go as far as also allowing rear-loading conversions. Given the additional price of some of these vehicles, this often implies a restriction on entry to the taxi trade. In Aberdeen, many of the wheelchair accessible vehicles are rear loading vehicles, which tend to be more affordable than side loading purpose built taxi vehicles. Furthermore, many of the saloon vehicles used in the taxi fleet are executive model saloon cars, which often cost more than the purpose built taxi vehicles.

Some authorities do not allow vehicles which appear to be taxis, i.e. mainly the London style vehicles, to be within the private hire fleet, whilst others do allow wheel chair vehicles. The most usual method of distinguishing between taxis and private hire is a 'Taxi' roof sign on the vehicle, although again some areas do allow roof signs on private hire as long as they do not say 'Taxi', some turn those signs at right angles, whilst others apply liveries, mainly to taxi fleets, but sometimes also to private hire fleets.

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 authority's. This is mainly due to some court cases in Scotland taking interpretation of the duty of the licensing authority further than is usual in England and Wales, requiring current knowledge of the status of unmet demand at all times, rather than just at the snap-shot taken every three years. However, the three year survey horizon has become generally accepted given the advice of the BPG and most locations that review regularly do within that timescale.

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 and more recently in 2012, in Scotland).

2 Local background and context

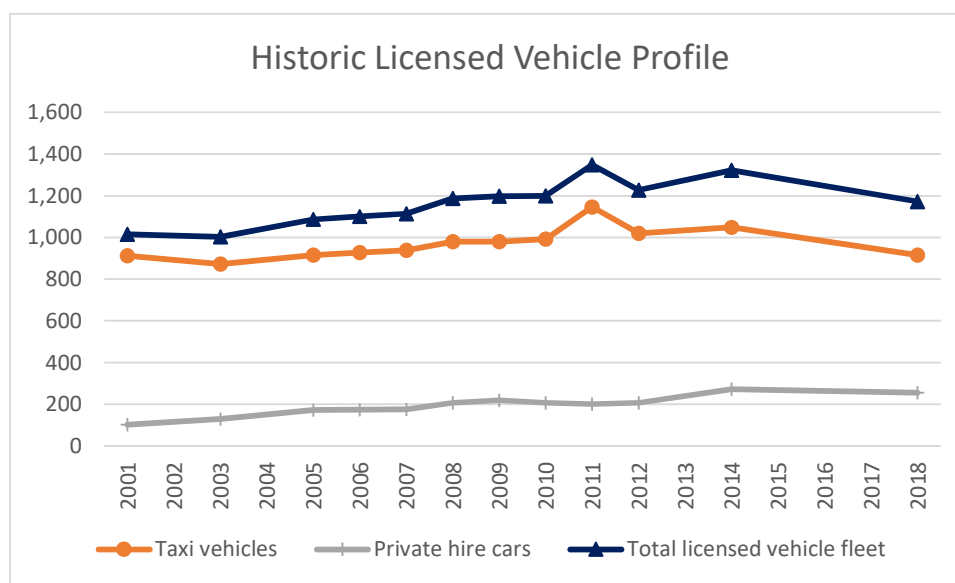
Aberdeen City currently has a population of 229,840 (mid 2016 estimate). Politically there are 13 multi-member electoral wards and a total of 43 elected councillors comprising the Council.

Whilst the Council includes a large urban population in the City itself, it also covers a more rural hinterland including Dyce, Cults and Peterculter, although there are other settlements quite close to the City yet outside the Council boundary (e.g. Portlethen and Westhill). Being on the East coast, the City is the focus for a number of roads, including the A90 (central Scotland to Peterhead), the A93 to western Scotland and the A96 to Inverness. The main rail services head south to both Edinburgh and Glasgow, with a regular London service, and a service north east to Inverness. A wide range of inter-urban, regional and local buses also focus on Aberdeen. There is an important airport hub for the city, located at Dyce, which services both the oil industry and more domestic routes, including many to the islands of Scotland as well as to English and international destinations, although the main services tend to be more business based than might be the case for other similar sized airports around the UK. There are a large number of oil industry offices in and around the City.

By drawing together published statistics from both the Department for Transport and the National Private Hire Association, supplemented by private information from the licensing authority records, recent trends in vehicle, driver and operator numbers can be observed.

Table 1 - Historic licensing statistics

Year	Taxi vehicles	Private hire cars	Total licensed vehicle fleet	Driver numbers (Taxi)	Driver numbers (Private Hire)	Total drivers
2001	912	102	1,014	1,217		
2003	873	129	1,002	1,175	4	1,179
2005	915	172	1,087	1,243	4	1,247
2006	927	174	1,101	1,249	2	1,251
2007	939	175	1,114	1,286	2	1,288
2008	980	207	1,187	1,346	2	1,348
2009	979	219	1,198	1,386	2	1,388
2010	992	207	1,199	1,441	2	1,443
2011	1,147	201	1,348	1,469	2	1,471
2012	1,020	207	1,227	1,431	9	1,440
2014	1,049	273	1,322	1,529	9	1,538
2018	915	257	1,172	1,301	51	1,352



Licensing Statistics from 2001 to date

The data presented in Table 1 and Figure 2 indicates that the number of licenced taxis, private hire cars and licensed drivers has been declining in recent years. The number of taxis is below the taxi vehicle limit of 1,079 taxis. Private hire car numbers are not currently limited.

Comparative information to other authorities

Table 2 below compares recent licensed vehicle numbers for Aberdeen with other Scottish authorities. The table is ordered in increasing proportions of total licensed vehicles per 1,000 population.

Table 2 - Licensed vehicle proportions

Licensing Area	Population	Taxi Vehicles	Private Hire Cars	Total Licensed Vehicles	Taxis per 1,000 population	Private Hire Cars per 1,000 population	Total licensed vehicles per 1,000 population
Angus	116,520	122	65	187	1.0	0.6	1.6
East Ayrshire	122,200	125	79	204	1.0	0.6	1.7
Clackmannanshire	51,350	56	36	92	1.1	0.7	1.8
Perth and Kinross	150,680	107	179	286	0.7	1.2	1.9
Midlothian	88,610	52	135	187	0.6	1.5	2.1
North Ayrshire	135,890	217	71	288	1.6	0.5	2.1
Stirling	93,750	75	130	205	0.8	1.4	2.2
Orkney Islands	21,850	32	16	48	1.5	0.7	2.2
Dumfries & Galloway	149,520	215	117	332	1.4	0.8	2.2
Fife	370,330	481	343	824	1.3	0.9	2.2
Moray	96,070	196	27	223	2.0	0.3	2.3
East Lothian	104,090	127	127	254	1.2	1.2	2.4
Scottish Borders	114,530	219	72	291	1.9	0.6	2.5
South Ayrshire	112,470	130	165	295	1.2	1.5	2.6
Argyll & Bute	87,130	190	64	254	2.2	0.7	2.9
West Lothian	180,130	122	409	531	0.7	2.3	2.9
Aberdeenshire	262,190	487	309	796	1.9	1.2	3.0
Highland	234,770	593	193	786	2.5	0.8	3.3
Falkirk	159,380	428	145	573	2.7	0.9	3.6
Inverclyde	79,160	244	52	296	3.1	0.7	3.7
Na h-Eileanan Siar	26,900	95	20	115	3.5	0.7	4.3
West Dunbartonshire	89,860	336	68	404	3.7	0.8	4.5
Dundee City	148,270	530	214	744	3.6	1.4	5.0
Aberdeen City	229,840	930	265	1,195	4.0	1.2	5.2
North Lanarkshire	339,390	493	1,322	1,815	1.5	3.9	5.3
South Lanarkshire	317,100	337	1,467	1,804	1.1	4.6	5.7
East Renfrewshire	93,810	65	481	546	0.7	5.1	5.8
East Dunbartonshire	107,540	319	324	643	3.0	3.0	6.0
Renfrewshire	175,930	235	819	1,054	1.3	4.7	6.0
City of Edinburgh	507,170	1,316	1,772	3,088	2.6	3.5	6.1
Shetland Islands	23,200	99	59	158	4.3	2.5	6.8
Glasgow City	615,070	1,420	3,414	4,834	2.3	5.6	7.9
Scotland	5,404,700	10,536	12,122	22,658	1.9	2.2	4.2

Licensed Vehicles per 1,000 population

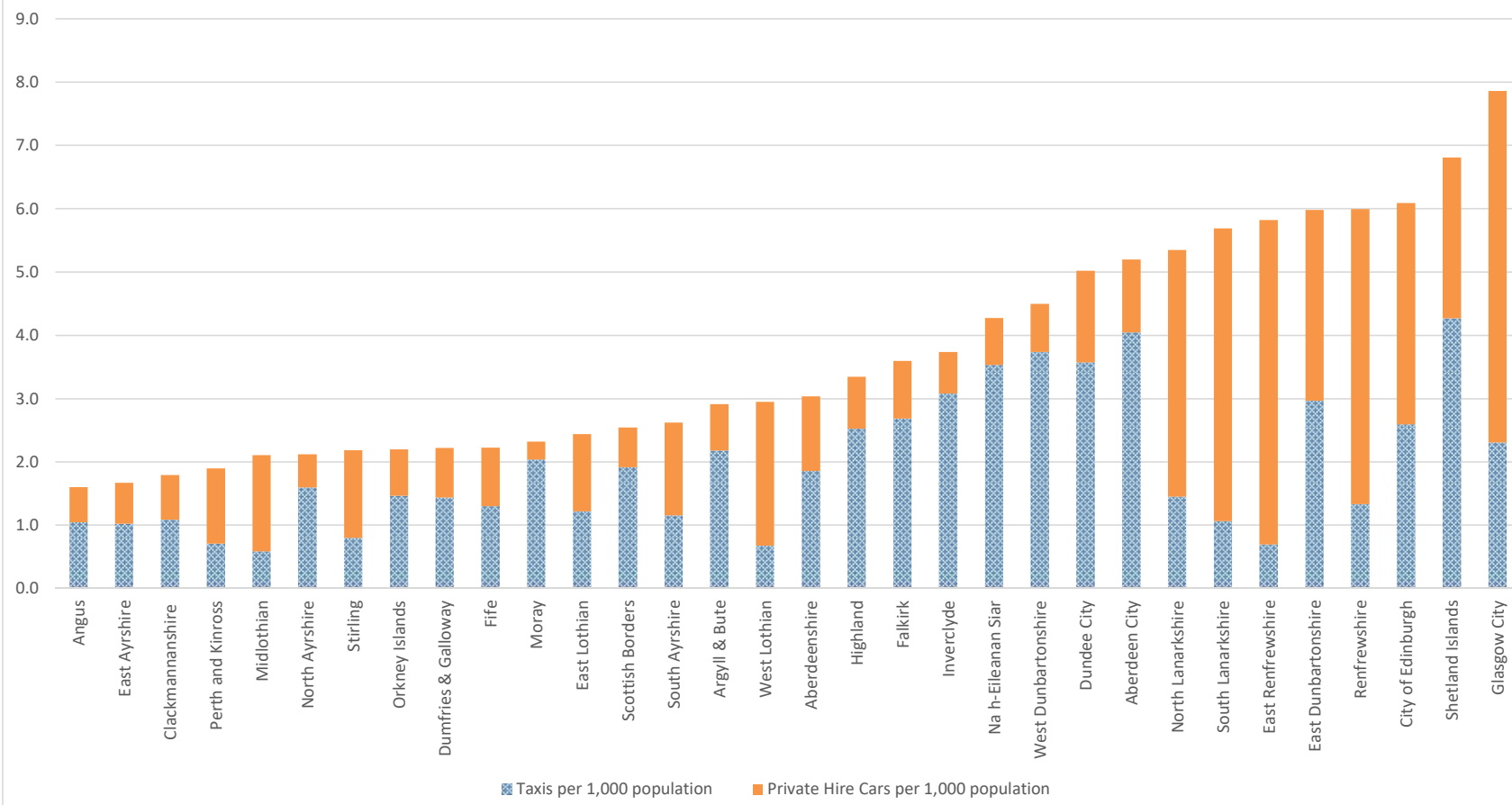


Table 2 above shows Aberdeen has the second highest proportion of taxis per 1,000 population in Scotland. At 4.0 taxis per 1,000 population, the value is more than twice the Scottish average of 1.9 taxis per 1,000 population.

The proportion of private hire cars per 1,000 population in Aberdeen is relatively low at 1.2 private hire cars per 1,000 population. This is slightly more than half the Scottish average of 2.2 private hire cars per 1,000 population. Compared with other cities in Scotland, Aberdeen has slightly higher ratios for both private hire cars and taxis, than Dundee. However, the proportion of taxis is significantly higher than both Glasgow and Edinburgh and the proportion of private hire cars is significantly lower than for both Edinburgh and Glasgow.

Driver ratios

The current statistics suggest 1,416 drivers for 1,172 vehicles in the total licensed vehicle fleet (with any comparison at taxi level not appropriate due to the low number of private hire driver licences). This proportion of 1.21 suggests there is very little double shifting of vehicles. Unlike other licensing authorities, the tradition of single owner-driver relationships in the fleet seems to be long established in Aberdeen – this was also confirmed with members of the trade.

Fares

The table below summarises Aberdeen Council taxi fares, as last set at the date shown, Date tariff set: 23 January 2017

First 950 yards £2.40

Per additional 180.5 yards 20p

Waiting time £23 per hour

Extra charges:

- 1 – Extra £1 for all journeys 2200-0800 Monday to Thursday
- 2 – Extra £1 for all journeys 2200 Friday to 0800 Monday
- 3 – Extra £2 for all journeys 0200-0500 Saturday and Sunday
- 4 – Extra £1 for pre-booking
- 5 – Extra £1 for any journeys on Spring, May Day, Midsummer or Autumn holidays

- 6 – 50% surcharge on basic tariff from 2200 24 Dec to 0500 27 Dec and from 2200 31 Dec to 0500 3 January
- 7 – Extra £1 for all journeys commencing at Airport
- 8 – Extra £2 For each hiring dropping passengers at the inner forecourt of the airport (Non-airport zoned taxis only)
- 9 – Extra 50p for all journeys commencing at Aberdeen station
- 10 - £50 fouling charge
- 11 – Extra 50% to basic tariff and surcharges (but excluding 4, 7 and 8) for where more than four passengers carried

Private Hire and Taxi Monthly magazine publish monthly league tables of the metred fares for taxis in Licensing Authorities in the UK. The Tariff 1 fares for a two mile journey (distance costs only) are compared and ranked. The lower the ranking (number), the more expensive the journey, compared with other authorities. The July 2018 table indicated that the fares in Aberdeen were ranked 263 out of 366 authorities listed. This indicates that taxis in Aberdeen are cheaper than for most authorities.

A comparison of the fares ranking of Scottish authorities is presented in Table 3.

Table 3 - Average fare ranking of Scottish authorities

Local Authority	Fare	Rank
East Lothian	£6.80	30
Fife	£6.60	53
Moray	£6.60	57
Edinburgh	£6.35	85
Mid Lothian	£6.22	94
Argyll & Bute	£6.20	95
Shetland	£6.05	130
Aberdeenshire	£6.00	131
South Ayrshire	£5.90	166
Clackmannan	£5.80	174
Glasgow	£5.80	178
Highland	£5.80	180
East Ayrshire	£5.75	196
Scottish Borders	£5.75	197
East Kilbride	£5.70	199
Stirling	£5.70	207
Dundee	£5.66	209
Orkney	£5.60	223
Renfrewshire	£5.60	225
West Lothian	£5.60	231
Angus	£5.50	237
Dumfries & Galloway	£5.50	241
Aberdeen	£5.40	263
Dunbarton	£5.40	265
Perth & Kinross	£5.40	274
East Dunbartonshire	£5.34	281
East Renfrew	£5.30	285
Clydebank	£5.20	298
South Lanarkshire	£5.20	304
Inverclyde	£5.10	310
North Lanarkshire	£5.00	324
Western Isles	£4.85	336
Hamilton	£4.80	340
North Ayrshire	£4.80	342
Rutherglen	£4.80	344
Falkirk	£4.70	348

From 21st August 2018 a new fares table will be implemented. The new fares table has an effective increase of 5% on the distance metred rates, but leaves the minimum fare and surcharges as per the earlier 2017 fares table, (compared in the PHTM table)

The new fares table applicable from 21st August 2018 will be:

First 902.5 yards £2.40

Per additional 171.5 yards 20p

Waiting time £23 per hour

Extra charges:

- 1 – Extra £1 for all journeys 2200-0800 Monday to Thursday
- 2 – Extra £1 for all journeys 2200 Friday to 0800 Monday
- 3 – Extra £2 for all journeys 0200-0500 Saturday and Sunday
- 4 – Extra £1 for pre-booking
- 5 – Extra £1 for any journeys on Spring, May Day, Midsummer or Autumn holidays
- 6 – 50% surcharge on basic tariff from 2200 24 Dec to 0500 27 Dec and from 2200 31 Dec to 0500 3 January
- 7 – Extra £1 for all journeys commencing at Airport
- 8 – Extra £2 For each hiring dropping passengers at the inner forecourt of the airport (Non-airport zoned taxis only)
- 9 – Extra 50p for all journeys commencing at Aberdeen station
- 10 - £50 fouling charge
- 11 – Extra 50% to basic tariff and surcharges (but excluding 4, 7 and 8) for where more than four passengers carried

3 Patent demand measurement (rank surveys)

The Table below indicates the list of taxi ranks which were surveyed for this unmet demand survey. Most of the ranks in the city centre are either daytime ranks or night time ranks. Daytime ranks operate from 05:00 hours to 00:00 hours. At midnight, several ranks on Union Street become operative. These part time ranks are located in bus stop areas. The Union Street ranks operate from 00:00 to 05:00.

Rank	Spaces (approx)	Comments
Central Aberdeen		
Back Wynd	15	Daytime rank. Clearly signed and marked. Taxis face towards the junction with Union Street.
Chapel Street	7	Daytime rank. Clearly signed and marked. Taxis face towards junction with Union Street.
Dee Street	6	Daytime rank. Clearly signed and marked. Taxis face away from the junction with Union Street. The rank is split into two sections with drivers favouring the section which lies closer to Union Street, to wait for passengers. As a consequence, the more distant section is rarely used. This rank was surveyed as two separate sub-ranks, labelled Dee Street 1 and Dee Street 2. The Dee Street 1 section is closest to Union Street.
Hadden Street	10	Daytime rank. Clearly signed and marked. The rank is located to the rear of Aberdeen market.

St Andrews Street	4	This is a 24 hour rank. The rank is clearly marked in the roadway, but no signs are present. The hours of operation may be inferred from adjacent waiting restriction notice.
Night ranks (all on Union Street)		
Correction Wynd (Graveyard)	9	Central night rank with night rank signing. Located on north side of Union Street, with taxis facing east along Union Street.
Summer St	7	Western night rank with night rank signing. Located on the north side of Union Street, near Summer Street. Taxis face east along Union Street.
Soul Bar	8	Western night rank with night rank signing. Located on the South Side of Union Street near the Soul Bar pub. Taxis face west along Union Street.
Castlegate	4	Located at the eastern end of Union Street, Has night rank signing, located at eastern end of Union Street, as it extends into Castle Street. Taxis face east on to Union Street.
Private locations		
Railway Station	5	The railway station rank is located within the station. Operation at this rank is restricted to those with permits from Scotrail.

Airport, Main rank	10	<p>The main airport rank is located outside the terminal building. The airport operates as a separate zone to the City. Only taxis with airport zone plates may stand on the rank.</p> <p>Taxis approach the main rank through a series of feeder ranks. One of the feeder ranks is outside the Heliport.</p>
Airport, Heliport	2	<p>The Heliport rank is within the airport and hence falls within the airport zone. Taxis pass through this rank en-route to the main airport rank.</p>

Activity at all ranks, except the Railway Station was assessed from the morning of Thursday 3rd May to the morning of Sunday 6th May 2018. The Railway Station rank was assessed from the morning of Thursday 7th June to the morning of Sunday 10th June 2018. The volume of passengers and taxis was recorded, together with taxi vehicle queue lengths and waiting times or queue lengths for any waiting passengers.

Full details of tabulated hourly passenger and Taxi volumes and waiting times for Taxis, are presented in Appendix A. Summary results are presented below. The results for all ranks are presented in 3D graphs, in order that the relative magnitude of passenger volumes, vehicle volumes and vehicle waiting times at ranks, can be presented and compared across all ranks. In addition, data aggregated across all ranks is presented in simple line graphs, to present the profile of demand, and passenger waiting.

The taxi ranks were surveyed, using video cameras fixed to nearby lamp posts or sign posts. The footage was later processed to determine the volumes of passengers and taxis passing through each rank.

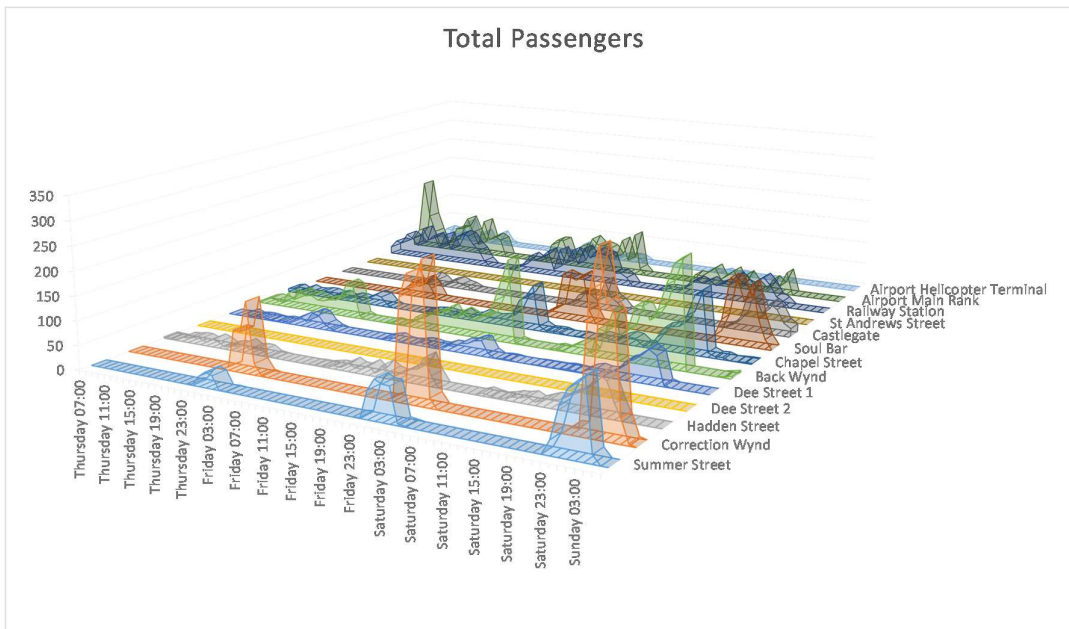


Figure 2 - Total passenger volumes using each rank

Figure 2 presents comparative profiles of passenger demand for each rank. The distinction between the city centre daytime and night time ranks can be clearly seen. The profile of demand is highest at night and increased on Friday, compared with Thursday and increased again on Saturday, compared with Friday. The busiest day time ranks were the Railway Station, Airport and Back Wynd ranks.

