

FINAL REPORT

Dundee Taxi Unmet Demand Survey

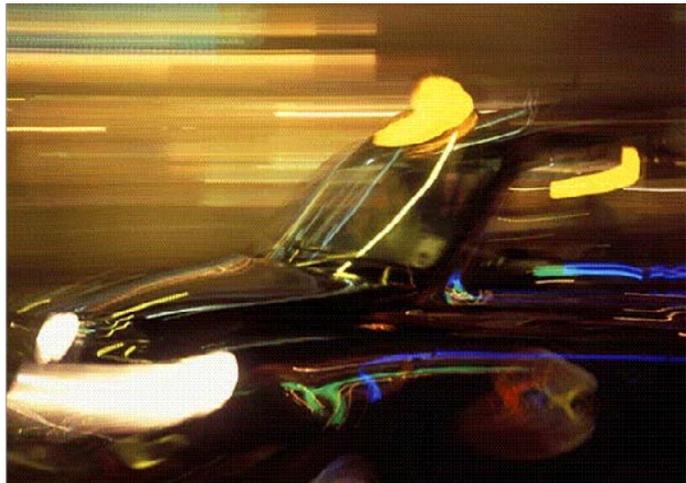
Prepared for

Dundee City Council

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Section 1 – Introduction

In preparing this report, CH2M relied, in whole or in part, on data and information provided by the Client and third parties, which information has not been independently verified by CH2M and which CH2M has assumed to be accurate, complete, reliable, and current. Therefore, while CH2M has utilised reasonable skill and care in preparing this Report, CH2M does not warrant or guarantee the conclusions set forth in this Report which are dependent or based upon data, information, or statements supplied by third parties or the client.

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Introduction

1.1 General

This study has been conducted by CH2M on behalf of Dundee City Council (DCC). The overall objective is to provide a full survey of demand for taxis in Dundee and to determine whether or not significant unmet demand for taxis exists in terms of section 10(3) of the Civic Government (Scotland) Act 1982. Specific objectives of the study are to determine:

- Whether there is any significant unmet demand for taxi services in Dundee; and
- If significant unmet demand is found, recommend how many licences would be required to meet this.

In 2007 the Scottish Government issued Best Practice Guidance for Taxi and Private Hire licensing. The Scottish Government reissued this guidance in April 2012 in recognition of a number of legislative changes. Essentially, the Government stated that the present legal position on quantity restrictions for taxis is set out in section 10(3) of the 1982 Act. The Scottish Government takes 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. The Guidance provides local authorities with assistance in local decision making when they are determining the licensing policies for their local area. Guidance is provided on a range of issues including: flexible taxi services, vehicle licensing, driver licensing and training.

The Equality Act 2010 provides a new cross-cutting legislative framework to protect the rights of individuals and advance equality of opportunity for all; to update, simplify and strengthen the previous legislation; and to deliver a simple, modern and accessible framework of discrimination law which protects individuals from unfair treatment and promotes a fair and more equal society.

The provisions in the