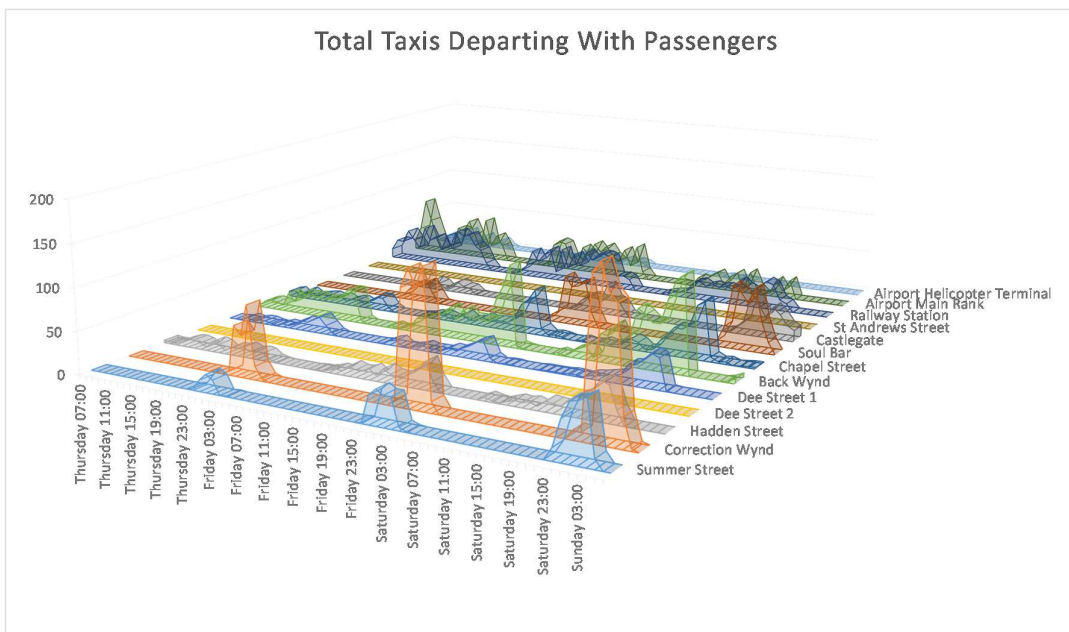


Figure 3 - Total taxis departing each rank with passengers

Not all taxis leave the rank with passengers on board. Some taxis are affiliated with a taxi/ private hire operator in Aberdeen. As such, some drivers may wait on a rank until a booking is received. Then the taxi may

leave the rank to service a booking. The profile of taxis which depart the rank with passengers follows a similar profile to the passenger profile. Varying load factors (number of passengers per taxi) at different ranks and different times of day, influence the profile.



Figure 4 - Total hourly taxi volume aggregated across all ranks

The profile of total taxi volumes indicates the variation in the volume of hires observed at the ranks. A feature in Aberdeen is that the volume of hires observed on Thursday was slightly higher in the evening than in the afternoon. However on Friday and Saturday, the late night demand was significantly higher. The variation in demand suggest that the demand profile is peaked, but not highly peaked.

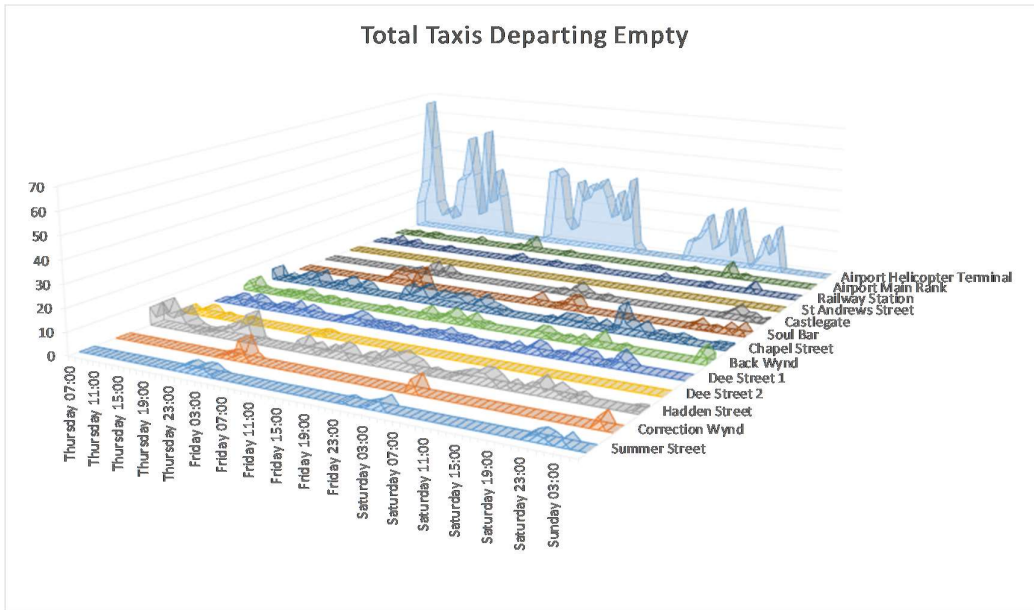


Figure 5 – Hourly total number of taxis which leave the ranks empty

Taxis may depart a rank without passengers for several reasons. The most common reasons are in response to a booking, or in order to move on to another rank which is felt to offer a better prospect of a hire. The rank at the Airport Helicopter Terminal acts as a feeder rank for the main rank at the airport. As such, many of the taxis which attend the main rank will pass through the Helicopter Terminal Rank. Consequently the number of empty departures from this rank is expected to be high. Virtually all empty departures from the Helicopter Terminal rank moved on to the Main Airport rank.

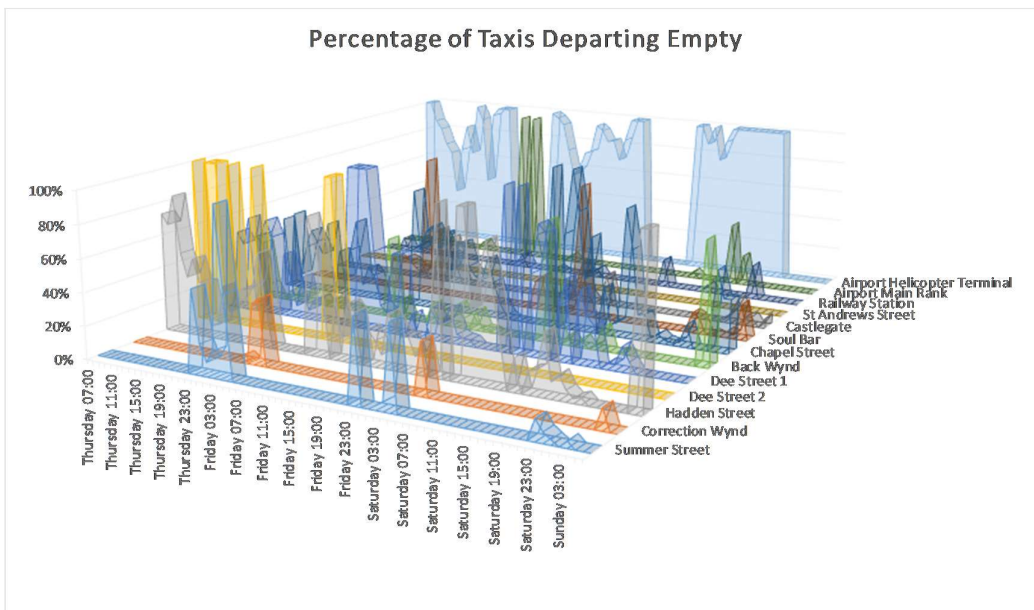


Figure 6 - Proportion of taxis at each rank which leave the ranks empty

The proportion of taxis leaving each rank empty, as a percentage of all taxis passing through each rank, varies significantly by location and time. Some ranks appear to be favoured by drivers who are more likely to depart the rank empty, during the day. For example, the Hadden Street rank appears to have had a high proportion of drivers leaving the rank empty.

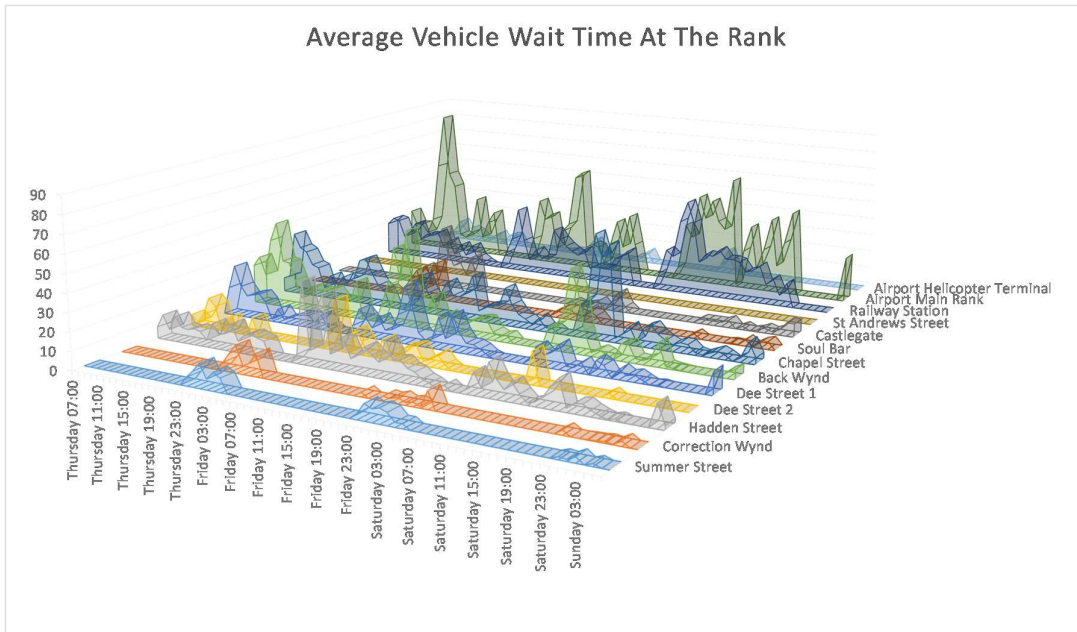


Figure 7 - Average vehicle waiting time [minutes] at each rank

The average time taxi vehicles spent waiting at taxi rank varies by location and by time of day.

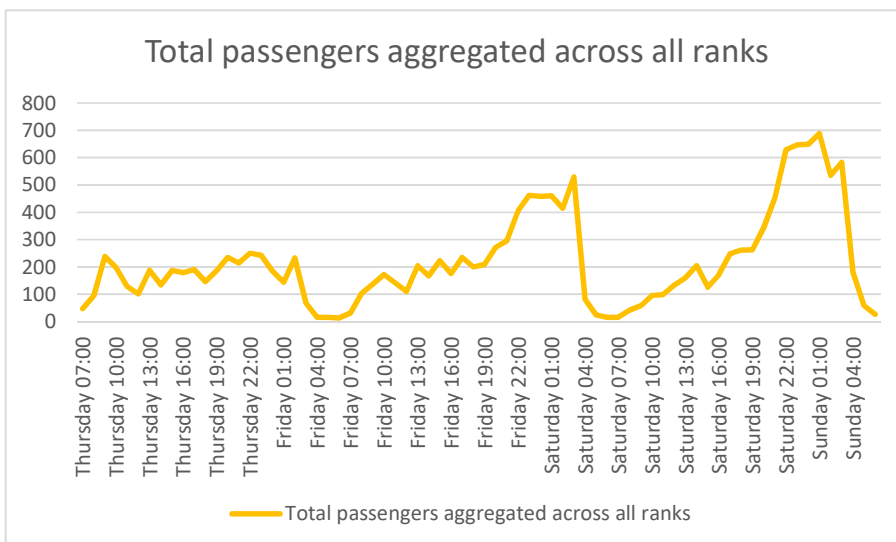


Figure 8 - Total passengers per hour

The profile of total passengers follows a similar profile to that of total hires across all ranks.



Figure 9 - Number of passengers who had to wait for a taxi

Passengers were deemed to have waited for a taxi to arrive at a rank if there were not taxis present at the rank and available for hire, when the passengers arrived. This is distinct from occasions when passenger queues formed at times of high demand, waiting to board a queue of waiting taxis. On such occasions, the passenger wait was due to the logistical operation of the rank, such as waiting for a queued vehicle to pull up to the boarding area, rather than due to lack of availability.

There was a notable spike in the number of waiting passengers on Thursday morning, however, there was no similar spike on Friday morning. Late afternoon on Thursday and Friday saw notable increases in waiting passenger numbers and also earlier on Saturday afternoon. It is noted that there is not a higher level of passenger waiting on Saturday night, during the period of peak demand.

A notable feature of the taxi rank at Correction Wynd, Union Street, on Saturday night, was that at peak times during the early hours of Sunday morning, there were lengthy queues of passengers waiting to board taxis. However, at the same time, there were also taxis waiting at the rank to pick up passengers. Passengers waiting at this time were not counted towards the total of passengers waiting for taxis to arrive at the rank, as taxis were present and available. The queue of waiting taxis extended to up to around 18 taxis. However, only the front two or three taxis were boarding passengers at any given time. Taxi marshals present at this time held the queue of passengers until the front of rank taxis, with passengers on board, had left. Then the next taxis in the queue would move forward and the passengers at the front of the queue would board. This practice limits the speed of boarding and hence leads to a queue of both passengers and taxis. Whilst this approach to taxi boarding may frustrate passengers, this practice is essential to maintain safety at the taxi rank.

In circumstance where there are no marshals present and there is a long queue of waiting taxis, large numbers of intending passengers can work their way down the queue, looking for an available taxi. This approach means that few passengers wait at the front of the rank, for taxis to approach. Consequently, once the first few taxis have loaded passengers and left the rank, the remaining drivers face the choice of driving past approaching passengers, towards the front of the rank, or waiting at the rear of the rank, for passengers to board. Similar issues were observed at the Railway Station rank from time to time. Generally, drivers asked passengers to return to the front of the rank to board the taxi and allow other taxis to get on to the rank. However, at late night ranks, when many passengers have been drinking, this approach is more difficult to implement, hence the importance of having taxi marshals present to maintain order and safety.

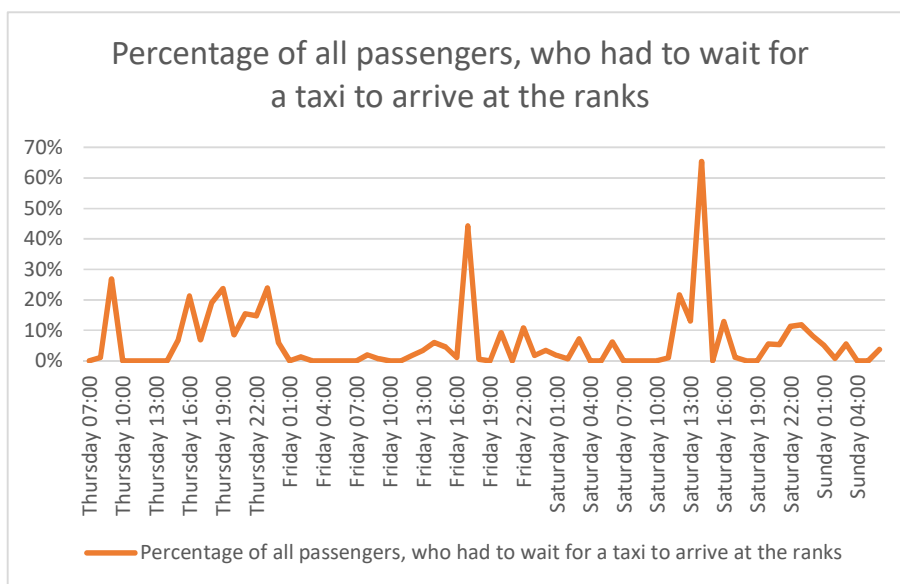


Figure 10 - Percentage of passengers who had to wait for a taxi

The proportion of all passengers who had to wait for a taxi to arrive at the ranks, varied. The peak was around 65% of passengers on Saturday afternoon, during a period of relatively low activity.

Aggregated over all passenger observations, 7% of all passengers had to wait for a taxi to arrive at the ranks. The proportion of passengers who had to wait on Friday and Saturday nights was similar to this overall average level.

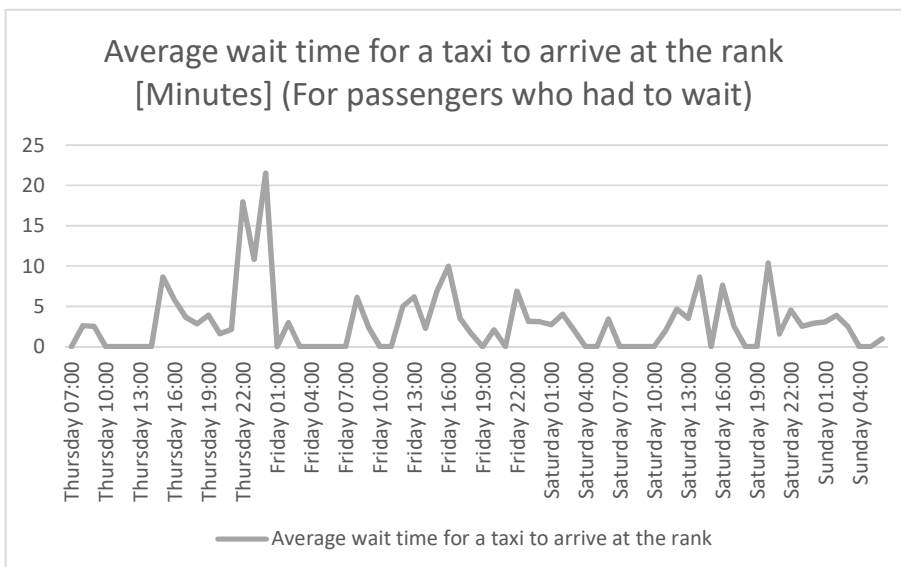


Figure 11 - Average wait time for passengers who had to wait for a taxi to arrive at the ranks

Passenger waiting was observed from time to time. There has been some concern regarding availability of taxis and private hire cars at peak times in the morning and late afternoon on weekdays. It is noted that there was a relatively small proportion of passengers had to wait for a taxi to arrive on Thursday and Friday mornings between 8:00 and 10:00 and during the afternoon on both days between 15:00 and 17:00. Waiting time for a taxi to arrive at the rank was generally less than ten minutes. However, on Thursday night, average waiting time was notably higher. Taking all passengers who had to wait for a taxi, the average waiting time was 5.33 minutes (5 minutes 20 seconds).

When we consider the average waiting time for all passengers, including those who didn't have to wait, the average wait time was 4 seconds.

Daily statistics from the rank surveys are presented in the following tables:

Table 4 - Daily rank statistics Thursday to Friday

Thursday - Friday						
Rank location	Total taxis departing the ranks empty	Total taxis departing the ranks with passengers	Total taxis departing the ranks	Total passengers departing the ranks	Average passengers per taxi	Average vehicle wait time at the ranks per taxi (minutes)
Total for all locations	738	2364	3102	3636	1.5	11
Summer Street	14	53	67	84	1.6	9
Correction Wynd	15	217	232	350	1.6	9
Hadden Street	87	131	218	174	1.3	9
Dee Street 2	0	0	0	0	0.0	0
Dee Street 1	37	104	141	149	1.4	8
Back Wynd	20	372	392	526	1.4	16
Chapel Street	53	148	201	198	1.3	16
Soul Bar	30	100	130	156	1.6	9
Castlegate	11	64	75	90	1.4	13
St Andrews Street	0	0	0	0	0.0	0
Railway Station	7	575	582	832	1.4	12
Airport Main Rank	6	507	513	875	1.7	19
Airport Helicopter Terminal	458	93	551	202	2.2	3

Table 5 - Daily rank statistics Friday to Saturday

Friday - Saturday						
Rank location	Total taxis departing the ranks empty	Total taxis departing the ranks with passengers	Total taxis departing the ranks	Total passengers departing the ranks	Average passengers per taxi	Average vehicle wait time at the ranks per taxi (minutes)
Total for all locations	647	3379	4026	5531	1.6	8
Summer Street	8	148	156	289	2.0	7
Correction Wynd	6	595	601	987	1.7	2
Hadden Street	61	200	261	290	1.5	10
Dee Street 2	0	0	0	0	0.0	0
Dee Street 1	21	129	150	181	1.4	8
Back Wynd	25	570	595	895	1.6	8
Chapel Street	63	265	328	415	1.6	9
Soul Bar	18	257	275	458	1.8	4
Castlegate	11	153	164	235	1.5	3
St Andrews Street	0	0	0	0	0.0	0
Railway Station	7	536	543	831	1.6	13
Airport Main Rank	9	446	455	803	1.8	21
Airport Helicopter Terminal	418	80	498	147	1.8	2

Table 6 - Daily rank statistics Saturday to Sunday

Saturday - Sunday						
Rank location	Total taxis departing the ranks empty	Total taxis departing the ranks with passengers	Total taxis departing the ranks	Total passengers departing the ranks	Average passengers per taxi	Average vehicle wait time at the ranks per taxi (minutes)
Total for all locations	405	3817	4222	6678	1.7	6
Summer Street	10	271	281	556	2.1	1
Correction Wynd	5	726	731	1176	1.6	1
Hadden Street	44	276	320	458	1.7	5
Dee Street 2	0	0	0	0	0.0	0
Dee Street 1	31	206	237	349	1.7	3
Back Wynd	23	788	811	1479	1.9	5
Chapel Street	52	348	400	632	1.8	6
Soul Bar	13	368	381	655	1.8	1
Castlegate	14	248	262	419	1.7	2
St Andrews Street	0	0	0	0	0.0	0
Railway Station	7	367	374	592	1.6	22
Airport Main Rank	8	214	222	350	1.6	34
Airport Helicopter Terminal	198	5	203	12	2.4	2

Table 7 - Aggregate rank statistics Thursday to Sunday

All 3 days					
Rank location	Total taxis departing the ranks empty	Total taxis departing the ranks with passengers	Total taxis departing the ranks	Total passengers departing the ranks	Average passengers per taxi
Total for all locations	1790	9560	11350	15845	1.7
Summer Street	32	472	504	929	2.0
Correction Wynd	26	1538	1564	2513	1.6
Hadden Street	192	607	799	922	1.5
Dee Street 2	0	0	0	0	0.0
Dee Street 1	89	439	528	679	1.5
Back Wynd	68	1730	1798	2900	1.7
Chapel Street	168	761	929	1245	1.6
Soul Bar	61	725	786	1269	1.8
Castlegate	36	465	501	744	1.6
St Andrews Street	0	0	0	0	0.0
Railway Station	21	1478	1499	2255	1.5
Airport Main Rank	23	1167	1190	2028	1.7
Airport Helicopter Terminal	1074	178	1252	361	2.0

As a sense check, it is prudent to consider the total observed hires against the number of taxis in the fleet. Currently there are 816 city taxis and 99 airport taxis, totalling 915 taxis. When we consider the total number of taxis departing the ranks with passengers (total rank based hires) against the number of taxis, the average number of hires per taxi was 10.5. This would imply that if all taxis were operating from the ranks and achieved an equal share of hires, each would have undertaken 10 to 11 hires over the three days observed. If we were to assume the average shift duration was 8 hours, this would imply an average of around one hire every two hours. This level of business could not sustain the fleet from rank based hires only.

The average number of waiting taxis, aggregated across all ranks, is presented for each hour in the following tables, along with the proportion of rank space occupied. The tables present data for all ranks excluding the Airport.

Table 8 - Aggregate waiting taxis at city ranks, Thursday to Friday

Hour beginning	Average total number of taxis waiting at ranks per hour: Thursday to Friday	Proportion of rank space used
07:00	19	31%
08:00	19	31%
09:00	28	46%
10:00	31	51%
11:00	28	45%
12:00	28	45%
13:00	25	41%
14:00	21	35%
15:00	17	28%
16:00	21	35%
17:00	14	22%
18:00	22	36%
19:00	19	31%
20:00	27	44%
21:00	20	33%
22:00	25	42%
23:00	25	41%
00:00	26	47%
01:00	28	50%
02:00	15	26%
03:00	11	20%
04:00	9	16%
05:00	11	18%
06:00	20	32%

Table 9 - Aggregate waiting taxis at city ranks, Friday to Saturday

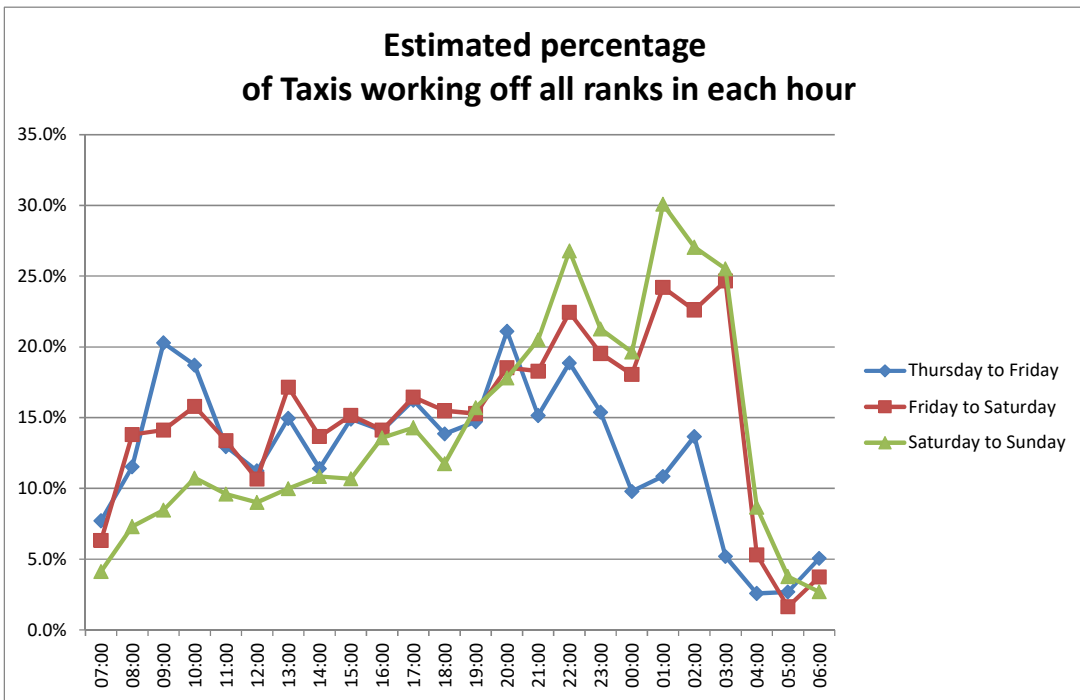
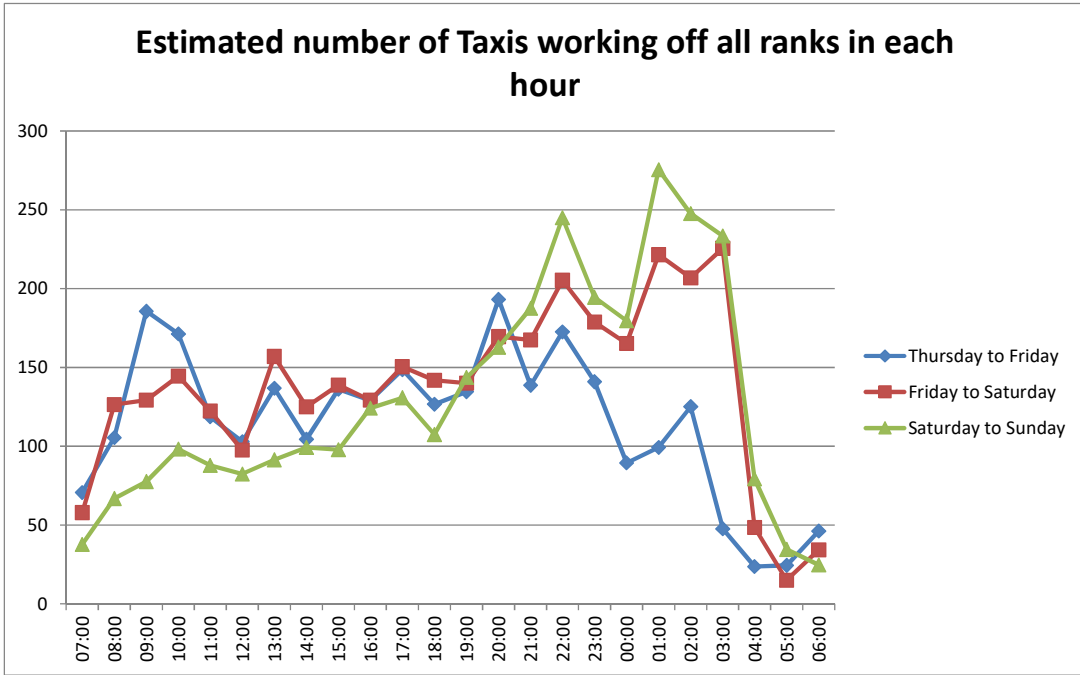
Hour beginning	Average total number of taxis waiting at ranks per hour: Friday to Saturday	Proportion of rank space used
07:00	22	36%
08:00	15	24%
09:00	17	28%
10:00	21	34%
11:00	24	39%
12:00	25	42%
13:00	24	39%
14:00	26	42%
15:00	16	27%
16:00	22	35%
17:00	20	32%
18:00	25	40%
19:00	27	44%
20:00	24	39%
21:00	27	45%
22:00	26	43%
23:00	28	45%
00:00	37	65%
01:00	23	41%
02:00	27	49%
03:00	15	27%
04:00	9	15%
05:00	4	7%
06:00	11	18%

Table 10 - Aggregate waiting taxis at city ranks, Saturday to Sunday

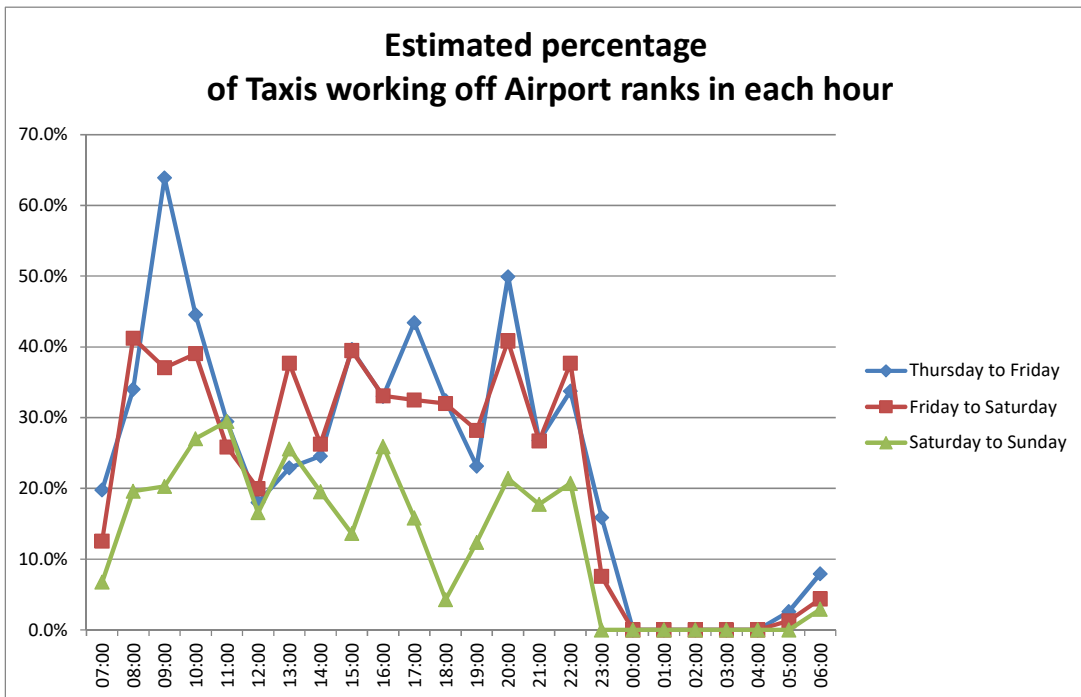
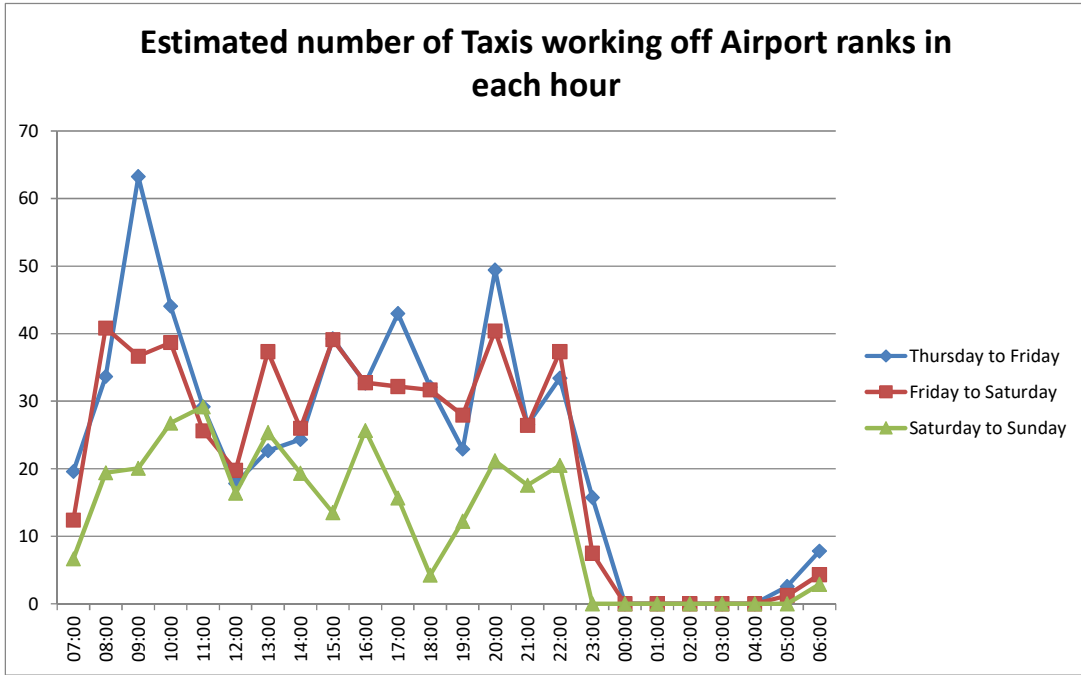
Hour beginning	Average total number of taxis waiting at ranks per hour: Saturday to Sunday	Proportion of rank space used
07:00	19	32%
08:00	24	39%
09:00	23	38%
10:00	21	34%
11:00	12	20%
12:00	14	23%
13:00	13	22%
14:00	12	19%
15:00	26	43%
16:00	25	40%
17:00	23	37%
18:00	21	34%
19:00	33	54%
20:00	27	44%
21:00	22	36%
22:00	19	31%
23:00	12	20%
00:00	16	28%
01:00	18	31%
02:00	27	48%
03:00	11	20%
04:00	8	15%
05:00	7	11%
06:00	4	6%

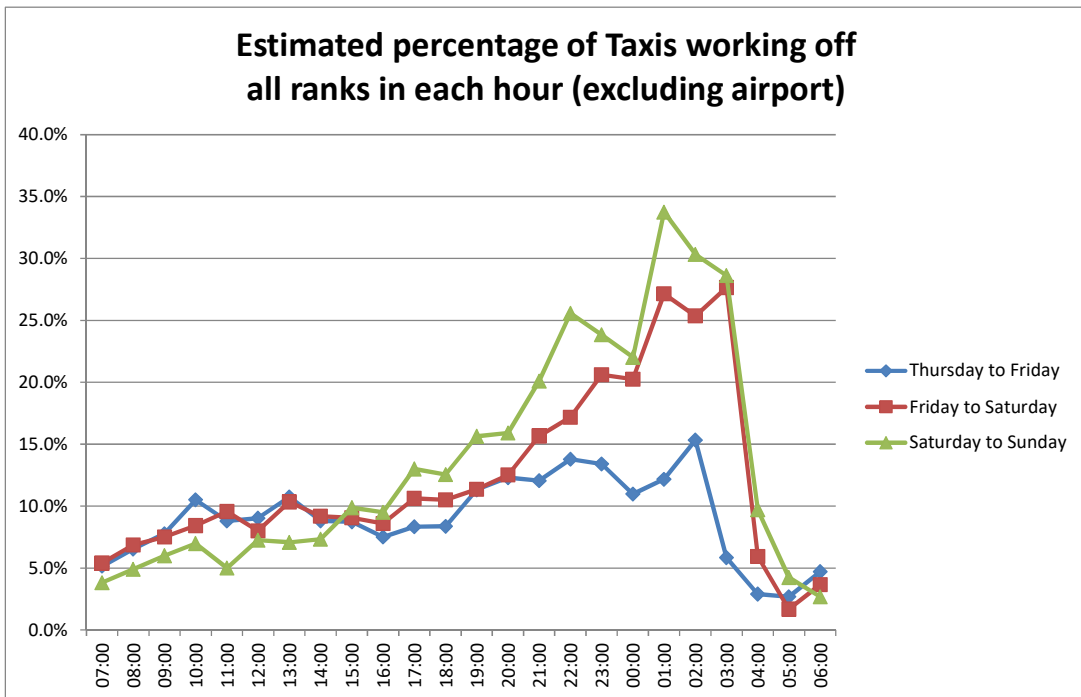
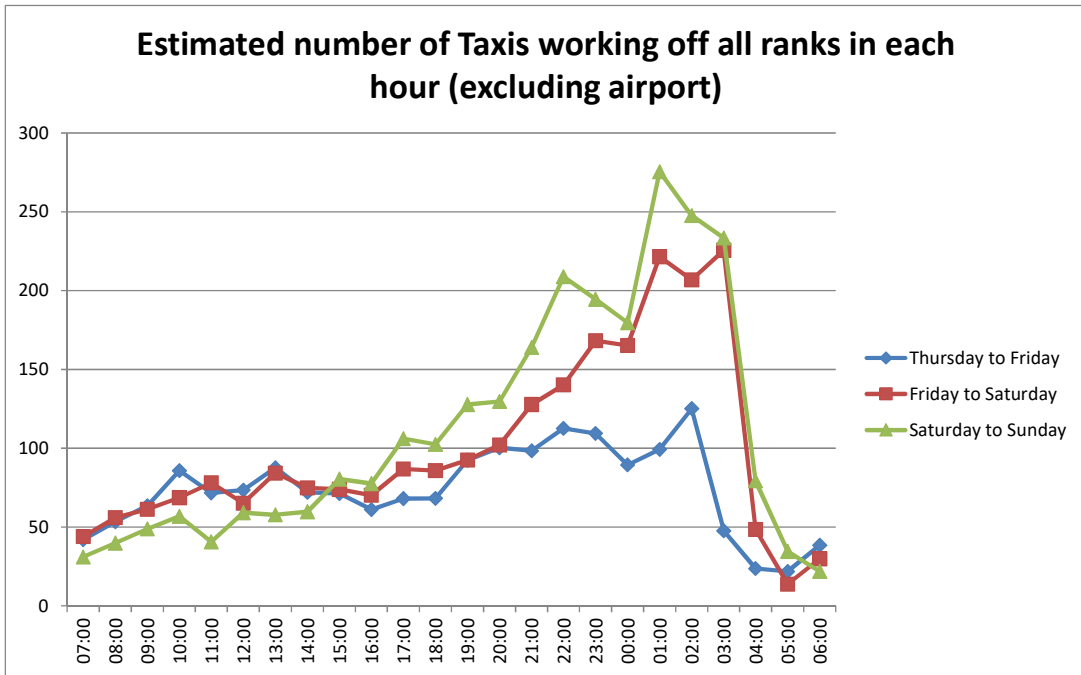
In addition to the taxis which were waiting at the ranks, at any given time, some taxis which were working from the ranks, were away from the ranks undertaking hires. The number of taxis engaged in hires at any given time was estimated, by using the average time taken between departing the ranks and returning to the ranks. The return time was derived from some sample observations of the time taken for taxis to depart with a fare and then return to the same ranks. The estimated number of taxis engaged on rank based hires, was added to the average number of taxis waiting at the ranks in each hour. The result provided an estimate of the total number of taxis working from the ranks in each hour.

The estimated total number of taxis working from the ranks in each hour is presented in the following figures:



Similar assessments were undertaken for airport only ranks and for all ranks excluding the airport ranks.





The time taken to return to the rank after departing with a hire ranged between around 20 minutes to around 45 minutes, at different times of day and at different ranks. The average number of hires per hour per taxi can be estimated at different times of day throughout the survey. The average number of hires per hour is presented in Table 11.

Table 11 - Average hires per hour

	Thursday to Friday	Friday to Saturday	Saturday to Sunday
07:00	0.5	0.4	0.3
08:00	0.7	0.7	0.4
09:00	0.7	0.8	0.5
10:00	0.7	0.8	0.6
11:00	0.7	0.8	0.7
12:00	0.7	0.8	0.9
13:00	0.8	0.9	1.1
14:00	0.8	0.9	1.1
15:00	0.9	1.0	0.8
16:00	0.9	0.9	0.9
17:00	0.9	1.0	1.1
18:00	0.8	0.9	1.3
19:00	1.0	0.9	1.1
20:00	0.8	1.0	1.2
21:00	1.0	1.1	1.3
22:00	0.9	1.2	1.4
23:00	1.1	1.7	1.8
00:00	1.4	1.8	2.1
01:00	0.9	1.2	1.3
02:00	1.1	1.2	1.3
03:00	0.9	1.3	1.4
04:00	0.6	1.2	1.5
05:00	0.6	1.3	1.2
06:00	0.2	0.4	0.9

4 General public views

It is very important that the views of people within the area are obtained about the service provided by taxi and private hire. A key element which these surveys seek to discover is specifically if people have given up waiting for taxis 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 taxi 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 taxis 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 taxis 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 (e.g. of students, or a sub-centre), although conclusions from these separate samples can only be indicative taken alone. For some authorities with multiple centres this can imply value in using a higher sample size, such as 250 if there are two large and one moderate sized centre.

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.

The survey obtained results from 400 interviews undertaken on street, together with a further 113 responses obtained through an online survey.

The results from the face to face and online survey are largely reported separately in the following table.

Table 12 - Public consultation survey results

Question	Response	Face to face interviews	Online survey
In the last three months, have you made one or more trips by taxi or private hire car in Aberdeen?	Yes	68%	84%
	No	32%	16%
For your most recent trip by taxi or private hire car, what kind of vehicle did you use?	Wheelchair accessible taxi vehicle	2%	14%
	Saloon car	68%	59%
	Minibus / people carrier	24%	23%
	Don't recall	6%	4%
Respondents were asked to describe the differences in ways that taxis and private hire cars may be hired. ?	Accurately described	58%	64%
	Inaccurately described	36%	36%
	Not Sure / Don't know	6%	
How did you hire the most recent taxi or private hire car that you used?	At a taxi rank	53%	28%
	Hailed in the street	4%	4%
	By telephoning a company	18%	39%
	By using a freephone	16%	17%
	By using an app or website	7%	10%
	By visiting a booking office	2%	2%
	Other, specify:	0%	0%
If you used an App or Website, which one did you use?	Rainbow	39%	33%
	Com Cab	39%	33%
	uBook		22%
	Aberdeen Taxis App		12%
	Don't know / can't recall	22%	

Question	Response	Face to face interviews	Online survey
[For those who hired by phone, app, website or booking office] Did you require a taxi or private hire car immediately or did you pre-book for another time?	Immediately	91%	71%
	Future	9%	29%
If pre-booked for another time, how close to the booked time did the taxi arrive?	10 minutes early		3%
	5 minutes early		15%
	On time	100%	67%
	5 minutes late		3%
	10 minutes late		5%
	15 minutes late		3%
If hired at a rank or hailed on street, did you have to wait for a vehicle to be available	Yes	0%	0%
	No	100%	100%
Were you satisfied with the service you received in terms of time to arrive and journey time?	Yes	84%	83%
	No	16%	17%
Could Taxi services in Aberdeen be improved?	Yes	14%	87%
	No	86%	13%
What improvements would you like to see? [Responses listed in order of popularity]	Lower cost		
	More reliable service		
	More taxis on the road at peak times		
	More of the comfortable saloon vans, rather than the wheelchair accessible taxis		
	Able to hire on street rather than just at the ranks.		
	Better Apps		
	Taxi offices answering phones		
Drivers charging according to the metred tariff and not over charging			

Question	Response	Face to face interviews	Online survey
For your most recent trip in a taxi or private hire car, how would you rate the following aspects, with 1 very poor and 5 very good [Average score presented]	Vehicle Cleanliness	3.9	4.0
	State of vehicle repair	3.9	4.2
	Driver behaviour	4.0	3.7
	Driver appearance	2.5	4.0
	Driver hygiene	2.9	4.0
	Driver attire / smartness	3.0	3.7
	Price	2.6	2.7
	Customer service	2.5	3.7
For any aspects that you rated poor or very poor, could you provide further details regarding why you provided this rating? [Responses listed in order of popularity]	High cost		
	Unhappy drivers		
	Drivers poorly dressed or presented		
	Taxis unhappy to take wheelchairs		
Regarding your last trip by taxi or private hire car, at what time of day you obtain your taxi?	Daytime, (before 6pm)	15%	38%
	Evening (Between 6pm and 10 pm)	58%	20%
	Night (after 10pm)	21%	41%
	Don't recall	6%	1%
Regarding this last trip: Were you or anyone in your party disabled? e.g. mobility impaired, visually impaired or a wheel chair user	Yes, another member of the party	0%	3%
	Yes, the respondent	0%	4%
	No	100%	93%
Was the vehicle used for the last trip suitable in terms of ease of access and egress?	Yes	100%	97%
	No		3%
Did you face any difficulties with your last journey in a taxi or private hire car?	Yes	0%	11%
	No	100%	89%

Question	Response	Face to face interviews	Online survey
If yes, please expand on what difficulties were faced.	Long waiting time		
	Poor attitude		
	Lack of availability of a saloon cars		
	Poor local knowledge		
	Assumption that all disabled people need a wheelchair accessible vehicle. Wheelchair vehicles are not always suitable for people with other disabilities		
Do you feel that there are enough taxis in Aberdeen? i.e. the ones with a TAXI sign on the roof which can be hired from a rank or by hailing	Yes	68%	58%
	No	27%	26%
	Don't know / no opinion	5%	16%
Do you feel that there are enough private hire cars in Aberdeen? i.e. the ones which need to be pre-booked.	Yes	68%	50%
	No	25%	20%
	Don't know / no opinion	7%	30%
Respondents were asked to name any taxi ranks in Aberdeen that they were aware of. Awareness was high, with all respondents, both face to face and online, able to name more than one valid rank.			
Are there any existing Taxi ranks that you would use more often if taxis were more reliably found there? If so, where?	Yes		26%
	No	100%	74%
The following ranks were mentioned by online respondents	Dee Street Union Street at night Market street Airport Castlegate Chapel St Station Hadden street Back Wynd		
Do you think more ranks are needed? If so, could you suggest any locations where you would like to see new taxi ranks?	Yes	0%	27%
	No	100%	73%

Question	Response	Face to face interviews	Online survey
Suggested new ranks:	Beach front University complex Outside the train station car park Union Square/Guild Street, Castlegate/Marschial Square area Queens road George Street, Kings Street, Robert Gordon's University Belmont street, Thistle/Rose street, Near Golden Square Broad Street, Holburn area .. Rosemount Albyn Place Holburn St Hospital		
What is the principal factor which limits your use of taxis, as opposed to private hire cars? Please choose the most relevant factor for you	Cost	55%	39%
	Waiting time	26%	7%
	Usually cycle or walk	4%	1%
	Use the bus instead	1.5%	19%
	No need to use taxis	1.5%	6%
	Drivers don't know the route	1.5%	1%
	The nearest taxi ranks are too far away	1.5%	6%
	I generally use a car	6%	16%
	I use Private Hire Cars	3%	3%
	I can't book one from home at night		1%
	Car cleanliness and driver attitude		1%
How often do you obtain a taxi from a rank in Aberdeen?	Every day	6%	4%
	At least weekly	51%	13%
	At least monthly	33%	38%
	At least once a year	2%	20%
	Less frequently	4%	17%
	Never	4%	8%

Question	Response	Face to face interviews	Online survey
How often do you book a taxi or private hire car by telephone or mobile app in Aberdeen?	Every day	3%	3%
	At least weekly	11%	13%
	At least monthly	2%	34%
	At least once a year	3%	22%
	Less frequently	81%	19%
	Never	0.0%	9%
How often do you obtain a taxi by hailing or flagging down a passing taxi without pre-booking in Aberdeen?	Every day	1%	1%
	At least weekly	10%	6%
	At least monthly	1%	24%
	At least once a year	2%	17%
	Less frequently	85%	36%
	Never	1%	15%
In the last three months, have you given up or made alternative arrangements when trying to hire a TAXI at a rank, or by flagging down, because none were available?	Yes	6%	21%
	No	94%	79%
In the last three months, have you given up or made alternative arrangements when trying to get a Taxi or private hire car by telephone because none were available?	Yes	15%	20%
	No	85%	80%
Which of the following do you think offers the best value for money?	Taxi	16%	5%
	Private Hire	42%	8%
	No difference	34%	55%
	No opinion	8%	32%
Have you had any problems with taxis or private hire cars in Aberdeen?	Yes	28%	37%
	No	72%	63%

Question	Response	Face to face interviews	Online survey
<p>Problems cited included:</p> <p>[Note; text in quotes (" ") are specific statements provided by individual respondents. Other text, not in quotes, form summaries of multiple responses.]</p>	<ul style="list-style-type: none"> • "Silly charges." • "Been kicked out because the taxi driver didn't like my sisters accent." • Poor levels of availability at night • Poor local knowledge. • Bad mannered drivers. • Aggressive drivers. • No taxis at a taxi rank • Cost. • Rude staff at the call centre. • "No notification that a booked vehicle had arrived." • "Price not consistent" • Arriving later than booked or not arriving for pre-booked trips. • "Arriving earlier than booked and telling you the meter is running." • "Drivers assuming you're drunk because you're using them on a Friday or Saturday evening and taking the long route round to the destination to drive up fares. " • "Taxis never responding to being hailed. " • Long wait times when booking by phone at weekend evenings • "Drivers taking the wrong route despite me asking for a specific route." • "A large number of current drivers are young foreign nationals who have no idea of the town or customer service, young males in particular are too interested in picking up the young female clientele. when you point out their issues they get very defensive and often suggest the "race" card." • "Some drivers at the Railway Station are rude and unhelpful to other rail station users in cars. • Arrival at airport - no taxis - 30mins wait" • "My partner cannot get into the new style cabs, because of her disability." • "Not using bus lanes when clear and traffic is tailed back on Union St." • "Ridiculous number of taxis don't take cards, when nearly 80% of customers now prefer card payments." • "Attitude of drivers can be very old fashioned; racist, homophobic, etc." • "Terrible attitudes towards paying customers. Industry seems stuck in the dark ages, and needs progress in use of technology, acknowledge how the demands of the market has moved on." • "Needs old fashioned drivers weeded out, and an injection of better tech, customer service, attitude." • "Many, overcharging, driving wrong way or long way, Charging extra for bags." • "Poor attitude because of second drop off, general bad mood" • "Multiple long waits for a taxi at the airport" 		

Question	Response	Face to face interviews	Online survey
Would any changes or features encourage you to use taxis or private hire cars more often? If so, please tell us what features.	Yes	28%	67%
	No	82%	33%
The most common changes suggested (in order of frequency) were:	<ul style="list-style-type: none"> • Lower fares • Reliability for bookings • Better apps for booking • Improved availability • Better driver attitude • Better customer service • Vehicles which are more accessible for disabled people (many of the wheelchair accessible vehicles are not suitable) • More female drivers and/or ability to request a female driver when booking 		
Are there any features of taxi services in Aberdeen that you feel are particularly good? If so, please tell us what features.	Yes		21%
	No		79%
	<ul style="list-style-type: none"> • Choice between saloon cars or wheelchair accessible vehicles. • Good local knowledge. • Pleasant and helpful drivers • Good availability of taxis • Good quality, well maintained vehicles • Booking Apps • Taxi marshals on the ranks on Union Street on Friday and Saturday nights • The use of meters in taxis and private hire cars • Local offices that can be contacted in the event of a problem • Feel very safe when taking a taxi 		

Commentary on public attitude surveys

A relatively high proportion of respondents had made a trip in the last three months by taxi or private hire car. The proportion amongst online respondents was higher than through the face to face respondents.

Saloon car type licensed vehicles were the most commonly used vehicle type.

It is important that respondents were able to understand the differences between how private hire cars and taxis may be hired. Check questions were asked to determine the respondents understanding of the differences. If the respondent was unsure, or indicated methods of hire which were erroneous, they were informed of the valid ways in which taxis and private hire cars may be hired.

The majority of respondents from both the face to face surveys and online surveys, were able to correctly identify the differences in valid hire methods.

Respondents were asked to indicate the way they had most recently hired a licensed vehicle. For the face to face respondents, rank hire was the most popular method of hire. For the online surveys, telephone booking was the most popular method.

Most bookings through an operator were for immediate hire.

Issues identified and improvements suggested related to a variety of issues. The most common issue identified was cost. This is a common issue identified in similar surveys around the country. Cost is normally the most frequently identified issue, irrespective of the level of fares charged in the area in question. Other issues identified appear to relate more closely to conditions in Aberdeen. Service reliability and service availability were amongst the more common issues raised. Another issue raised was the ability to hire taxis by hailing in the street. Some respondents indicated that they had been told that they could not hire a taxi anywhere other than at a rank.

Respondents were asked to rate various aspects of taxis and private hire cars. Driver appearance and driver hygiene and customer service levels were amongst the lowest rated aspects.

Some respondents indicated that wheelchair accessible vehicles can present difficulties for some people for access and egress and that some people prefer the comfort of a saloon car over that of a wheelchair accessible taxi.

The majority of respondents were generally happy with the level of service and levels of availability. However, some felt that improvements could be made to driver appearance and customer service, together with improved availability at night, especially on Friday and Saturday nights.

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 given stakeholders, but we try 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 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.

Supermarkets

No supermarkets indicated that there was any perceived issue with availability of licensed vehicles. When required, customers generally tended to call a private hire operator to arrange to be picked up. Some supermarkets had either a freephone to call an operator to book a licensed vehicle, or a 'button' to press, which would initiate a hire. Some supermarkets occasionally book licensed vehicles for customers. One supermarket has a customer for whom they regularly make a booking from the customer service desk.

Hotels

A range of large and small hotels in the City Centre and further from the centre were contacted. None indicated that they felt there was a persistent issue with availability. Some respondents indicated that there

could be a wait during peak periods on a Saturday night, or occasionally during weekday mornings. However, these seemed to be generally accepted as a fact of life and not an issue to be flagged. Some hotels have accounts with private hire operators, who they phone to book a licensed vehicle. Some hotels have a priority booking arrangement through a dedicated link to a private hire operator. The dedicated link can take the form of a tablet or a button to press on a terminal. City centre hotels also pointed out that there were taxi ranks nearby that customers would also use.

Public houses

A selection of public houses in the City Centre and in suburban areas were contacted regarding levels of service available. None of those contacted were aware of any issues with availability. Customers generally arrange their own bookings with mobile phones, so pubs don't normally become directly involved in booking travel. However, availability is not an issue which comes up in discussion either in the City Centre, or in suburban areas.

Night clubs

Night clubs were contacted by telephone and through direct contact with door staff at the venues. Management of clubs were not aware of issues with availability, but were not generally aware of what arrangements customers made for transport. It was assumed that most customers used the ranks on Union Street. Door staff were generally of the opinion that there was little point phoning for a taxi after midnight and customers usually went to the ranks on Union Street. These could involve a lengthy wait at closing time.

Other entertainment venues

The Aberdeen Exhibition and Conference Centre reception felt that there were no particular issues with availability of taxis to take people from the centre. There was a freephone available for people to use.

Local cinemas were contacted and were not aware of any particular issues.

Hospitals

Local hospitals were contacted regarding availability. None of the hospitals felt there was any issue with availability of licensed vehicles. Customers generally make their own arrangements to book travel. Most of the hospitals have a freephone or dedicated terminal which can be used to book a licensed vehicle.

Police

Informal discussions were held with police officers on Union Street late at night. The officers were familiar with the patterns of operation at the ranks and felt that demand generated by the night time economy was generally catered for. The use of space on Union Street for night time ranks was felt to be good practice as it kept all the passengers in one general area and minimised the potential for trouble to be caused. At peak times, passengers could face a wait at the ranks. Taxi marshals kept the queues in order. Taxis sometimes had to queue beyond the marked rank areas to get on the ranks.

Taxi marshals

Taxi marshals were asked their opinion of how taxi services worked on the night ranks on Union Street. The marshals felt that the ranks worked well and passengers knew they could find a taxi on one of the ranks late at night. Passengers could face lengthy waits when clubs closed and large numbers of people tried to hire a taxi from the ranks at the same time. Taxi marshals went round the ranks adjacent to Union Street and told passengers that the rank would be closed and the ranks on Union Street were open from midnight. Otherwise, if they didn't do this, people would wait at ranks such as Back Wynd after midnight, for a taxi to come to the rank.

Mobility impaired representatives

A range of people representing user groups who may face mobility difficulties were contacted. These included representatives of the elderly and disability representatives. In addition, a sample of care homes were contacted. Response levels for this element of consultation were low. However, those who could be contacted indicated that most people with mobility impairments who relied on licensed vehicles, had an established relationship with a preferred supplier. There were few problems with availability. Most trips were booked in advance. Trips which required a wheelchair accessible vehicle were generally well catered for, by regular providers. There was some anecdotal evidence that taxi drivers were less keen to take wheelchair bound passengers than wheelchair accessible private hire cars.

Rail and other transport operators

Stagecoach buses, railway station management and airport management were contacted.

The airport indicated that the supply of taxis generally worked well. Occasionally when multiple flights fed out of the airport at the same time, there can be a wait at the taxi rank for taxis to work around to the main rank. Occasionally, there are not enough taxis on the airport to cater for demand, for short periods. However, this is not the normal situation. Usually there are plenty taxis waiting on the feeder ranks at the airport but it can take time for the taxis at the front of the rank to leave and clear

the rank for other taxis to move forward and pick up passengers. If exceptional circumstances mean that the airport zone taxis are likely to be unable to cope with demand, there is potential for city taxis to be allowed into the airport to pick up passengers.

Stagecoach buses were not aware of any particular issues for passengers arriving by bus. There were normally taxis available in the railway station for any arriving bus passengers.

The railway station representatives felt that the taxi rank worked well and that the associations managed provision well. There were normally taxis waiting on the rank for arriving passengers. Occasionally, there were not enough waiting taxis for all arriving passengers and some had to wait for more taxis to come into the station rank.

Other Council contacts

Feedback was received regarding council contracts and provision for special need travel. All direct requirements are undertaken through contracts and there are no issues with the fulfilment of the contract travel. Anecdotal evidence indicates that there can be a shortage of licensed vehicles for ad-hoc hires during the morning peak period, when contract hires tend to be undertaken. This may be as a result of much of the fleet being engaged in contract hire work.

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 behaviour.

Most current studies tend to issue a letter and questionnaire to all taxi 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. However, it is also rare for there to be high levels of response, with 5% typically felt to be good and reasonable.

For this survey, a link to an online survey was distributed to the trade, directly through the Council and also by distributed leaflets handed out directly to a sample of drivers at the ranks. A total of 88 responses were received from the trade. This equates to approximately 6% response rate.

The responses to the survey are summarised in the following table.

Table 13 - Trade survey responses

Question		
Which of the options presented best describes the nature of your involvement in the licensed vehicle trade in Aberdeen?	I am a taxi driver, I don't own my own taxi	7%
	I am a taxi driver, I also own my own taxi	69%
	I am a taxi owner, I don't normally drive	1%

	I am a private hire car driver, I don't own my own private hire car	2%
	I am a private hire car driver, I also own my own private hire car	14%
	I own or represent a taxi/ private hire company operator, I also drive as licensed vehicle.	5%
	I own or represent a taxi / private hire company operator, I don't normally drive a licensed vehicle.	0%
	Taxi driver with a private hire plate	1%
	I own a fleet of cars and am the chairman of the Aberdeen taxi group. Also a licensed Driver and plate owner within the city of Aberdeen.	1%
How long have you been involved in the licensed vehicle trade in Aberdeen? (number of years)	0-5 Years	14%
	6-10 Years	23%
	11-15 Years	20%
	16-20 Years	13%
	21-25 Years	11%
	26-30 Years	13%
	31-35 Years	5%
	36-40 Years	2%
If you normally drive a taxi or private hire car, what affects your choice of shifts?	Family	34%
	Nothing / Preference	26%
	Demand	19%
	Traffic	16%
	Higher Tariffs & optimum times for business	3%
	Rude Customers	2%
Is the vehicle you normally drive also driven by someone else at other times? i.e. multi-shifted	Yes	5%
	No	95%

If yes, when?	I have two cars that are shared by husband and wife	
	Nights	
	Day Shift	
Do you operate on a booking circuit, from which bookings are allocated from a booking office via radio, data circuit or similar?	Yes	74%
	No	26%
This question is for taxi drivers. Which ranks do you NORMALLY work from each week?	Train station	19%
	Back Wynd	23%
	Dee Street	11%
	Chapel Street	22%
	Hadden Street	10%
	Airport	3%
	Union Street	12%
Do you consider there to be any particular issues with the operation of the current ranks in Aberdeen?	Not enough spaces on ranks	28
	Cars parking in taxi ranks	2
	Signage not big enough	2
	Lack of taxis able to take card payments	1
	Taxis overflow on zigzag lines and box junctions	1
	No Issues	23
By which method do you most frequently get your fares? I.e. which is the most common.	Phone or app bookings	49%
	Rank pickups	34%
	Hailing on street	1%
	School contracts, or other public sector contracts	1%
	Contracts with private companies	5%
	Office	5%
	Hailing on street, pre-arranged	1%
	Taxi booking office	4%
	Office radio	1%
Aberdeen currently limits the number of taxis. Do you think this remains the correct policy for his area?	Yes	92%
	No	8%
Is the supply of taxis adequate to meet the needs of the public?	Yes	96%
	No	4%

Is the supply of Private Hire Cars adequate to meet the needs of the public?	Yes		95%
	No		5%
How do you think having a limit on the number of taxis benefits the public?	Better quality service from the drivers to the public		9
	Limits the number of hours drivers work, so is safer		7
	Better standard of vehicle		5
	Stops too many taxis in the city		4
	Public will be able to hire a taxi on Saturday night		4
	Taxis will arrive on time/ can cover demand		3
Are there any factors which limit supply of taxis or private hire cars at certain times or in certain locations?	Traffic		18
	Saturday night- All of the night clubs closing at the same time		10
	Permits and plates limiting the ranks drivers can work on / Airport zoning		6
	Not wanting to work Saturday night / peak times because of drunk people		6
	Not enough ranks		4
	Ice and snow		1
	Taxi bookings		4
	Rank needed at AECC and ARI		1
	Large events		2
	Chapel street rank too small		1
Do any of the existing ranks need to be improved? If so, which and how could they be improved?	Esplanade	1	Not in an obvious place, and rank rules aren't enforced
	Hadden rank	1	Needs better signage to stop parking during operation
	Back Wynd	5	More spaces needed for waiting taxis
	Chapel Street	7	More spaces needed for waiting taxis
	Dee Street	3	More spaces needed for waiting taxis
	Union Street	5	More spaces needed for waiting taxis The middle Union street rank should be operational at night
	Airport	2	All taxis should be allowed to pick up / more than 1 company should be allowed to operate green plates
	Train station	2	All taxis should be allowed to pick up from the train station

	All city centre ranks	4	All ranks need updating: better signage and / or shelter More spaces needed for waiting taxis
	All ranks	15	More spaces needed for waiting taxis More ranks at different locations All ranks need updating: better signage and / or shelter
Do any new ranks need to be established? If so, where should they be located and why?	Yes	53%	Union Square AECC Bus station Railway station Bridge Street- Night rank ARI Square Castlegate Exchequer Row Outside main shopping areas Guild Street Bond Accord Centre Union Street- between Bridge Street and Dee Street Broad Street- for Marischal Night time rank near music hall Ship row Between Diamond Street and South Silver Street More smaller ranks to create better coverage
	No	47%	Public are aware of current ranks Don't think new ranks would get used

<p>Are you aware of any times or locations where members of the public may face difficulties hiring a taxi?</p>	<p>Late Saturday night Peak times, due to traffic- 7am-9am, 3pm-6pm Rail and bus stations AECC after an event Airport The health village McDonalds rank- Early hours on Saturday and Sunday Pittodrie Christmas and New Year</p>
<p>Are you aware of any times or locations where members of the public may face difficulties hiring a private hire car?</p>	<p>Saturday nights / Early Sunday Morning AECC after an event Peak times, due to traffic- 7am-9am, 3pm-6pm Christmas and New Year Bus station Train Station</p>

<p>And the final question, are there any other comments that you would like to make?</p>	<p>Action to be taken on people hiring out their multiple yellow plates No demand for all of the vehicles to be wheelchair accessible Action needs to be taken on illegal plying for hire taxis Fleet service tests need to be more consistent and relax their strict rules for the minor issues. Annoyed with spending £33 for retests The airport should be open for all taxis, not zoned Access to bus gates should allowed for taxis Bad decision to allow Uber into the city Too many taxis and private hire vehicles The knowledge test should remain Earnings have dropped 40%- 50% in the last 3 years. If more taxis introduced, this will continue to drop Plenty of taxis More attention needed to the presentation and dress code of the drivers No need to lower the limit for licensed vehicles in Aberdeen as the limit hasn't been even been reached Old people finding it difficult to get into higher multipurpose vehicles Private hire cars should be more recognisable as taxis All ranks in the city centre need to be marshalled after midnight at the weekend- issues with queue jumping Due to the downturn in oil and gas, less work in the city Saturday and Sunday early mornings, not enough taxis Private hire cars could get yellow plates to sort the lack of taxis on a Saturday night Red plate private hire cars could work ranks 01:00-04:00 Friday, Saturday and Sunday mornings I work more than 7 hours a day More bus lane cameras Taxis use some ranks (Union street) when they are not in operation Dee street rank to be used properly Hadden street rank has lots of parked cars when in operation- incl. blue badge holders Need to stop taxi drivers smoking in the vehicles Some drivers overcharge Private hire cars sitting at the ranks to collect fares (Windmill Brae and Crown Street)</p>
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The majority of respondents were owner drivers of taxis and the majority of respondents had more than 5 years experience.

There is very little double shifting of vehicles. Most respondents operate on a booking circuit. The most common means of obtaining a hire is through a booking circuit. Most respondents feel that there is an adequate supply of both private hire cars and of taxis.

A common suggestion for improvements to the ranks was to provide more space for waiting taxis. Several suggestions were made for locations for new ranks.

It was acknowledged that the public can face difficulties hiring a taxi late on Saturday night and during morning and evening peak periods. The morning and evening limitations are largely associated with traffic congestion rather than lack of supply of vehicles.

In addition to the feedback provided in the questionnaires, some discussion was held with driver on the ranks and with representatives of private hire operators. Comments from these discussions included a perception that some drivers work part time on a 'when they feel like it' basis.

Some drivers also suggested that amongst drivers of wheelchair accessible taxis, some drivers would avoid taking wheelchair hires if they could, as they found it too difficult deploying the ramp, boarding the wheelchair and securing the wheelchair. It was suggested that occasionally, a wheelchair accessible vehicle which was next in line for hire, at the head of the rank, would leave, if a wheelchair user was spotted approaching the rank.

Further comments relating to private hire operations in particular are covered under the private hire overprovision analysis section.

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 taxi rank and finds there is no vehicle there available for immediate hire. This can lead to a queue of people building up, some of who may walk off, 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 taxi 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 taxi 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.

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 taxis 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.

The first component which can be zero is the proportion of daytime hours where people are observed to have to wait for a taxi to arrive. The level of wait used is when the average wait time for any passengers who have to wait for a taxi to arrive is greater than one minute. 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 (for all passengers) 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 taxis.

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 taxi vehicles being available whilst they are not required for school contract work. Such periods can also reduce taxi demand with people away on holiday from the area. Generally, use of taxis 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 (factoring high demand level impacts down) to 1.2 for January / February (inflating the values from low demand levels upwards).

There can be special cases where summer demand needs to be covered, although high peaks for tourist traffic use of taxis 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 taxi 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 taxi rank waits as some, despite careful questioning, quote giving up waiting at home, which must be for a private hire vehicle (even if in taxi 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 and needs to be taken fully in context.

Calculation of ISUD variables

APD: The average delay is determined by calculating the total passenger delay as aggregate passenger delay minutes, then dividing by the total number of passengers, including those who did not suffer any delay.

The aggregate delays in passenger minutes was 6,240 minutes. If we divide by the total number of passengers observed, (15,845), the resultant average delay of 23 seconds equates to an APD value of 0.39 minutes. **APD = 0.39**

PF Whilst there is a peak in demand on Saturday night, the level of increase compared with daytime levels is not sufficient to define the profile as highly peaked. **The PF value is 1.0.**

SSP Week day, daytime hours are deemed to be between 10.00 am and 6.00 pm. The data from Thursday and Friday observations was analysed to determine whether there were any occasions when passengers were delayed by more than one minute on average, at any rank. The calculated value was 6.5%., **SSP value = 6.5**

GID The percentage of taxi users travelling in hours where the average passenger delay exceeds one minute was assessed. Total passengers travelling in hours when the average passenger wait for all passengers exceeded one minute was 1,432, which equates to 9.0%. **GID = 9.0**

SF Due to the nature of these surveys it is not possible to collect information throughout an entire year to assess the effects of seasonality. Experience has suggested that taxi demand does exhibit a degree of seasonality and this is allowed for by the inclusion of a seasonality factor. The factor is set at a level to ensure that a marginal decision either way obtained in an "untypical" month will be reversed. This factor typically takes a value of 1 for surveys conducted in September to November and March to June, i.e. "typical" months. It takes a value of 1.2 for surveys conducted in January and February and the longer school holidays, where low demand the absence of contract work will bias the results in favour of the Hackney trade, and a value of 0.8 for surveys conducted in December during the pre-Christmas rush of activity. For this study, given that trade volume is higher during the summer, a factor of 1.0 is assumed. **SF = 1.0**

LDF Latent Demand Factor. This is derived from the public attitude interview survey results and provides a measure of the proportion of the public who have given up trying to obtain a taxi at either a rank or by flagging down. It is measured as 1+ proportion giving up waiting. The inclusion of this factor is a response to the latest DfT guidance requiring an estimate of latent demand. **LDF = 1.06**

The ISUD value was calculated as follows, using the variables derived for this study.

$$\text{ISUD} = \text{APD} \times \text{PF} \times \text{SSP} \times \text{GID} \times \text{SF} \times \text{LDF}$$

$$\text{ISUD} = 0.39 \times 1.0 \times 6.5 \times 9.0 \times 1.0 \times 1.06 = 24.6$$

Where the ISUD value is less than 80, it is generally considered to be an indicator that there is no unmet demand for taxis which is significant. The ISUD result indicates that there is **no significant unmet demand.**

8 Private Hire Car overprovision analysis

Whilst there is legislative provision to enable licensing authorities to limit the number of taxis which are registered, until relatively recently, there was no such provision to limit the number of private hire cars. However, the Air Weapons and Licensing (Scotland) Act 2015 made provision, through the introduction of three new subsections to the Civic Government (Scotland) Act 1982, for a licensing authority to limit the number of private hire cars, if it were determined that there was an overprovision of private hire cars.

Unlike limiting taxis, there was no government guidance regarding assessment of private hire car numbers, for the purpose of determining whether there was overprovision, beyond the provisions of subsections 3A, 3B and 3C of Section 10 of the Civic Government (Scotland) Act 1982.

The newly added subsections of Section 10 of the Civic Government (Scotland) Act 1982 are as follows:

"(3A) Without prejudice to paragraph 5 of Schedule 1, the grant of a private hire car licence may be refused by a licensing authority if, but only if, they are satisfied that there is (or, as a result of granting the licence, would be) overprovision of private hire car services in the locality (or localities) in their area in which the private hire car is to operate.

(3B) It is for the licensing authority to determine the localities within their area for the purposes of subsection (3A) and in doing so the authority may determine that the whole of their area is a locality.

(3C) In satisfying themselves as to whether there is or would be overprovision for the purposes of subsection (3A) in any locality, the licensing authority must have regard to—

(a) the number of private hire cars operating in the locality, and

(b) the demand for private hire car services in the locality."

The approach adopted, to determine whether overprovision existed in Aberdeen addressed the provisions set out above.

The approach to assessing private hire car provision was similar in some respects, to the approach adopted to determine whether there was unmet demand for taxis which was significant. The approach for assessing private hire cars included public consultation and stakeholder consultation, which was also undertaken for the assessment of taxi demand.

Whilst patent demand for taxis can be assessed through direct observation of hires at ranks, there is no equivalent measure which can be applied to private hire car patent demand. As an alternative, information was sought from private hire operators in Aberdeen.

The private hire trade in Aberdeen is distinguished by the following key features:

- The private hire market is serviced primarily by a small number of large operators. There are few small 'one man band' operators.
- The private hire operators use a mixture of private hire cars and taxis to service bookings.
- Virtually all private hire cars operate taximeters.
- The taximeters use the same tariffs for both taxis and private hire cars. So there is no cost differential between private hire cars and taxis.

Private hire operators were asked to provide the following information:

- The number of bookings per hour.
- The number of bookings per hour which were not for immediate hire.
- The average journey distance, or average fare per hour.
- The average wait time quoted for immediate bookings.
- The average time between bookings for drivers.
- The number of different drivers which were servicing bookings each hour.

The information was requested, covering the following periods:

- Thursday 3rd May 2018 from 7:00 to 10:00
- Thursday 3rd May 2018 from 14:00 to 17:00
- Thursday 3rd May 2018 from 22:00 to 03:00 on Friday 4th May 2018
- Friday 4th May 2018 from 7:00 to 10:00
- Friday 4th May 2018 from 14:00 to 17:00
- Friday 4th May 2018 from 22:00 to 03:00 on Saturday 5th May 2018
- Saturday 5th May 2018 from 14:00 to 17:00
- Saturday 5th May 2018 from 22:00 to 03:00 on Sunday 6th May 2018

The data which was provided is commercially confidential. Therefore, the reporting of analysis needed to respect this confidentiality and avoids directly reporting on specific data for individual operators.

All airport taxis (those with licences for the airport zone) are affiliated with Aberdeen Airport Taxis. The airport operates a system on which a taxi will log in on arrival at the airport and get a queuing number on the data head in the vehicle. As taxis are hired at the main rank at the airport terminal, they leave the queue system and the queue number reduces for other vehicles in the queue. The queue number indicates where on the system

of feeder ranks and ranks a vehicle should join, when returning to the airport. Airport taxis will also accept bookings for trips to the airport from elsewhere in Aberdeen.

With respect to taxis with city licences, approximately 60% of taxis operate on the systems of the private hire operators. This equates to approximately 490 of the 826 city taxis. Approximately 250 private hire cars also operate on the circuits of the main private hire operators.

Data presented in the following tables relates to aggregate data for all operators who responded with data. The proportion of the fleet refers to the proportion of all taxis and private hire cars which are affiliated with the private hire operators and which may log into the booking systems from time to time.

Operators were not able to provide separate data for bookings fulfilled by taxis and those fulfilled by private hire cars. Bookings are normally assigned to vehicles nearest the journey origin irrespective of licensed vehicle type.

Table 14 - Private hire operator data Thursday to Friday

Hour beginning	Thursday 7:00	Thursday 8:00	Thursday 9:00		Thursday 14:00	Thursday 15:00	Thursday 16:00		Thursday 22:00	Thursday 23:00	Friday 00:00	Friday 01:00	Friday 02:00
Bookings per driver per hour	1.92	1.97	1.50		1.56	1.86	1.62		2.02	2.59	2.09	0.92	1.28
Proportion of the private hire fleet on the system each hour (Including both private hire cars and taxis affiliated with operators)	24%	30%	33%		30%	29%	27%		10%	10%	7%	6%	6%
Average time between driver jobs (minutes)	11	11	11		11	11	11		15	15	15	16	15

Table 15 - Private hire operator data Friday to Saturday

Hour beginning	Friday 07:00	Friday 08:00	Friday 09:00		Friday 14:00	Friday 15:00	Friday 16:00		Friday 22:00	Friday 23:00	Saturday 00:00	Saturday 01:00	Saturday 02:00
Bookings per driver per hour	1.76	2.11	1.54		1.83	1.99	1.84		2.83	3.88	1.97	1.32	1.33
Proportion of the private hire fleet on the system each hour (Including both private hire cars and taxis affiliated with operators)	23%	26%	29%		28%	26%	25%		14%	15%	14%	12%	9%
Average time between driver jobs (minutes)	11	11	11		13	13	13		10	10	10	10	10

Table 16 - Private hire operator data Saturday to Sunday

Hour beginning	Saturday 14:00	Saturday 15:00	Saturday 16:00		Saturday 22:00	Saturday 23:00	Sunday 00:00	Sunday 01:00	Sunday 02:00
Bookings per driver per hour	2.56	1.92	2.47		2.95	4.12	2.86	2.53	2.33
Proportion of the private hire fleet on the system each hour (Including both private hire cars and taxis affiliated with operators)	17%	16%	15%		18%	17%	16%	13%	11%
Average time between driver jobs (minutes)	15	15	15		1	1	1	1	1

Further comments and feedback received

Comments received from operators suggested that the peak proportion of the fleet operating through private hire operators occurred during weekday mornings, between 7:00 to 10:00. From this peak, the proportion on the system would steadily decline. The proportion of vehicles logged on to the system rarely exceeds around 30%.

Drivers are self-employed and generally free to choose their working hours. Some taxi drivers can be logged on to the system and wait for jobs on the ranks. Other taxi drivers will wait close to the destination of the last hire, waiting for the next hire through the system.

Practices vary between operators, with some systems leaving drivers free to ignore system bookings on occasions when they are on a rank and close to the front of the queue. Other operators do not leave drivers free to operate in this way and a condition of the system is that bookings are a priority and should be serviced by the nearest available taxi, even if that vehicle is on a rank and close to the front position.

On Friday and Saturday nights, the volume of calls trying to book a hire can increase dramatically. If the first operator called cannot provide a vehicle within an acceptable timeframe then a caller will try another operator, moving on down the list. With this increased volume of calls, the call handlers cannot always answer all calls. Consequently the number of calls to operators which are unanswered can be higher at peak demand times. This can be a source of frustration for those attempting to book a licensed vehicle.

It was thought that the public do not feel they can rely on licensed vehicles to get home from a night out. Therefore, demand is not as high as it could be, with some members of the public making alternative arrangements, rather than relying solely on booking a licensed vehicle to get home. Alternative arrangements can be arranging with friends or family to pick up for the trip home. In addition, students and teenagers arrange lift sharing through social media.

Whilst operators use both taxis and private hire vehicles, to service bookings, it is felt by some that the differentiation is blurred. There is a single licence for drivers of both private hire cars and of taxis. A knowledge test is required for the dual vehicle type licence.

Private hire operators recognise the value in the market sector which requires wheelchair accessible vehicles and investment in suitable vehicles has been made, to address this market demand. It was felt by some that amongst taxi drivers, some of those with wheelchair accessible taxis were not keen on undertaking bookings requiring a wheelchair accessible vehicle.

Assessment of the level of provision

The overall level of provision of private hire vehicles per 1,000 population for Aberdeen is low in comparison to the Scottish average. If we take the total fleet size of both private hire cars and taxis which are working on booking circuits, this equates to a fleet of approximately 740 vehicles. This equates to 3.2 vehicles per 1,000 population. This total is higher than the average private hire car ratio for Scotland, but lower than the ratios in Edinburgh and Glasgow and several other authorities. Whilst the number of licensed vehicles working in the private hire market includes a significant number of taxis, the assessment of private hire cars with respect to overprovision, relates to private hire cars only. Therefore, whilst most operators utilise a mixture of both taxis and private hire cars, it is the level of provision of private hire cars which is assessed. The number of private hire cars registered in Aberdeen was 257 at the time of the survey. In terms of private hire cars per 1,000 population, this proportion is lower than the Scottish average.

The rate of hourly hires for vehicles working on the booking circuits is higher than the rate for taxis working off the ranks. The wait time between hires for vehicles working on booking circuits does not appear to be excessive, as would be expected if there was an overprovision. If we assume that private hire cars operate at a similar level of utilisation per vehicle as taxis working on the booking circuits, then the statistics regarding booking frequency and wait times between bookings indicate that the level of provision is not excessive.

With regard to the number of private hire cars and the estimated total number of private hire bookings undertaken, the existing fleet of private hire cars could not fulfil the current level of demand without the capacity provided by taxis working on private hire booking systems. Taking into account the indicators derived from private hire operators and the relative levels of provision in Aberdeen, the assessment concludes that there is **not** an overprovision of private hire cars in Aberdeen.

9 Demand profiles

All licensed vehicles

The demand profiles for taxis and private hire bookings exhibit some differences. The peak period for private hire bookings is generally the morning on weekdays and late pre-midnight on Saturday night. With taxis, the opposite tends to be true, with levels of demand building through the day and late into the evenings.

The following tables compare observed rank based hires with the estimated private hire booked hires, on Thursday Friday and Saturday to Sunday, for periods covered by data obtained.

Table 17 - Estimated total hires Thursday to Friday

Thursday to Friday													
Hour beginning	07:00	08:00	09:00		14:00	15:00	16:00		22:00	23:00	00:00	01:00	02:00
Extrapolated total hires (Booked)	344	440	367		344	393	325		152	189	110	43	55
Total Hires (Taxi rank)	37	76	123		88	126	119		157	156	128	93	137

Table 18 - Estimated total hires Friday to Saturday

Friday to Saturday													
Hour beginning	07:00	08:00	09:00		14:00	15:00	16:00		22:00	23:00	00:00	01:00	02:00
Extrapolated total hires (Booked)	304	409	332		385	381	336		298	422	202	122	86
Total Hires (Taxi rank)	23	82	95		108	132	113		229	275	286	266	238

Table 19 - Estimated total hires Saturday to Sunday

Saturday to Sunday									
Hour beginning	14:00	15:00	16:00		22:00	23:00	00:00	01:00	02:00
Extrapolated total hires (Booked)	318	227	271		392	522	342	236	186
Total Hires (Taxi rank)	111	77	108		342	346	382	364	311

In the early hours of each morning, the number of booked hires dropped off, whilst the number of rank based hires remained at similar levels to pre-midnight levels.

There is a view amongst operators that if more drivers could be incentivised to work the early hours of the morning, that more hires would be undertaken. An increased level of availability of bookable private hire cars or taxis would also increase service levels to areas not served by the night ranks on Union Street.

Potential measures to incentivise drivers to work late night shifts

The current taxi fares table which is used by both taxis and private hire cars allows for surcharges for late evening and weekend working. For some drivers, this is sufficient incentive to operate during these unsocial periods, on the basis that the fares are higher and the hires more frequent. However, many other drivers prefer to work the day shift.

Drivers are self employed and work patterns often fit around other household commitments. Drivers choose preferred working hours for a variety of reasons.

The incentivisation of drivers to work more unsocial hours is a common issue to be addressed in different areas. In some areas with limited numbers of taxis, many vehicles are multi-shifted, with both day and night shifts covered.

In locations where the number of private hire cars outnumber taxis, this removes the option of working from the ranks for most of the licensed vehicle fleet and hence drivers tend to work the periods of greatest demand, including late night shifts.

In Aberdeen, the composition of the licensed vehicle fleet and predominance of taxis in the private hire operator fleets presents some challenges which are unique to Aberdeen. The drivers are generally experienced drivers who have developed working patterns and knowledge of demand patterns over many years.

It was generally felt that the working patterns would need to change to better address the patterns of demand and to address the potential latent demand for late night pre-booked hires.

The most common method of incentivising drivers is through the fares tariff. The current fares tariff achieves this with fixed surcharges.

Other options such as that used by Uber, are to operate a variable pricing structure in response to demand. This incentivises drivers and incentivises passengers to travel during less expensive periods. This approach can smooth demand profiles and smooth the profile of supply of vehicles to meet demand. As Aberdeen private hire cars almost all operate with taximeters, a surge pricing multiplier on the meter rate is not feasible. This is especially so for taxis, which are limited to metered fares for any trips within Aberdeen, whether through direct hire or pre-booked hire. An alternative to surge pricing to incentivise drivers to work peak and unsocial periods, could be to add a new tariff to the fares table, with increased distance based charges for late night operation.

The options for incentivising drivers to work during unsocial periods would need to be carefully considered and widely consulted upon, before any particular measures are implemented. This section merely highlights some of the options which could be explored.

10 Rank review

As a component part of the overall survey undertaken, the Licensing authority instructed a review of the current taxi rank provision and location within the city in order to identify whether any additional ranks should be provided.

Existing ranks were reviewed from the perspective of a visitor and from the perspective of a mobility impaired user.

Each rank was reviewed against several criteria and the results of the review are tabulated in this section.

Back Wynd

Land use characteristics on the vicinity	The head of the rank is at the junction with union street. The local buildings within 200 metres contain a mixture of shops, offices, licensed premises and residential properties. The proximity to shops and licensed premises generates demand throughout the day and late into the evening.
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	No shelter is available at this rank.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the right side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. Wheelchair bound passengers can face difficulty with some wheelchair accessible vehicles, with fixed side loading wheelchair ramps. Such vehicles have ramps which are mounted below the cab floor and are deployed to the nearside (left) of the vehicle. As such, wheelchair passengers need to board from the roadway, rather than the pavement. This can present an obvious potential additional risk from passing traffic. Rear loading wheelchair accessible vehicles, or those with manual ramps, which can be mounted on either side of the vehicle, don't face the same difficulties. Vehicles boarding passengers via rear mounted ramps often need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.

Kerb height and distinction	Kerbs along the rank are lowered for the full length of the rank, but not flush with the road surface. Kerb stones and paving stones are a different colour to the road surface, which helps the visually impaired to distinguish the kerb. Lowered kerbs can lead to difficulties for some people with mobility impairment boarding some models of wheelchair accessible taxis with high floors. Conversely, high kerbs, such as those used at bus stops, can present difficulties boarding saloon cars with low floors and low doors.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Council CCTV cameras.
Visibility from other localities	The rank and waiting passengers are visible from along Back Wynd and from a short but busy section of Union Street. Coupled with the busy nature of the location, it is likely that any passengers waiting at the rank will be visible to other pedestrians. The presence of other people within sight helps to provide an enhanced sense of security to waiting passengers.
Signage	The rank itself is clearly signed. There is also signage on Union Street. There is no signage at the Schoolhill junction with Back Wynd.
Markings	There are no road markings to delineate the taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.
Posted hours of operation	A sign adjacent to the taxi rank indicate that the rank is not operational between midnight and 5:00 am and that an adjacent rank on Union Street is active between midnight and 5:00 am. The sign indicates that the rank has capacity for 15 taxis.
Effective hours of operation	The rank was generally attended by taxis from 5:00 continuously through to midnight.

Chapel Street

Land use characteristics on the vicinity	The head of the rank is at the junction with union street. The local buildings within 200 metres contain a mixture of shops, offices, licensed premises and residential properties. The proximity to shops and licensed premises generates demand throughout the day and late into the evening.
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	No shelter is available at this rank.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. Wheelchair bound passengers can be boarded via side loading ramps. However, the pavement width may not be sufficient to enable the wheelchair to clear the end of the ramp, without the taxi moving away from the kerb beforehand. Vehicles boarding passengers via rear mounted ramps often need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are standard height for the full length of the rank. Kerb stones are dark grey whin stone and similar colour to the paving slabs and road surface. However, yellow lines in the roadway help the visually impaired to distinguish the kerb.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Council CCTV cameras.
Visibility from other localities	The rank and waiting passengers are visible from along Chapel Street and from a short but busy section of Union Street. There are some fast food outlets opposite the rank, which ensure that there are people present until late at night. Owing to the the busy nature of the location, it is likely that any passengers waiting at the rank will be visible to other pedestrians. The presence of other people within sight helps to provide an enhanced sense of security to waiting passengers.
Signage	The rank itself is clearly signed. There is also signage on Union Street.
Markings	There are clear road markings to delineate the taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.

Posted hours of operation	A sign adjacent to the taxi rank indicate that the rank is not operational between midnight and 5:00 am and that an adjacent rank on Union Street is active between midnight and 5:00 am. The sign indicates that the rank has capacity for 7 taxis.
Effective hours of operation	The rank was generally attended by taxis from 5:00 continuously through to midnight. On Saturday night, there were frequently taxis present after midnight.

Dee Street

Land use characteristics on the vicinity	The head of the rank is at the junction with union street. The local buildings within 200 metres contain a mixture of shops, offices, licensed premises and residential properties. The proximity to shops and licensed premises generates demand throughout the day and late into the evening.
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	No shelter is available at this rank.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. Wheelchair bound passengers can be boarded via side loading ramps. However, the pavement width may not be sufficient to enable the wheelchair to clear the end of the ramp, without the taxi moving away from the kerb beforehand. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are lowered for the full length of the rank, but not flush with the road surface. Kerb stones are dark grey whin stone and similar colour to the paving slabs and road surface. However, yellow lines in the roadway help the visually impaired to distinguish the kerb.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Council CCTV cameras.
Visibility from other localities	The rank and waiting passengers are visible from along Dee Street and from a short but busy section of Union Street. There is also a fast food outlet on the corner of Dee Street and Union Street. This draws people to the location until late at night. Owing to the busy nature of the location, it is likely that any passengers waiting at the rank will be visible to other pedestrians. The presence of other people within sight helps to provide an enhanced sense of security to waiting passengers.
Signage	The rank itself is clearly signed. There is also signage on Union Street.
Markings	There are clear road markings to delineate the taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.

Posted hours of operation	A sign adjacent to the taxi rank indicate that the rank is not operational between midnight and 5:00 am and that an adjacent rank on Union Street is active between midnight and 5:00 am. The sign indicates that the rank has capacity for 6 taxis.
Effective hours of operation	The rank was generally attended by taxis from 5:00 continuously through to midnight.
Other remarks	The rank is split into two bays. The rank faces away from Union Street and the street is a one way street leading from Union Street. Taxis tend to wait on the first section of the rank, closer to Union Street. From this position, taxis have the option of continuing along Dee Street, or turning left on to Langstane Place, which would then provide flexibility to travel to the north, east and west. Taxis waiting on the second section of the rank can only travel south from this location.

Hadden Street

Land use characteristics on the vicinity	The rank lies off Market Street. The local buildings within 200 metres contain a mixture of shops, offices, licensed premises and residential properties. The proximity to shops and licensed premises generates demand throughout the day and into the evening.
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	No shelter is available at this rank.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. Masonry planters are placed periodically along the pavement, adjacent to the rank. These planters limit space where they are located and may prevent side loading wheelchair accessible taxis from deploying side loading ramps. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are lowered and flush with the road surface. Kerb stones and paving stones are a similar colour to the road surface, but the pavement and road surface have different textures. The different textures may help visually impaired passengers detect the edge of the pavement. Lowered kerbs can lead to difficulties for some people with mobility impairment boarding some models of wheelchair accessible taxis with high floors.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Council CCTV cameras.
Visibility from other localities	Whilst the rank is adjacent to Aberdeen market, there is limited frontage onto the area. A pub overlooks the rank area and the rank is visible from a short section of Market Street. The location is reasonably busy during the day, but less busy at night with passing pedestrians. In the evening, waiting passengers may not feel as safe as in other locations with more people within sight.
Signage	The rank itself is clearly signed. There is also signage on Union Street, at the junction with Market Street.
Markings	There are road markings to delineate the taxi rank bays. However, there is no text on the road markings to indicate that the marked bays are a taxi rank.

Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.
Posted hours of operation	A sign adjacent to the taxi rank indicate that the rank is not operational between 23:00 Friday night to 5:00 am Saturday morning and 23:00 Saturday night to 5:00 am Sunday morning and that alternative ranks on Union Street is active between these times. The sign indicates that the rank has capacity for 10 taxis.
Effective hours of operation	The rank was generally attended by taxis from 5:00 continuously through to midnight.
Other remarks	The rank bays cover two sides of the road. However, the marked bays on the south side of the road are often used by parked or waiting cars and vans.

St Andrew Street

Land use characteristics on the vicinity	The local buildings within 200 metres contain a mixture of shops, offices, licensed premises and residential properties. The locality is dominated by retailing and this is the closest rank to the Bon Accord Shopping Centre.
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	No shelter is available at this rank.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. Masonry planters are placed periodically along the pavement, adjacent to the rank. These planters limit space where they are located and may prevent side loading wheelchair accessible taxis from deploying side loading ramps. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are standard height for the full length of the rank. Kerb stones are dark grey whin stone and similar colour to the paving slabs and road surface. However, yellow lines in the roadway help the visually impaired to distinguish the kerb.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Council CCTV cameras.
Visibility from other localities	The rank and waiting passengers are visible from along St Andrew Street. The location is relatively busy during the daytime, when shops are open. However, in the evenings, the number of passing pedestrians is lower. The presence of other people within sight helps to provide an enhanced sense of security to waiting passengers. Waiting passengers at this location are unlikely to benefit from perceived safety of nearby pedestrians, however there is a Hilton Hotel adjacent to the rank which is active until late at night
Signage	The rank itself is not clearly signed. There no nearby signage to identify the presence of a rank. There is no information regarding operating hours. However, parking and waiting restrictions posted on adjacent signage infer that the rank is a 24 hour rank.
Markings	There are road markings to delineate the taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.

Posted hours of operation	There are no posted hours of operation.
Effective hours of operation	The rank was unused throughout the period of the survey.

Correction Wynd (Night rank on Union Street)

Land use characteristics on the vicinity	The rank lies on Union Street at Correction Wynd. The local buildings within 200 metres contain a mixture of shops, offices, licensed premises and residential properties. The proximity to licensed premises generates demand late at night.
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	No shelter is available at this rank.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. There is plenty room for side loading wheelchair accessible taxis to board a passenger in a wheelchair. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are standard height. Kerb stones are dark grey whin stone and are a similar colour to the road surface and pavement surface. There are yellow lines on the roadside which may help visually impaired passengers detect the kerb location.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Council CCTV cameras.
Visibility from other localities	The rank location is highly visible from along Union Street. The locality is generally busy with passing pedestrians and approaching passengers. The presence of other people may help passengers feel safe at this rank.
Signage	The rank itself is clearly signed with an internally illuminated taxi rank sign at the kerb side. There are signs on the nearby daytime ranks advising of the operation of ranks on Union Street between midnight and 5:00 am..
Markings	There are road markings to delineate the taxi rank bay. These include text on the road markings to indicate that the marked bay is a taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.

Posted hours of operation	There are no posted signs indicating hours of operation. Regular users who are familiar with the switch from the nearby daytime ranks, to the Union Street ranks at midnight will know the hours of operation. However, visitors may see the illuminated taxi rank signs, before midnight and deduce from the lack of taxis, that the rank is not in operation, rather than the rank operates on a part time basis.
Effective hours of operation	The rank was generally attended by taxis from before midnight until after 4:00 am.

Summer Street

Land use characteristics on the vicinity	The rank lies on Union Street at Summer Street. The local buildings within 200 metres contain a mixture of shops, offices, licensed premises and residential properties. The proximity to licensed premises generates demand late at night.
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	No shelter is available at this rank
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. There is plenty room for side loading wheelchair accessible taxis to board a passenger in a wheelchair. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are standard height. Kerb stones are dark grey whin stone and are a similar colour to the road surface and pavement surface. There are yellow lines on the roadside which may help visually impaired passengers detect the kerb location.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Council CCTV cameras.
Visibility from other localities	The rank location is highly visible from along Union Street. The locality is generally busy with passing pedestrians and approaching passengers. The presence of other people may help passengers feel safe at this rank.
Signage	The rank itself is clearly signed with an internally illuminated taxi rank sign at the kerb side. There are signs on the nearby daytime ranks advising of the operation of ranks on Union Street between midnight and 5:00 am..
Markings	There are road markings to delineate the taxi rank bay. These include text on the road markings to indicate that the marked bay is a taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.

Posted hours of operation	There are no posted signs indicating hours of operation. Regular users who are familiar with the switch from the nearby daytime ranks, to the Union Street ranks at midnight will know the hours of operation. However, visitors may see the illuminated taxi rank signs, before midnight and deduce from the lack of taxis, that the rank is not in operation, rather than the rank operates on a part time basis.
Effective hours of operation	The rank was generally attended by taxis from before midnight until after 4:00 am.

Soul Bar

Land use characteristics on the vicinity	The rank lies on Union Street near the Soul Bar pub. The local buildings within 200 metres contain a mixture of shops, offices, licensed premises and residential properties. The proximity to licensed premises generates demand late at night.
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	A bus shelter is available close to the head of the rank.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. There is plenty room for side loading wheelchair accessible taxis to board a passenger in a wheelchair. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are standard height. Kerb stones are dark grey whin stone and are a similar colour to the road surface and pavement surface. There are yellow lines on the roadside which may help visually impaired passengers detect the kerb location.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Council CCTV cameras.
Visibility from other localities	The rank location is highly visible from along Union Street. The locality is generally busy with passing pedestrians and approaching passengers. The presence of other people may help passengers feel safe at this rank.
Signage	The rank itself is clearly signed with an internally illuminated taxi rank sign at the kerb side. There are signs on the nearby daytime ranks advising of the operation of ranks on Union Street between midnight and 5:00 am..
Markings	There are road markings to delineate the taxi rank bay. These include text on the road markings to indicate that the marked bay is a taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.

Posted hours of operation	There are no posted signs indicating hours of operation. Regular users who are familiar with the switch from the nearby daytime ranks, to the Union Street ranks at midnight will know the hours of operation. However, visitors may see the illuminated taxi rank signs, before midnight and deduce from the lack of taxis, that the rank is not in operation, rather than the rank operates on a part time basis.
Effective hours of operation	The rank was generally attended by taxis from before midnight until after 4:00 am.

Castlegate

Land use characteristics on the vicinity	The rank lies on Castle Street at the east end of Union Street. The local buildings within 200 metres contain a mixture of shops, offices, licensed premises and residential properties. The proximity to licensed premises generates demand late at night.
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	A bus shelter is available adjacent to the rank.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. There is adequate room for most side loading wheelchair accessible taxis to board a passenger in a wheelchair. However the bus shelter located at the head of the rank limits the available space at this part of the rank. Between the bus shelter and the kerb, there is adequate space for most side loading taxis to deploy wheelchair ramps. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are standard height. Kerb stones are dark grey whin stone and are a similar colour to the road surface and pavement surface. There are yellow lines on the roadside which may help visually impaired passengers detect the kerb location.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Council CCTV cameras.
Visibility from other localities	The rank location is highly visible from along Union Street and Castle Street. The locality is generally busy with passing pedestrians and approaching passengers. The presence of other people may help passengers feel safe at this rank.
Signage	The rank itself is clearly signed with an internally illuminated taxi rank sign at the kerb side. There are signs on the nearby daytime ranks advising of the operation of ranks on Union Street between midnight and 5:00 am..
Markings	There are road markings to delineate the taxi rank bay. These include text on the road markings to indicate that the marked bay is a taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.

Posted hours of operation	There are no posted signs indicating hours of operation. Regular users who are familiar with the switch from the nearby daytime ranks, to the Union Street ranks at midnight will know the hours of operation. However, visitors may see the illuminated taxi rank signs, before midnight and deduce from the lack of taxis, that the rank is not in operation, rather than the rank operates on a part time basis.
Effective hours of operation	The rank was generally attended by taxis from before midnight until after 4:00 am.

Railway Station

Land use characteristics on the vicinity	The rank lies within the curtilage of the railway station and primarily serves railway passengers. The rank operates in conjunction with train arrival times and during station opening times.
Pavement width	The pavement, at the pick up point, at the head of the rank, is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Shelter available	The whole rank area is located under a roofed area of the station.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. Large concrete blocks are placed along the edge of the rank, between the vehicle waiting space and the pedestrian footway. Passengers can pass around the concrete blocks to approach and board taxis. If a wheelchair bound passenger wishes to hire a side loading wheelchair accessible taxi, this would either require the taxi to be located at the first position on the rank, where there is ample space to deploy a side loading ramp, or the taxi would need to move away from the concrete blocks to leave sufficient space to deploy side loading ramps. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	The rank is marked on asphalt with the vehicle and pedestrian spaces delineated by road markings. Effectively there is no kerb and the pedestrian and vehicle spaces are flush with each other. The edge of the pedestrian area is marked with lines painted on the asphalt. There is no difference in height, or surface texture between pedestrian and vehicle space. This may present some difficulty for visually impaired passengers, to detect the edge of the pedestrian space.
Lighting	The rank area is well lit.
CCTV coverage	The rank location is covered by railway operator CCTV cameras.
Visibility from other localities	The rank area is visible from the main concourse area. There are generally passengers and staff within sight, which is likely to lead to enhanced perception of safety.
Signage	The rank itself is signed by a worn sign with missing letters on the sign. There is signage elsewhere in the station, indicating where the rank is located.

Markings	There are road markings to delineate the taxi rank bays, with text on the road markings to indicate that the marked bays are a taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.
Posted hours of operation	There are no posted hours of operation.
Effective hours of operation	The rank was generally attended by taxis from 05:00 continuously through to just after midnight, coinciding with train arrival times.

Airport Main Rank

Land use characteristics on the vicinity	The rank lies outside the main airport terminal. There is a lengthy shelter adjacent to the rank area, to allow passengers to shelter from the weather whilst waiting to board taxis. The rank services passengers from the airport only.
Pavement width	The pavement is effectively enclosed within the shelter adjacent to the taxi rank. Only passengers intending to board taxis would use this section of pavement, so there is no need to pass other passengers.
Shelter available	A lengthy shelter is available for passengers.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. Whilst up to around ten vehicles can wait on the main rank bay, only the first two or three positions are suitable for passenger boarding. The first position, has space beside the vehicles, to allow a side loading ramp to be deployed for boarding passengers in wheelchairs. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are standard height. Kerb stones and asphalt paving is a similar colour to the road surface.
Lighting	The area is well lit. Lights within the passenger waiting shelter are activated by motion detectors at night.
CCTV coverage	The rank location is covered by airport CCTV cameras.
Visibility from other localities	Visibility to the rank is limited by the shelter. However, the intrinsically safe nature of the airport, with higher levels of security and awareness compared with most public areas, is likely to enable passengers to feel safe if waiting for a taxi.
Signage	The rank itself is clearly signed. There is also signage elsewhere in the airport to identify the rank location..
Markings	There are road markings to delineate the taxi rank bays. There is text on the road markings to indicate that the marked bays are a taxi rank.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.
Posted hours of operation	There are no posted operating hours.
Effective hours of operation	The rank was generally attended by taxis from 7:00 continuously through to midnight.

Airport Helicopter Terminal

Land use characteristics on the vicinity	The rank lies outside the passenger entrance to the helicopter terminal. The ranks serves demand from passengers arriving at the heliport
Pavement width	The pavement is wide enough to enable pedestrians to pass intending passengers waiting for taxis or boarding taxis.
Suitability for loading passengers in wheelchairs.	The taxis wait at the rank with the left side of the vehicle to the kerb. This presents no difficulties for able bodied passengers for boarding. Vehicles boarding passengers via rear mounted ramps may need to pull forward to allow sufficient space from the vehicle behind, to deploy the ramp and leave space for the passenger to approach the ramp.
Kerb height and distinction	Kerbs along the rank are standard height. Kerb stones and paving surface is a similar colour to the road surface.
Lighting	The street is well lit.
CCTV coverage	The rank location is covered by Airport CCTV cameras.
Visibility from other localities	The rank is located on a lightly trafficked road and where few pedestrians pass. The road in this location is straight and the rank is visible from neighbouring buildings.
Signage	The rank itself is clearly signed.
Markings	There are road markings to delineate the taxi rank bay.
Suitability of access and egress for taxis	Taxis can readily access the rank. Taxis can leave the rank from a middle position if required.
Posted hours of operation	Adjacent signage indicates that the rank is operational 24 hours per day..
Effective hours of operation	The rank was generally attended by taxis from 7:00 continuously through to 23:00 hours.
Other remarks	The rank forms part of the feeder rank system for the main airport rank. Consequently there is generally a high volume of taxis passing through the rank, on the way to the main rank. However, at busy times at the main rank, taxis may be directed to go straight to the main rank and bypass the feeder rank at the helicopter terminal..

Suggestions for additional rank locations

Several locations were suggested by members of the public and by the trade, for new taxi ranks. These have been reviewed for suitability with respect to nearby land uses, potential road space to locate the ranks and suitability of such potential road space, together with the likelihood of a rank space becoming established.

In order to implement a new taxi rank, appropriate consultation would need to be undertaken and if the proposed locations were agreed, then

appropriate traffic regulation orders would need to be defined and implemented then the rank defined with appropriate road markings and signage. This can be a time consuming and involved process. Therefore, implementing a new rank is not something to be undertaken lightly.

Following the definition of a new rank with appropriate signage and markings, this does not in itself guarantee that the rank will be regularly used by the travelling public or regularly occupied by taxis, available for hire. In order for a new rank to come into use, it needs to become established by both the trade and by passengers. A marked rank space is not guaranteed to become established if taxis cannot be reliably found there or if passengers do not regularly use the rank. Therefore, locations chosen for new ranks should be evaluated against the likelihood of sufficient passenger demand at different times of day and the likelihood of taxis waiting on the ranks to service such demand. In some cases, a suitable rank location can become established through informal use of a road space by taxis ranking informally. Such practice can demonstrate a viable level of demand and supply and help to justify a location for subsequent formal provision of a rank. However, in many instances, new rank locations can be identified through other means such as examination of local land uses, proximity of other existing ranks and local geography and traffic management arrangements. It should also be borne in mind that an informal rank location, whilst demonstrating a level of demand and willingness to supply taxis to meet that demand, does not guarantee that the location is suitable for a rank. Other considerations such as adjacent land uses and traffic management arrangements may preclude a location from use as a taxi rank. For example, a rank which would be active at night may not be suited to location adjacent to ground floor residential properties.

Locations suggested for new ranks have been evaluated as follows:

Beach front

The beach front, along The Esplanade is a popular leisure location, with leisure facilities, dining and retailing land uses. Retailing is largely edge of town character, with ample car parking. There is an existing taxi rank marked on the Esplanade. The Esplanade taxi rank was not included in the rank survey as it was not felt to be in sufficiently regular use to influence the results of the survey. The level of night time economy activity is likely to be low in this area and unlikely to generate sufficient business to attract taxis to the rank on a regular basis at night. The rank is more likely to be attended during day time in the summer, when the beach front premises are busiest.

University complex

The main campus of the University of Aberdeen is likely to generate some day time demand. However, the density of retailing and other business

premises in this area is low and a rank in this area is unlikely to become established. As such, a marked rank would be unlikely to be regularly attended by waiting taxis.

The main campus of Robert Gordon University is situated to the edge of a mainly residential area. A marked rank in this area would be unlikely to become established with regular availability of waiting taxis. Day time demand is likely to be low and there is little night time economy in this area.

Outside the railway station car park / Union Square / Guild Street, Bus Station

This area is currently served by the rank within the railway station. The railway station rank is serviced by taxis with an additional permit from the railway operating company. The existing rank is not on the public road.

The area around the railway station is dominated by retailing, with the Union Square and Trinity Centre shopping centres. In addition, the bus station is nearby and there are several night time economy venues in the area.

Opposite the railway station vehicle entrance on Guild Street, is the Station Hotel. Outside the Station Hotel is a road space which is out of the main flow of traffic, by virtue of a built-out section of pavement which forms part of the pedestrian crossing at this location. The resultant road space is marked with double yellow lines denoting waiting restrictions. However, the space is used by taxis as an informal ranking location and appears to have become established. Taxis were seen waiting in this location on several occasions, during site visits.

By virtue of the established practice of taxis waiting at this location, there appears to be demand for taxis at this location. There also appears to be sufficient road space available to form a rank for three taxis at this location, without the need for kerb re-alignment or other significant roadworks.

Guild street is a one way street outside the Station Hotel. Therefore, a new rank in this location would be used by taxis waiting on the right hand side of the road and passengers would need to board the right hand side of the taxis. This could present problems for passengers in wheelchairs boarding wheelchair accessible taxis using side mounted ramps. The location, whilst outside the running lanes of passing traffic, is located in a busy one way system. If the smooth running of traffic in this location were disturbed by taxis queueing to enter the rank and hindering passing traffic, this could have a significant impact on capacity along this stretch of road and potentially impact on upstream capacity. Notwithstanding the limitations highlighted earlier, other aspects of the location suggest it is suitable for a new rank. The kerbs are standard height kerbs and the

width of the pavement in this location is suitable to allow pedestrians to pass waiting passengers without hinderance. The location is covered by Council CCTV and is a suitably busy location with frequent passing vehicles and pedestrians to enable passengers to feel safe using this location as a taxi rank.

Castlegate / Marischal Square area (also suggestions for King Street, and Broad Street)

Whilst the existing Castlegate rank serves this area at night, the nearest day time rank is Hadden Street. The land use in this area is a mixture of business, residential retail and licensed premises. The density of these land uses is high and the degree of separation of this location from other City Centre existing ranks means that it is likely that there would be sufficient demand in this area to sustain a rank and enable a rank to become established.

It may be feasible to establish a rank on Upperkirkgate, opposite the Kirkgate bar. This location would serve local retailing and business users during the day and licensed premises in the evening. There is a lay by at this location which could be used as a taxi rank for four vehicles, with minimal roadworks. It is recommended that if this location is used to establish a new taxi rank, that the same practice is adopted as for most other City Centre ranks and operation is suspended between midnight and 5:00 am in favour of ranks on Union Street. Whilst space in the proposed rank is limited, the location is optimally located, close to several likely sources of demand.

Queens road

Queens Road is a lengthy road leading from central Aberdeen to the west and it is not clear which section of the road was suggested as the location for a new rank. The road has a junction with Albyn Place, which has also been suggested as a new rank location. Albyn Place connects with Union Street at the west end of Union Street. The land use along the eastern end of Queens Road, where it meets Albyn Place and of Albyn Place itself is a mixture of business use and residential with some retailing and licensed premises.

The area to the east end of Queens Road and along Albyn Place is likely to generate daytime demand and some night time demand. However, the density of development is relatively low and the levels of demand may not be concentrated enough in one particular location to enable a rank to be come established and hence passengers may not feel they can rely on finding a taxi at a rank in this location if one were created.

George Street / Bon Accord centre

The existing St Andrew Street rank is located at the junction with George Street and is approximately 150 metres walk distance from the entrance

to the Bon Accord Centre. The St Andrew Street rank is unused which suggests that a viable rank would need to be located closer to the Bon Accord Centre. Location closer to the Bon Accord Centre, on George Street and Loch Street are pedestrianised and not particularly suitable as a location for a taxi rank.

On the other side of the Bon Accord Centre, Upperkirkgate separates this centre from the St Nicholas Centre. Another shopping centre. A rank on Upperkirkgate would better serve demand from both centres. See alternative suggestion for a rank on Upperkirkgate.

Owing to lack of existing demand at St Andrew Street and the pedestrianised nature of the streets to the north of the Bon Accord Centre, a rank on George Street is not recommended.

Belmont street

Belmont Street connects with Union Street approximately 60 metres from Back Wynd. With an established rank so closely located it would not be prudent to locate an additional rank in this location. An additional rank may struggle to become established as passengers are likely to rely on the existing established rank nearby.

Thistle/Rose street

The junction of Thistle Street / Rose Street lies approximately 125 metres walk distance from the head of the rank on Chapel Street. With an established rank so closely located it would not be prudent to locate an additional rank in this location. An additional rank may struggle to become established as passengers are likely to rely on the existing established rank nearby.

Near Golden Square

This location is off Union Street and situated between the established and existing ranks of Chapel Street and Back Wynd. Given the locations of the existing ranks, it is likely that another rank between these two ranks could dilute demand and lead to some passenger uncertainty regarding which rank to choose as being most likely to have waiting taxis. Whilst there is undoubtedly demand in this area, it is suggested that this demand is adequately met by the existing ranks.

Rosemount

It is not clear what particular location was meant by Rosemount. However, Rosemount Viaduct appears to be the most viable location fitting this description. The area around His Majesty's Theatre has a mix of business residential and licensed premises. However, property density is relatively low in this locality with a relatively high proportion of open green space, for central Aberdeen. This section of Rosemount Viaduct does not lend itself to situating a day time taxi rank, without significantly

disrupting traffic flow. This particular location is not recommended for a new rank.

Holburn St / Holburn area

Holburn Street connects with Union Street and leads to the south west. The nature of the land use along Holburn Street is a mix of primarily residential with retail and licensed premises. The land use is predominantly residential and unlikely to generate significant levels of day time demand in any particular location along Holburn Street. The nature of Holburn Street as an arterial road connection to central Aberdeen is characterised with day time waiting and loading restrictions along much of the length of the road. The road does not lend itself to the installation of a day time taxi rank. At night, many of the waiting restrictions are removed and vehicles may park in the bus lane to the north side of Holburn Street, to the south of Ashvale Place. This would be a suitable location to situate a night time taxi rank, which could operate from 18:00 hours each day. Viability of this location as a rank would largely depend on passengers walking from night time economy venues located around the east end of Union Street. As such, the existing rank on Chapel Street is likely to be closer for many passengers.

An evening rank on Holburn Street is feasible, with minimal roadworks. However, the viability is questionable given the proximity of existing established ranks off Union Street.

Hospital

Hospitals are commonly identified as desired locations for establishing new taxi ranks. Two common obstacles are often present and limit options for establishing a new rank. Whilst hospitals generate relatively large quantities of demand for taxis and private hire cars, not all of the trips to and from hospitals are to the same locations within the hospital campus. Hospitals in suburban locations often have departments spread between different buildings, each with their own entrance for patients. When a licensed vehicle is hired, it is often from one of these dispersed entrance / exit points. The other main issue is availability of space within hospital campuses to locate a taxi rank. Road space and parking is normally at a premium in hospitals and suggestions that space is allocated to serve as a taxi rank is sometimes met with objection.

Where hospital operations are highly centralised around a single main entrance, then this approach lends itself to implementation and establishment of a taxi rank. A good example is the Royal Infirmary of Edinburgh, which has a rank outside one of the two main entrances. The Aberdeen Royal Infirmary has a relatively dispersed campus layout, with many of the departments and functions located in separate buildings. This layout does not lend itself to establishing a single rank location which will be well attended by taxis. Even if a taxi rank is present, patients may

still prefer to phone for a taxi, rather than walk to the taxi rank, from another building within the hospital campus. However, given the mixed fleet nature of the private hire operators in Aberdeen, if there were a rank in the hospital, it may be attended by taxis which are logged into an operator's booking system. In which case, taxis could be booked and travel from the rank to the required building within the hospital. In such a scenario, a rank would serve two purposes. It would be a waiting area for taxis waiting for a booking in the area and would provide availability for passengers to hire a taxi directly from the rank. The hospital currently have a freephone available for patients to book a taxi to take them from the hospital.

There is no clear preferred location for a taxi rank within the hospital campus, which would be accessible from the main hospital building via a main entrance and where there is space which could be readily allocated as a taxi rank. It may be feasible to allocate space elsewhere within the campus for use as a waiting area for taxis. This would be less likely to be used for direct walk up hires and offers little advantage over waiting in the streets around the hospital after dropping off a patient.

AECC

The existing Aberdeen Exhibition and Conference Centre hosts events which attract large volumes of attendees. Some events result in large volumes of people leaving over a short period. Provision for taxis to rank up during such periods when large volumes of people are leaving after events, would be helpful and enable a flexible level of service to be provided. The existing centre has a facility which enables a licensed vehicle to be booked to take passengers from the venue. A taxi rank nearby would supplement this provision. Any taxi rank would be unlikely to be attended by taxis outside the departure times following an event at the AECC.

The existing AECC is due to be replaced with a new larger facility. It is unclear at this stage what provision is made in the new centre for public transport accessibility. Available media information suggests that provision will be made for public transport to access the facility. However, detailed information is not currently available. The complex will house offices as well as exhibition and event facilities. As such, there may be an element of daytime demand generated by the new facility, in addition to post event demand. A dedicated facility for taxis to rank up and to pick up passengers in high volume would be a prudent addition to the new conference centre.

Bridge Street- Night rank

Bridge Street is a high traffic flow street during the day but less busy late at night. An additional rank at night would be well situated to cater for night time demand. This would be situated approximately half way between the existing night time ranks on Union Street at Correction Wynd and at Soul Bar. A disadvantage of having a night rank off Union Street would be lack of visibility from other parts of Union Street. By having all the key night time ranks on Union Street, visibility, from the perspective of policing late-night activity, is improved. Having one of the night time ranks off Union Street may be detrimental perceived personal safety, which is enhanced by locating on Union Street.

Notwithstanding the comments above, there appears to be sufficient space to allocate some space to a night time rank and the location is likely to attract demand.

This location is not recommended on the grounds of safety concerns, relative to the preferable locations on Union Street.

11 Summary, synthesis and study conclusions

Rank observations

The activity at the ranks followed a common profile for a city, with a steady level of activity during the day on weekdays, with increased levels of activity in the evenings and the highest levels of activity observed on Friday and Saturday nights. Passenger waiting was observed at various times of day and night. However, the level of passenger waiting did not form extensive passenger queues for lengthy durations. Passengers had to wait to board taxis at the night time ranks along Union Street, on Saturday night, during the rank surveys. However, the waiting was due to boarding limitations rather than lack of taxi supply. Passengers were queueing to board a queue of waiting taxis.

Public and stakeholder consultation suggests that passenger waiting on Saturday nights, when the clubs close, is common. From the perspective of passengers, waiting to board a queue of waiting taxis is perceived as passenger queueing. However, as this is not due to lack of available taxis, this is not classified as unmet demand.

During the day, parked vehicles on the rank at Hadden Street were commonplace. However, this is partly due to space being frequently available as the rank was not always fully occupied by taxis.

Queues of taxis waiting at the night time ranks on Union Street extend beyond the marked ranks from time to time, as taxis joined the vehicle queues at the busy ranks.

The proportion of taxis working from the ranks was relatively low. In part this is related to a significant proportion of taxis operating on booking circuits for private hire operators. It is thought that many of these taxis do not operate from the ranks at any time. In addition, anecdotal evidence suggests that some taxi owners only drive from time.

There were not enough hires from the ranks to sustain the full fleet of all taxis, if they were all to operate from the ranks. A significant proportion of taxis operate partly or primarily on booking circuits for private hire operators. This leaves a smaller sub-set of the taxi fleet to focus on rank work, at a level which is more likely to enable drivers to make a living from rank based work.

On street public views

Feedback from the public regarding the services provided by taxis and private hire cars is generally positive. Several positive features of Aberdeen taxis were identified. Some negative features of both taxi and private hire services were also identified by some respondents. Aside from the cost of taxis and private hire cars, some issues were identified with availability. Lack of availability on Saturday night was identified as a

common issue. Lack of availability during the morning between 7:00 and 9:00 was also identified by some as an issue. However, lack of availability at this time was less commonly identified than the lack of availability on Saturday night.

Some respondents identified lack of reliability as an issue. This seemed to relate to bookable hires, rather than rank based hires.

Key stakeholder views

In general, few issues were identified by stakeholders. Availability for all users is generally perceived to be adequate. Occasional longer wait times during the morning before 10:00 was identified as an issue by some, but not generally perceived as a major problem. Similarly, occasional longer wait times on Saturday nights were identified as issues. However, for most people, these limitations were viewed as more of a fact of life which would need to be lived with, rather than an issue to be addressed.

Wheelchair users generally use a regular supplier and book any required trips, without any common issues. Anecdotal evidence suggests that drivers are less willing to pick up wheelchair passengers from the ranks.

Trade views

Most licensed vehicles are operated by owner drivers. Few vehicles are multi shifted. Most are driven by only one driver and hence will operate for only one shift each day. This approach limits the level of supply during the more unsocial hours, such as Saturday night. When vehicles are multi-shifted, the vehicle can be rented to a second driver to cover the night shift. Most drivers choose the times that they work to suit family circumstances and other preferences, including a preference by some not to work on Friday and Saturday nights.

Private hire overprovision analysis

Analysis of private hire data and feedback from private hire operators suggests that the busiest periods for private hire operators is during the morning from 7:00 to 10:00. After this time, demand and supply of drivers steadily declines.

Operators feel that there is demand for booked hires which is not being met at night and especially on Friday and Saturday nights. However, some drivers are unwilling to work unsocial hours. Therefore, fewer drivers are willing to log into the booking systems at night and to accept bookings. Whilst the data supplied by operators did not differentiate between bookings fulfilled by private hire cars and taxis, anecdotal feedback from operators suggested that similar working patterns and assignment of bookings to vehicles applied similarly to both taxis and private hire cars.

Operators face limits on how many bookings they can accept at times of low driver supply. As many of the licensed vehicles which undertake this work are taxis, they have a choice of not logging into a booking system and operating from the ranks. Whereas, private hire cars do not have the same choice. In some respects, it could be argued that there are too many taxis licensed for the level of rank based demand available. Many of the taxis registered need to undertake work through the booking circuits in order to generate sufficient income.

The use of taxis on booking circuits has some operating advantages. It is feasible to use a taxi call type system to alert a company that a taxi is required for passengers, from an origin such as a hotel or cinema. A vehicle can then be dispatched to the location required. With such systems, information which would normally be required for a private hire booking, including the name of the person making the booking and the destination, is not supplied initially. If a private hire car were sent to fulfil such a notification, it could be argued that full booking information was not given before a booking was made for the trip, as would normally be required for a standard booking. However, if a taxi were sent to fulfil such a booking, then the booking contract can be made directly with the driver on arrival. As such, the notification received could be effectively treated as a hail for a taxi. Consequently, full details such as passenger name and origin and destination are not required to be provided before a hire is made with a taxi.

The assessment of private hire car overprovision must consider only private hire cars and not all vehicles working on private hire circuits. Symptoms of overprovision would be low rates of hourly hires and lengthy waits between bookings. If we assume that private hire cars operate at a similar level of utilisation per vehicle as taxis working on the booking circuits, then the statistics regarding booking frequency and wait times between bookings indicate that the level of provision is not excessive.

Private hire cars alone could not fulfil all pre-booked hire bookings. The proportion of private hire cars against population is low. The ratio may be suppressed by the predominance of taxis working on private hire circuits.

The operational characteristics with respect to frequency of hires and wait times between hires, together with the lack of sufficient capacity to cater for private hire demand solely through the private hire car fleet indicates that there is no overprovision of private hire cars. Rank review

The rank review covered both existing ranks and proposals for new ranks. Whilst there were some limitations identified for some of the existing ranks, most were well located, well used and suitably configured for most users. Two of the ranks were not used either in part or entirely. The rank on St Andrew Street, whilst close to potential demand related to retailing, was not used during the rank observation period. Some taxis waited for

hires on the Dee Street rank, on the section closest to Union Street. However, the more remote section, beyond Langstane Place, the section of rank was unused for hires and only used occasionally by taxi drivers wishing to park the vehicle or apparently waiting on a break before leaving without a hire.

Locations were suggested for new ranks. These were evaluated and two suggestions taken forward for consideration as new rank locations. These are at Upperkirkgate, which is close to retailing and business generated demand during the daytime and nighttime economy generated demand during the evenings. On Guild Street, a new rank which would serve the bus station along with retail demand and night time economy generated demand, was also suggested.

Wheelchair accessible vehicles

There was some feedback from the trade, stakeholders and the public, that some people find the wheelchair accessible vehicles used in the taxi and private hire fleets, to be less comfortable than saloon cars and more difficult to get in and out of. However, it was generally felt that there was a need for wheelchair accessible vehicles to be available for those who needed them. It was generally felt that a mixed fleet was appropriate to meet the needs of all users.

There was some feedback from the trade, stakeholders and the public, that there is some reluctance amongst taxi drivers in particular, to accept hires from wheelchair users. Anecdotal evidence indicated that a minority of drivers were not keen on undertaking such hires and it was suggested that some would even go to such lengths as to leave a rank if they thought a wheelchair user was likely to try and hire them. It should be stressed that there was no suggestion that such behaviour was prevalent amongst drivers, but different sources indicated that some drivers did discriminate against wheelchair users.

Evaluation

There is consistent evidence that people experience difficulties when trying to book a licensed vehicle. The primary period of difficulty is on Saturday night and to a lesser extent on Friday night, weekday nights and during morning and afternoon peak periods.

In terms of private hire car overcapacity analysis, there is no evidence that there is an overcapacity of private hire vehicles. Much of the private hire market is serviced by taxis operating on private hire booking circuits.

From rank based analysis, passengers do suffer some delays waiting for taxis to arrive at the ranks during the periods perceived to have limited availability. However, the proportion of passengers waiting and the average wait times are relatively low. Generally, day time availability of taxis at the ranks is good. Taking account of availability and passenger

waiting over all periods, the Index of Significant Unmet Demand value is below the threshold which would suggest that unmet demand is significant.

The use of licensed vehicles is dominated by private hire bookings during the day and by rank based hire at night. This is not necessarily an expected pattern and not one which is always repeated elsewhere. However, this pattern of use may be one which has developed over time through passenger experience and expectations. If passengers don't expect to be able to book a vehicle by telephone or app late at night, then they won't try and will go to the ranks instead. Therefore, drivers will follow this trend with their working patterns and opt to service ranks at night, rather than work on the booking circuits. This can only happen where taxis are working both the booking circuits and ranks at different times. Private hire operators are of the opinion that if more drivers could be encouraged to work unsocial hours, demand would increase as the public became aware of increased availability. Measures to incentivise drivers to work during unsocial periods should be explored. These could include a new tariff within the fares structure with a more expensive distance based tariff in operation late on Friday and Saturday nights.

In summary, there is no significant unmet demand and no overprovision of private hire cars. There are limitations in availability at times, notably on Saturday nights and weekday morning peak and afternoon peak times. Wheelchair users and mobility impaired users are generally well served by licensed vehicles, however, there is some evidence of discrimination by some taxi drivers.

Members of the public are generally satisfied with licensed vehicle services and accept that there are limitations with availability at certain times.

12 Recommendations

On the basis of the evidence gathered, our key conclusion is that there is no evidence of unmet demand for the services of taxis either patent or latent which is significant at this point in time in the Aberdeen licensing area.

There is no overprovision of private hire cars in Aberdeen.

Measures which would encourage more of the licensed vehicle fleet to operate during unsocial hours would help to address limitations in provision at night.

There is no need to increase the limit to the number of taxi vehicle licences or to introduce a cap on private hire car numbers.

Two new potential rank locations have been identified. It is recommended that the potential development of these two ranks is further developed, with consultation and consideration by appropriate stakeholders.

Appendix A – Rank Survey Results

Total Passengers

Hour beginning	Summer Street	Correction Wynd	Hadden Street	Dee Street 2	Dee Street 1	Back Wynd	Chapel Street	Soul Bar	Castlegate	St Andrews Street	Railway Station	Airport Main Rank	Helicopter Terminal
Thursday 07:00	0	0	3	0	0	3	7	0	0	0	16	19	0
Thursday 08:00	0	0	2	0	0	10	10	0	0	0	33	40	0
Thursday 09:00	0	0	2	0	1	14	3	0	0	0	30	164	24
Thursday 10:00	0	0	9	0	7	12	13	0	0	0	54	81	22
Thursday 11:00	0	0	10	0	2	9	8	0	0	0	45	42	13
Thursday 12:00	0	0	13	0	4	32	9	0	0	0	29	6	8
Thursday 13:00	0	0	13	0	4	19	12	0	0	0	73	18	49
Thursday 14:00	0	0	8	0	2	39	12	0	0	0	47	18	8
Thursday 15:00	0	0	17	0	1	32	8	0	0	0	60	56	13
Thursday 16:00	0	0	13	0	4	35	12	0	0	0	30	58	27
Thursday 17:00	0	0	5	0	3	27	5	0	0	0	65	85	0
Thursday 18:00	0	0	10	0	11	27	10	0	0	0	31	53	4
Thursday 19:00	0	0	11	0	20	32	10	0	0	0	63	22	28
Thursday 20:00	0	0	19	0	12	33	7	0	0	0	74	83	6
Thursday 21:00	0	0	10	0	32	47	17	0	0	0	70	38	0
Thursday 22:00	0	0	13	0	30	76	25	7	0	0	50	49	0
Thursday 23:00	3	7	12	0	12	69	21	20	21	0	37	41	0
Friday 00:00	21	85	3	0	4	6	6	33	15	0	13	0	0
Friday 01:00	32	84	1	0	0	0	0	25	2	0	0	0	0
Friday 02:00	27	147	0	0	0	0	0	45	14	0	0	0	0
Friday 03:00	0	24	0	0	0	0	0	25	18	0	0	0	0
Friday 04:00	1	3	0	0	0	0	0	1	11	0	0	0	0
Friday 05:00	0	0	0	0	0	3	1	0	8	0	4	0	0
Friday 06:00	0	0	0	0	0	1	2	0	1	0	8	2	0
Friday 07:00	0	0	1	0	0	3	5	0	0	0	22	0	0
Friday 08:00	0	0	1	0	1	7	7	0	0	0	41	45	1
Friday 09:00	0	0	4	0	5	24	8	0	0	0	32	59	6
Friday 10:00	0	0	7	0	8	23	5	0	0	0	43	60	27
Friday 11:00	0	0	6	0	2	35	6	0	0	0	58	21	14
Friday 12:00	0	0	18	0	1	38	13	0	0	0	15	18	7
Friday 13:00	0	0	11	0	3	41	6	0	0	0	65	50	28
Friday 14:00	0	0	10	0	7	55	9	0	0	0	34	39	13
Friday 15:00	0	0	21	0	7	34	18	0	0	0	67	74	2
Friday 16:00	0	0	7	0	4	51	13	0	0	0	37	60	4
Friday 17:00	0	0	25	0	4	45	12	0	0	0	76	61	12
Friday 18:00	0	0	15	0	11	37	15	0	0	0	55	56	11
Friday 19:00	0	0	11	0	11	49	15	0	0	0	74	36	13
Friday 20:00	0	0	17	0	20	49	29	0	0	0	68	79	9
Friday 21:00	0	0	28	0	22	86	61	0	0	0	66	32	0
Friday 22:00	0	0	30	0	30	131	73	15	5	0	26	96	0
Friday 23:00	2	7	56	0	33	177	96	21	26	0	28	16	0
Saturday 00:00	56	204	22	0	8	5	11	101	32	0	19	0	0
Saturday 01:00	80	250	0	0	0	1	3	96	30	0	0	0	0
Saturday 02:00	73	226	0	0	2	0	4	91	19	0	0	0	0
Saturday 03:00	72	280	0	0	2	0	4	105	66	0	0	0	0
Saturday 04:00	4	20	0	0	0	0	0	28	31	0	0	0	0
Saturday 05:00	2	0	0	0	0	0	0	1	21	0	0	1	0
Saturday 06:00	0	0	0	0	0	4	2	0	5	0	5	0	0
Saturday 07:00	0	0	6	0	1	2	0	0	0	0	7	0	0
Saturday 08:00	0	0	3	0	1	11	2	0	0	0	6	19	0
Saturday 09:00	0	0	1	0	1	20	9	0	0	0	11	17	0
Saturday 10:00	0	0	4	0	1	22	7	0	0	0	28	29	5
Saturday 11:00	0	0	9	0	3	6	4	0	0	0	36	41	0
Saturday 12:00	0	0	10	0	2	60	13	0	0	0	30	15	4
Saturday 13:00	0	0	14	0	1	57	18	0	0	0	39	29	3
Saturday 14:00	0	0	7	0	9	104	16	0	0	0	29	40	0
Saturday 15:00	0	0	13	0	13	54	4	0	0	0	37	5	0
Saturday 16:00	0	0	19	0	10	68	4	0	0	0	35	35	0
Saturday 17:00	0	0	19	0	11	119	26	0	0	0	58	15	0
Saturday 18:00	0	0	28	0	20	121	49	0	0	0	42	1	0
Saturday 19:00	0	0	36	0	39	94	53	0	0	0	36	5	0
Saturday 20:00	0	0	44	0	44	117	56	0	0	0	52	31	0
Saturday 21:00	0	0	60	0	59	170	81	0	3	0	63	17	0
Saturday 22:00	0	14	81	0	70	216	127	13	10	0	47	51	0
Saturday 23:00	29	15	72	0	60	229	139	51	29	0	22	0	0
Sunday 00:00	92	268	32	0	4	0	10	142	87	0	14	0	0
Sunday 01:00	125	347	0	0	0	0	4	136	76	0	0	0	0
Sunday 02:00	140	250	0	0	0	0	5	97	43	0	0	0	0
Sunday 03:00	153	230	0	0	0	0	0	133	67	0	0	0	0
Sunday 04:00	17	48	0	0	0	0	1	62	56	0	0	0	0
Sunday 05:00	0	4	0	0	0	3	2	21	29	0	0	0	0
Sunday 06:00	0	0	0	0	0	6	2	0	19	0	0	0	0

Total taxis departing empty

Hour beginning	Summer Street	Correction Wynd	Hadden Street	Dee Street 2	Dee Street 1	Back Wynd	Chapel Street	Soul Bar	Castlegate	St Andrews Street	Railway Station	Airport Main Rank	Helicopter Terminal
Thursday 07:00	0	0	8	0	0	2	5	0	0	0	0	0	12
Thursday 08:00	0	0	4	0	0	5	0	0	0	0	0	0	24
Thursday 09:00	0	0	11	0	1	1	2	0	0	0	0	0	67
Thursday 10:00	0	0	6	0	3	0	1	0	0	0	0	1	43
Thursday 11:00	0	0	5	0	3	0	2	0	0	0	3	0	14
Thursday 12:00	0	0	9	0	0	0	4	0	0	0	0	0	7
Thursday 13:00	0	0	4	0	4	1	4	0	0	0	1	1	11
Thursday 14:00	0	0	2	0	3	1	3	0	0	0	2	1	6
Thursday 15:00	0	0	1	0	1	1	6	0	0	0	0	0	27
Thursday 16:00	0	0	1	0	0	1	0	0	0	0	0	0	30
Thursday 17:00	0	0	2	0	2	3	2	0	0	0	0	0	50
Thursday 18:00	0	0	2	0	2	1	1	0	0	0	0	0	31
Thursday 19:00	0	0	3	0	1	0	4	0	0	0	0	0	10
Thursday 20:00	0	0	6	0	4	1	5	0	0	0	1	0	54
Thursday 21:00	0	0	4	0	1	1	1	0	0	0	0	0	17
Thursday 22:00	0	0	6	0	3	0	4	1	0	0	0	2	34
Thursday 23:00	2	0	12	0	2	1	3	3	1	0	0	0	21
Friday 00:00	3	1	1	0	0	0	0	6	0	0	0	0	0
Friday 01:00	2	2	0	0	0	0	0	5	0	0	0	0	0
Friday 02:00	3	1	0	0	0	0	0	5	5	0	0	0	0
Friday 03:00	3	9	0	0	0	0	0	2	0	0	0	0	0
Friday 04:00	1	2	0	0	1	0	0	8	4	0	0	0	0
Friday 05:00	0	0	0	0	2	0	0	0	1	0	0	1	0
Friday 06:00	0	0	0	0	4	1	6	0	0	0	0	0	0
Friday 07:00	0	0	5	0	3	0	3	0	0	0	0	2	2
Friday 08:00	0	0	2	0	1	1	6	0	0	0	1	6	37
Friday 09:00	0	0	3	0	1	0	7	0	0	0	2	0	38
Friday 10:00	0	0	0	0	1	0	2	0	0	0	0	0	35
Friday 11:00	0	0	3	0	1	0	5	0	0	0	0	0	13
Friday 12:00	0	0	2	0	1	0	4	0	0	0	0	0	8
Friday 13:00	0	0	5	0	0	4	4	0	0	0	0	0	33
Friday 14:00	0	0	4	0	1	1	5	0	0	0	0	1	24
Friday 15:00	0	0	0	0	0	1	5	0	0	0	1	0	32
Friday 16:00	0	0	2	0	0	2	3	0	0	0	0	0	30
Friday 17:00	0	0	3	0	1	5	3	0	0	0	0	0	35
Friday 18:00	0	0	1	0	1	2	6	0	0	0	0	0	27
Friday 19:00	0	0	5	0	1	0	3	0	0	0	0	0	17
Friday 20:00	0	0	4	0	3	4	2	0	0	0	1	0	30
Friday 21:00	0	0	5	0	1	1	1	0	0	0	1	0	16
Friday 22:00	0	0	6	0	1	1	0	2	0	0	1	0	37
Friday 23:00	1	0	4	0	1	0	0	4	1	0	0	0	4
Saturday 00:00	0	0	3	0	0	0	0	0	0	0	0	0	0
Saturday 01:00	0	0	0	0	0	0	0	0	2	0	0	0	0
Saturday 02:00	1	0	1	0	0	0	0	1	5	0	0	0	0
Saturday 03:00	2	0	0	0	0	0	0	1	2	0	0	0	0
Saturday 04:00	4	6	0	0	1	0	1	5	0	0	0	0	0
Saturday 05:00	0	0	1	0	0	0	0	5	0	0	0	0	0
Saturday 06:00	0	0	2	0	2	3	3	0	1	0	0	0	0
Saturday 07:00	0	0	3	0	0	3	3	0	0	0	0	0	0
Saturday 08:00	0	0	3	0	1	1	3	0	0	0	0	0	10
Saturday 09:00	0	0	5	0	4	0	2	0	0	0	2	0	10
Saturday 10:00	0	0	5	0	3	1	3	0	0	0	0	0	15
Saturday 11:00	0	0	3	0	0	0	0	0	0	0	0	1	23
Saturday 12:00	0	0	0	0	1	2	3	0	0	0	0	0	7
Saturday 13:00	0	0	2	0	1	0	1	0	0	0	0	0	10
Saturday 14:00	0	0	0	0	0	1	1	0	0	0	0	0	27
Saturday 15:00	0	0	2	0	4	5	12	0	0	0	0	0	5
Saturday 16:00	0	0	2	0	3	0	5	0	0	0	1	0	28
Saturday 17:00	0	0	6	0	3	0	3	0	0	0	0	6	12
Saturday 18:00	0	0	2	0	0	1	5	0	0	0	0	0	1
Saturday 19:00	0	0	4	0	1	0	1	0	0	0	0	1	5
Saturday 20:00	0	0	2	0	1	0	2	0	0	0	0	0	16
Saturday 21:00	0	0	1	0	6	0	1	0	0	0	0	0	8
Saturday 22:00	0	0	2	0	3	0	1	1	0	0	0	0	21
Saturday 23:00	2	0	0	0	0	0	2	3	0	0	4	0	0
Sunday 00:00	3	0	0	0	0	0	1	0	1	0	0	0	0
Sunday 01:00	2	0	0	0	0	0	0	1	3	0	0	0	0
Sunday 02:00	0	0	0	0	0	0	0	0	5	0	0	0	0
Sunday 03:00	3	0	0	0	0	0	0	3	2	0	0	0	0
Sunday 04:00	0	5	0	0	0	0	1	1	2	0	0	0	0
Sunday 05:00	0	0	1	0	0	6	1	4	0	0	0	0	0
Sunday 06:00	0	0	1	0	0	3	1	0	1	0	0	0	0

Total number of taxis departing with passengers

Hour beginning	Summer Street	Correction Wynd	Hadden Street	Dee Street 2	Dee Street 1	Back Wynd	Chapel Street	Soul Bar	Castlegate	St Andrews Street	Railway Station	Airport Main Rank	Helicopter Terminal
Thursday 07:00	0	0	3	0	0	3	6	0	0	0	12	13	0
Thursday 08:00	0	0	2	0	0	9	8	0	0	0	26	31	0
Thursday 09:00	0	0	2	0	1	11	2	0	0	0	25	72	10
Thursday 10:00	0	0	6	0	4	10	10	0	0	0	41	45	10
Thursday 11:00	0	0	9	0	2	7	5	0	0	0	30	22	6
Thursday 12:00	0	0	10	0	4	24	6	0	0	0	19	5	4
Thursday 13:00	0	0	8	0	4	14	8	0	0	0	48	10	21
Thursday 14:00	0	0	4	0	2	26	9	0	0	0	32	12	3
Thursday 15:00	0	0	12	0	1	25	7	0	0	0	38	38	5
Thursday 16:00	0	0	10	0	4	25	9	0	0	0	20	35	16
Thursday 17:00	0	0	4	0	3	25	5	0	0	0	41	50	0
Thursday 18:00	0	0	9	0	6	23	8	0	0	0	24	32	3
Thursday 19:00	0	0	9	0	12	25	9	0	0	0	50	13	12
Thursday 20:00	0	0	12	0	11	25	5	0	0	0	44	54	3
Thursday 21:00	0	0	8	0	16	32	11	0	0	0	47	19	0
Thursday 22:00	0	0	10	0	20	40	16	4	0	0	33	34	0
Thursday 23:00	2	5	9	0	11	40	16	13	12	0	27	21	0
Friday 00:00	13	59	3	0	3	4	5	22	9	0	10	0	0
Friday 01:00	21	49	1	0	0	0	0	20	2	0	0	0	0
Friday 02:00	16	85	0	0	0	0	0	27	9	0	0	0	0
Friday 03:00	0	16	0	0	0	0	0	13	14	0	0	0	0
Friday 04:00	1	3	0	0	0	0	0	1	9	0	0	0	0
Friday 05:00	0	0	0	0	0	3	1	0	8	0	2	0	0
Friday 06:00	0	0	0	0	0	1	2	0	1	0	6	1	0
Friday 07:00	0	0	1	0	0	3	5	0	0	0	14	0	0
Friday 08:00	0	0	1	0	1	7	6	0	0	0	35	31	1
Friday 09:00	0	0	3	0	5	18	6	0	0	0	22	38	3
Friday 10:00	0	0	6	0	7	18	3	0	0	0	33	35	12
Friday 11:00	0	0	5	0	1	22	5	0	0	0	41	15	10
Friday 12:00	0	0	12	0	1	27	11	0	0	0	11	8	5
Friday 13:00	0	0	9	0	3	28	5	0	0	0	43	33	12
Friday 14:00	0	0	9	0	6	37	6	0	0	0	19	23	8
Friday 15:00	0	0	13	0	4	24	11	0	0	0	38	40	2
Friday 16:00	0	0	7	0	4	36	9	0	0	0	24	30	3
Friday 17:00	0	0	16	0	4	29	10	0	0	0	43	39	7
Friday 18:00	0	0	11	0	8	29	10	0	0	0	34	27	5
Friday 19:00	0	0	10	0	7	28	10	0	0	0	43	20	7
Friday 20:00	0	0	11	0	11	28	18	0	0	0	44	37	5
Friday 21:00	0	0	19	0	15	56	35	0	0	0	41	16	0
Friday 22:00	0	0	22	0	21	73	42	9	3	0	16	43	0
Friday 23:00	1	7	33	0	24	100	55	14	13	0	18	10	0
Saturday 00:00	32	131	12	0	5	3	9	60	20	0	14	0	0
Saturday 01:00	40	153	0	0	0	1	2	48	22	0	0	0	0
Saturday 02:00	35	134	0	0	1	0	3	50	15	0	0	0	0
Saturday 03:00	35	157	0	0	1	0	2	57	38	0	0	0	0
Saturday 04:00	4	13	0	0	0	0	0	18	21	0	0	0	0
Saturday 05:00	1	0	0	0	0	0	0	1	17	0	0	1	0
Saturday 06:00	0	0	0	0	0	3	2	0	4	0	3	0	0
Saturday 07:00	0	0	4	0	1	1	0	0	0	0	5	0	0
Saturday 08:00	0	0	2	0	1	8	1	0	0	0	6	12	0
Saturday 09:00	0	0	1	0	1	12	4	0	0	0	9	10	0
Saturday 10:00	0	0	4	0	1	16	2	0	0	0	21	17	2
Saturday 11:00	0	0	7	0	2	4	3	0	0	0	24	22	0
Saturday 12:00	0	0	6	0	2	34	7	0	0	0	19	7	2
Saturday 13:00	0	0	8	0	1	33	13	0	0	0	22	19	1
Saturday 14:00	0	0	5	0	4	47	10	0	0	0	20	25	0
Saturday 15:00	0	0	12	0	5	30	3	0	0	0	22	5	0
Saturday 16:00	0	0	11	0	7	38	4	0	0	0	20	28	0
Saturday 17:00	0	0	10	0	9	70	16	0	0	0	32	9	0
Saturday 18:00	0	0	18	0	11	64	25	0	0	0	25	1	0
Saturday 19:00	0	0	23	0	24	56	35	0	0	0	21	4	0
Saturday 20:00	0	0	27	0	25	56	34	0	0	0	29	22	0
Saturday 21:00	0	0	35	0	33	86	40	0	2	0	36	9	0
Saturday 22:00	0	11	45	0	41	109	65	7	8	0	32	24	0
Saturday 23:00	14	10	42	0	37	116	70	26	17	0	14	0	0
Sunday 00:00	45	175	16	0	1	0	6	77	52	0	10	0	0
Sunday 01:00	64	187	0	0	0	0	2	71	40	0	0	0	0
Sunday 02:00	66	158	0	0	0	0	3	58	26	0	0	0	0
Sunday 03:00	71	148	0	0	0	0	0	77	39	0	0	0	0
Sunday 04:00	11	34	0	0	0	0	1	38	31	0	0	0	0
Sunday 05:00	0	3	0	0	0	2	2	14	19	0	0	0	0
Sunday 06:00	0	0	0	0	0	6	2	0	14	0	0	0	0

Total number of taxis departing the ranks

Hour beginning	Summer Street	Correction Wynd	Haadden Street	Dee Street 2	Dee Street 1	Back Wynd	Chapel Street	Soul Bar	Castlegate	St Andrews Street	Railway Station	Airport Main Rank	Helicopter Terminal
Thursday 07:00	0	0	11	0	0	5	11	0	0	0	12	13	12
Thursday 08:00	0	0	6	0	0	14	8	0	0	0	26	31	24
Thursday 09:00	0	0	13	0	2	12	4	0	0	0	25	72	77
Thursday 10:00	0	0	12	0	7	10	11	0	0	0	41	46	53
Thursday 11:00	0	0	14	0	5	7	7	0	0	0	33	22	20
Thursday 12:00	0	0	19	0	4	24	10	0	0	0	19	5	11
Thursday 13:00	0	0	12	0	8	15	12	0	0	0	49	11	32
Thursday 14:00	0	0	6	0	5	27	12	0	0	0	34	13	9
Thursday 15:00	0	0	13	0	2	26	13	0	0	0	38	38	32
Thursday 16:00	0	0	11	0	4	26	9	0	0	0	20	35	46
Thursday 17:00	0	0	6	0	5	28	7	0	0	0	41	50	50
Thursday 18:00	0	0	11	0	8	24	9	0	0	0	24	32	34
Thursday 19:00	0	0	12	0	13	25	13	0	0	0	50	13	22
Thursday 20:00	0	0	18	0	15	26	10	0	0	0	45	54	57
Thursday 21:00	0	0	12	0	17	33	12	0	0	0	47	19	17
Thursday 22:00	0	0	16	0	23	40	20	5	0	0	33	36	34
Thursday 23:00	4	5	21	0	13	41	19	16	13	0	27	21	21
Friday 00:00	16	60	4	0	3	4	5	28	9	0	10	0	0
Friday 01:00	23	51	1	0	0	0	0	25	2	0	0	0	0
Friday 02:00	19	86	0	0	0	0	0	32	14	0	0	0	0
Friday 03:00	3	25	0	0	0	0	0	15	14	0	0	0	0
Friday 04:00	2	5	0	0	1	0	0	9	13	0	0	0	0
Friday 05:00	0	0	0	0	2	3	1	0	9	0	2	1	0
Friday 06:00	0	0	0	0	4	2	8	0	1	0	6	1	0
Friday 07:00	0	0	6	0	3	3	8	0	0	0	14	2	2
Friday 08:00	0	0	3	0	2	8	12	0	0	0	36	37	38
Friday 09:00	0	0	6	0	6	18	13	0	0	0	24	38	41
Friday 10:00	0	0	6	0	8	18	5	0	0	0	33	35	47
Friday 11:00	0	0	8	0	2	22	10	0	0	0	41	15	23
Friday 12:00	0	0	14	0	2	27	15	0	0	0	11	8	13
Friday 13:00	0	0	14	0	3	32	9	0	0	0	43	33	45
Friday 14:00	0	0	13	0	7	38	11	0	0	0	19	24	32
Friday 15:00	0	0	13	0	4	25	16	0	0	0	39	40	34
Friday 16:00	0	0	9	0	4	38	12	0	0	0	24	30	33
Friday 17:00	0	0	19	0	5	34	13	0	0	0	43	39	42
Friday 18:00	0	0	12	0	9	31	16	0	0	0	34	27	32
Friday 19:00	0	0	15	0	8	28	13	0	0	0	43	20	24
Friday 20:00	0	0	15	0	14	32	20	0	0	0	45	37	35
Friday 21:00	0	0	24	0	16	57	36	0	0	0	42	16	16
Friday 22:00	0	0	28	0	22	74	42	11	3	0	17	43	37
Friday 23:00	2	7	37	0	25	100	55	18	14	0	18	10	4
Saturday 00:00	32	131	15	0	5	3	9	60	20	0	14	0	0
Saturday 01:00	40	153	0	0	0	1	2	48	24	0	0	0	0
Saturday 02:00	36	134	1	0	1	0	3	51	20	0	0	0	0
Saturday 03:00	37	157	0	0	1	0	2	58	40	0	0	0	0
Saturday 04:00	8	19	0	0	1	0	1	23	21	0	0	0	0
Saturday 05:00	1	0	1	0	0	0	0	6	17	0	0	1	0
Saturday 06:00	0	0	2	0	2	6	5	0	5	0	3	0	0
Saturday 07:00	0	0	7	0	1	4	3	0	0	0	5	0	0
Saturday 08:00	0	0	5	0	2	9	4	0	0	0	6	12	10
Saturday 09:00	0	0	6	0	5	12	6	0	0	0	11	10	10
Saturday 10:00	0	0	9	0	4	17	5	0	0	0	21	17	17
Saturday 11:00	0	0	10	0	2	4	3	0	0	0	24	23	23
Saturday 12:00	0	0	6	0	3	36	10	0	0	0	19	7	9
Saturday 13:00	0	0	10	0	2	33	14	0	0	0	22	19	11
Saturday 14:00	0	0	5	0	4	48	11	0	0	0	20	25	27
Saturday 15:00	0	0	14	0	9	35	15	0	0	0	22	5	5
Saturday 16:00	0	0	13	0	10	38	9	0	0	0	21	28	28
Saturday 17:00	0	0	16	0	12	70	19	0	0	0	32	15	12
Saturday 18:00	0	0	20	0	11	65	30	0	0	0	25	1	1
Saturday 19:00	0	0	27	0	25	56	36	0	0	0	21	5	5
Saturday 20:00	0	0	29	0	26	56	36	0	0	0	29	22	16
Saturday 21:00	0	0	36	0	39	86	41	0	2	0	36	9	8
Saturday 22:00	0	11	47	0	44	109	66	8	8	0	32	24	21
Saturday 23:00	16	10	42	0	37	116	72	29	17	0	18	0	0
Sunday 00:00	48	175	16	0	1	0	7	77	53	0	10	0	0
Sunday 01:00	66	187	0	0	0	0	2	72	43	0	0	0	0
Sunday 02:00	66	158	0	0	0	0	3	58	31	0	0	0	0
Sunday 03:00	74	148	0	0	0	0	0	80	41	0	0	0	0
Sunday 04:00	11	39	0	0	0	0	2	39	33	0	0	0	0
Sunday 05:00	0	3	1	0	0	8	3	18	19	0	0	0	0
Sunday 06:00	0	0	1	0	0	9	3	0	15	0	0	0	0

Percentage of all taxis which leave the rank empty

Hour beginning	Summer Street	Correction Wynd	Had den Street	Dee Street 2	Dee Street 1	Back Wynd	Chapel Street	Soul Bar	Castlegate	St Andrews Street	Railway Station	Airport Main Rank	Helicopter Terminal
Thursday 07:00	0%	0%	73%	0%	0%	40%	45%	0%	0%	0%	0%	0%	100%
Thursday 08:00	0%	0%	67%	0%	0%	36%	0%	0%	0%	0%	0%	0%	100%
Thursday 09:00	0%	0%	85%	0%	50%	8%	50%	0%	0%	0%	0%	0%	87%
Thursday 10:00	0%	0%	50%	0%	43%	0%	9%	0%	0%	0%	0%	2%	81%
Thursday 11:00	0%	0%	36%	0%	60%	0%	29%	0%	0%	0%	9%	0%	70%
Thursday 12:00	0%	0%	47%	0%	0%	0%	40%	0%	0%	0%	0%	0%	64%
Thursday 13:00	0%	0%	33%	0%	50%	7%	33%	0%	0%	0%	2%	9%	34%
Thursday 14:00	0%	0%	33%	0%	60%	4%	25%	0%	0%	0%	6%	8%	67%
Thursday 15:00	0%	0%	8%	0%	50%	4%	46%	0%	0%	0%	0%	0%	84%
Thursday 16:00	0%	0%	9%	0%	0%	4%	0%	0%	0%	0%	0%	0%	65%
Thursday 17:00	0%	0%	33%	0%	40%	11%	29%	0%	0%	0%	0%	0%	100%
Thursday 18:00	0%	0%	18%	0%	25%	4%	11%	0%	0%	0%	0%	0%	91%
Thursday 19:00	0%	0%	25%	0%	8%	0%	31%	0%	0%	0%	0%	0%	45%
Thursday 20:00	0%	0%	33%	0%	27%	4%	50%	0%	0%	0%	2%	0%	95%
Thursday 21:00	0%	0%	33%	0%	6%	3%	8%	0%	0%	0%	0%	0%	100%
Thursday 22:00	0%	0%	38%	0%	13%	0%	20%	20%	0%	0%	0%	6%	100%
Thursday 23:00	50%	0%	57%	0%	15%	2%	16%	19%	8%	0%	0%	0%	100%
Friday 00:00	19%	2%	25%	0%	0%	0%	0%	21%	0%	0%	0%	0%	0%
Friday 01:00	9%	4%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%
Friday 02:00	16%	1%	0%	0%	0%	0%	0%	16%	36%	0%	0%	0%	0%
Friday 03:00	100%	36%	0%	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%
Friday 04:00	50%	40%	0%	0%	100%	0%	0%	89%	31%	0%	0%	0%	0%
Friday 05:00	0%	0%	0%	0%	100%	0%	0%	0%	11%	0%	0%	100%	0%
Friday 06:00	0%	0%	0%	0%	100%	50%	75%	0%	0%	0%	0%	0%	0%
Friday 07:00	0%	0%	83%	0%	100%	0%	38%	0%	0%	0%	0%	100%	100%
Friday 08:00	0%	0%	67%	0%	50%	13%	50%	0%	0%	0%	3%	16%	97%
Friday 09:00	0%	0%	50%	0%	17%	0%	54%	0%	0%	0%	8%	0%	93%
Friday 10:00	0%	0%	0%	0%	13%	0%	40%	0%	0%	0%	0%	0%	74%
Friday 11:00	0%	0%	38%	0%	50%	0%	50%	0%	0%	0%	0%	0%	57%
Friday 12:00	0%	0%	14%	0%	50%	0%	27%	0%	0%	0%	0%	0%	62%
Friday 13:00	0%	0%	36%	0%	0%	13%	44%	0%	0%	0%	0%	0%	73%
Friday 14:00	0%	0%	31%	0%	14%	3%	45%	0%	0%	0%	0%	4%	75%
Friday 15:00	0%	0%	0%	0%	0%	4%	31%	0%	0%	0%	3%	0%	94%
Friday 16:00	0%	0%	22%	0%	0%	5%	25%	0%	0%	0%	0%	0%	91%
Friday 17:00	0%	0%	16%	0%	20%	15%	23%	0%	0%	0%	0%	0%	83%
Friday 18:00	0%	0%	8%	0%	11%	6%	38%	0%	0%	0%	0%	0%	84%
Friday 19:00	0%	0%	33%	0%	13%	0%	23%	0%	0%	0%	0%	0%	71%
Friday 20:00	0%	0%	27%	0%	21%	13%	10%	0%	0%	0%	2%	0%	86%
Friday 21:00	0%	0%	21%	0%	6%	2%	3%	0%	0%	0%	2%	0%	100%
Friday 22:00	0%	0%	21%	0%	5%	1%	0%	18%	0%	0%	6%	0%	100%
Friday 23:00	50%	0%	11%	0%	4%	0%	0%	22%	7%	0%	0%	0%	100%
Saturday 00:00	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Saturday 01:00	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%
Saturday 02:00	3%	0%	100%	0%	0%	0%	0%	2%	25%	0%	0%	0%	0%
Saturday 03:00	5%	0%	0%	0%	0%	0%	0%	2%	5%	0%	0%	0%	0%
Saturday 04:00	50%	32%	0%	0%	100%	0%	100%	22%	0%	0%	0%	0%	0%
Saturday 05:00	0%	0%	100%	0%	0%	0%	0%	83%	0%	0%	0%	0%	0%
Saturday 06:00	0%	0%	100%	0%	100%	50%	60%	0%	20%	0%	0%	0%	0%
Saturday 07:00	0%	0%	43%	0%	0%	75%	100%	0%	0%	0%	0%	0%	0%
Saturday 08:00	0%	0%	60%	0%	50%	11%	75%	0%	0%	0%	0%	0%	100%
Saturday 09:00	0%	0%	83%	0%	80%	0%	33%	0%	0%	18%	0%	0%	100%
Saturday 10:00	0%	0%	56%	0%	75%	6%	60%	0%	0%	0%	0%	0%	88%
Saturday 11:00	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	4%	100%
Saturday 12:00	0%	0%	0%	0%	33%	6%	30%	0%	0%	0%	0%	0%	78%
Saturday 13:00	0%	0%	20%	0%	50%	0%	7%	0%	0%	0%	0%	0%	91%
Saturday 14:00	0%	0%	0%	0%	0%	2%	9%	0%	0%	0%	0%	0%	100%
Saturday 15:00	0%	0%	14%	0%	44%	14%	80%	0%	0%	0%	0%	0%	100%
Saturday 16:00	0%	0%	15%	0%	30%	0%	56%	0%	0%	0%	5%	0%	100%
Saturday 17:00	0%	0%	38%	0%	25%	0%	16%	0%	0%	0%	0%	40%	100%
Saturday 18:00	0%	0%	10%	0%	0%	2%	17%	0%	0%	0%	0%	0%	100%
Saturday 19:00	0%	0%	15%	0%	4%	0%	3%	0%	0%	0%	0%	20%	100%
Saturday 20:00	0%	0%	7%	0%	4%	0%	6%	0%	0%	0%	0%	0%	100%
Saturday 21:00	0%	0%	3%	0%	15%	0%	2%	0%	0%	0%	0%	0%	100%
Saturday 22:00	0%	0%	4%	0%	7%	0%	2%	13%	0%	0%	0%	0%	100%
Saturday 23:00	13%	0%	0%	0%	0%	0%	3%	10%	0%	0%	22%	0%	0%
Sunday 00:00	6%	0%	0%	0%	0%	0%	14%	0%	2%	0%	0%	0%	0%
Sunday 01:00	3%	0%	0%	0%	0%	0%	0%	1%	7%	0%	0%	0%	0%
Sunday 02:00	0%	0%	0%	0%	0%	0%	0%	0%	16%	0%	0%	0%	0%
Sunday 03:00	4%	0%	0%	0%	0%	0%	0%	4%	5%	0%	0%	0%	0%
Sunday 04:00	0%	13%	0%	0%	0%	0%	50%	3%	6%	0%	0%	0%	0%
Sunday 05:00	0%	0%	100%	0%	0%	75%	33%	22%	0%	0%	0%	0%	0%
Sunday 06:00	0%	0%	100%	0%	0%	33%	33%	0%	7%	0%	0%	0%	0%

Average vehicle wait time at the ranks

Hour beginning	Summer Street	Corrington Wynd	Hadden Street	Dee Street 2	Dee Street 1	Back Wynd	Chapel Street	Soul Bar	Castlegate	St Andrews Street	Railway Station	Airport Main Rank	Helicopter Terminal
Thursday 07:00	0	0	6	6	0	22	8	0	0	0	19	22	0
Thursday 08:00	0	0	14	3	16	27	9	0	0	0	23	13	0
Thursday 09:00	0	0	6	8	28	17	35	0	0	0	22	14	1
Thursday 10:00	0	0	14	17	17	38	28	0	0	0	12	9	1
Thursday 11:00	0	0	8	13	12	48	26	0	0	0	15	18	6
Thursday 12:00	0	0	8	0	14	27	19	0	0	0	21	54	12
Thursday 13:00	0	0	9	8	14	26	17	0	0	0	11	86	6
Thursday 14:00	0	0	8	0	11	17	6	0	0	0	15	50	8
Thursday 15:00	0	0	4	0	1	7	13	0	0	0	15	42	5
Thursday 16:00	0	0	13	0	8	13	7	0	0	0	17	10	2
Thursday 17:00	0	0	8	10	3	14	13	0	0	0	9	9	0
Thursday 18:00	0	0	9	0	4	13	12	0	0	0	12	12	4
Thursday 19:00	0	0	15	0	6	13	14	0	0	0	5	35	6
Thursday 20:00	0	0	6	0	6	14	25	3	0	0	11	10	0
Thursday 21:00	0	0	10	0	7	10	27	0	0	0	5	20	6
Thursday 22:00	0	0	11	0	4	10	19	0	10	0	11	27	6
Thursday 23:00	5	5	10	0	8	9	12	4	5	0	4	0	0
Friday 00:00	8	10	9	0	3	21	9	10	7	0	2	0	0
Friday 01:00	13	15	0	0	0	0	0	16	35	0	0	0	0
Friday 02:00	6	4	0	0	0	0	0	5	20	0	0	0	0
Friday 03:00	10	7	0	0	0	0	0	9	13	0	0	0	0
Friday 04:00	8	12	0	0	5	10	5	21	16	0	10	0	0
Friday 05:00	0	0	5	9	15	22	15	0	9	0	19	13	0
Friday 06:00	0	0	44	28	11	43	21	0	20	0	38	38	0
Friday 07:00	0	0	8	0	6	25	12	0	0	0	19	27	0
Friday 08:00	0	0	30	0	12	54	7	0	0	0	7	30	1
Friday 09:00	0	0	39	13	6	14	12	0	0	0	14	10	2
Friday 10:00	0	0	8	8	7	16	20	0	0	0	10	21	2
Friday 11:00	0	0	16	0	16	10	13	0	0	0	10	26	6
Friday 12:00	0	0	16	0	32	20	13	0	0	0	28	56	10
Friday 13:00	0	0	8	10	23	7	16	0	0	0	23	59	2
Friday 14:00	0	0	11	4	8	10	25	0	0	0	19	12	0
Friday 15:00	0	0	15	3	4	8	6	0	0	0	16	15	0
Friday 16:00	0	0	11	8	5	6	9	0	0	0	14	14	1
Friday 17:00	0	0	8	9	17	7	10	0	0	0	18	4	0
Friday 18:00	0	0	21	10	7	10	11	0	0	0	7	17	0
Friday 19:00	0	3	11	3	20	11	21	0	0	0	9	31	3
Friday 20:00	0	0	11	4	11	11	12	0	0	0	8	15	3
Friday 21:00	0	0	8	8	6	5	7	0	0	0	9	35	7
Friday 22:00	0	3	7	3	6	3	6	0	2	0	15	18	0
Friday 23:00	3	2	4	0	4	4	3	4	1	0	17	0	0
Saturday 00:00	9	3	2	0	1	0	7	6	1	0	21	0	0
Saturday 01:00	7	1	0	0	0	0	3	6	2	0	0	0	0
Saturday 02:00	8	2	3	0	0	0	3	4	4	0	0	0	0
Saturday 03:00	7	1	0	0	0	0	0	3	0	0	0	0	0
Saturday 04:00	3	9	0	0	0	0	0	7	5	0	0	0	0
Saturday 05:00	3	0	3	0	0	13	3	4	11	0	10	8	0
Saturday 06:00	0	0	12	0	4	13	18	0	3	0	24	34	0
Saturday 07:00	0	0	5	0	11	21	22	0	0	0	21	27	0
Saturday 08:00	0	0	18	0	7	45	58	0	0	0	43	52	0
Saturday 09:00	0	0	10	0	9	34	46	0	0	0	54	40	5
Saturday 10:00	0	0	6	18	13	13	53	0	0	0	43	50	14
Saturday 11:00	0	0	10	0	3	2	3	0	0	0	20	39	3
Saturday 12:00	0	0	5	0	3	4	5	0	0	0	25	34	1
Saturday 13:00	0	0	1	0	6	3	10	0	0	0	24	64	0
Saturday 14:00	0	0	3	0	0	0	3	0	0	0	28	1	0
Saturday 15:00	0	0	6	0	8	9	11	0	0	0	23	22	0
Saturday 16:00	0	0	12	0	6	10	12	0	0	0	24	37	0
Saturday 17:00	0	0	16	0	1	3	8	0	3	0	23	13	0
Saturday 18:00	0	0	2	0	5	2	6	0	3	0	17	25	0
Saturday 19:00	0	0	5	0	3	4	4	3	3	0	19	43	0
Saturday 20:00	0	0	6	3	4	13	6	0	3	0	22	16	0
Saturday 21:00	0	3	3	0	2	1	5	0	4	0	12	30	0
Saturday 22:00	0	0	2	0	0	1	2	0	0	0	15	48	0
Saturday 23:00	0	0	0	0	1	0	1	0	2	0	6	0	0
Sunday 00:00	1	0	1	0	0	0	3	1	0	0	14	0	0
Sunday 01:00	1	0	0	0	0	0	4	0	1	0	0	0	0
Sunday 02:00	3	1	0	0	0	0	3	3	3	0	0	0	0
Sunday 03:00	0	0	0	0	0	0	0	1	1	0	0	0	0
Sunday 04:00	1	3	0	0	0	0	3	3	3	0	0	0	0
Sunday 05:00	0	0	13	0	0	3	12	4	8	0	0	0	0
Sunday 06:00	0	0	3	0	13	5	4	0	7	0	0	26	0

Number of passengers who had to wait at taxi ranks

Hour Beginning	Number of passengers who had to wait for a taxi to arrive	Percentage of all passengers who had to wait
Thursday 07:00	0	0%
Thursday 08:00	1	1%
Thursday 09:00	64	27%
Thursday 10:00	0	0%
Thursday 11:00	0	0%
Thursday 12:00	0	0%
Thursday 13:00	0	0%
Thursday 14:00	0	0%
Thursday 15:00	13	7%
Thursday 16:00	38	21%
Thursday 17:00	13	7%
Thursday 18:00	28	19%
Thursday 19:00	44	24%
Thursday 20:00	20	9%
Thursday 21:00	33	15%
Thursday 22:00	37	15%
Thursday 23:00	58	24%
Friday 00:00	11	6%
Friday 01:00	0	0%
Friday 02:00	3	1%
Friday 03:00	0	0%
Friday 04:00	0	0%
Friday 05:00	0	0%
Friday 06:00	0	0%
Friday 07:00	0	0%
Friday 08:00	2	2%
Friday 09:00	1	1%
Friday 10:00	0	0%
Friday 11:00	0	0%
Friday 12:00	2	2%
Friday 13:00	7	3%
Friday 14:00	10	6%
Friday 15:00	10	4%
Friday 16:00	2	1%
Friday 17:00	104	44%
Friday 18:00	1	1%
Friday 19:00	0	0%
Friday 20:00	25	9%
Friday 21:00	0	0%
Friday 22:00	44	11%
Friday 23:00	8	2%
Saturday 00:00	16	3%
Saturday 01:00	8	2%
Saturday 02:00	3	1%
Saturday 03:00	38	7%
Saturday 04:00	0	0%
Saturday 05:00	0	0%
Saturday 06:00	1	6%
Saturday 07:00	0	0%
Saturday 08:00	0	0%
Saturday 09:00	0	0%
Saturday 10:00	0	0%
Saturday 11:00	1	1%
Saturday 12:00	29	22%
Saturday 13:00	21	13%
Saturday 14:00	134	65%
Saturday 15:00	0	0%
Saturday 16:00	22	13%
Saturday 17:00	3	1%
Saturday 18:00	0	0%
Saturday 19:00	0	0%
Saturday 20:00	19	6%
Saturday 21:00	24	5%
Saturday 22:00	71	11%
Saturday 23:00	76	12%
Sunday 00:00	53	8%
Sunday 01:00	35	5%
Sunday 02:00	4	1%
Sunday 03:00	32	5%
Sunday 04:00	0	0%
Sunday 05:00	0	0%
Sunday 06:00	1	4%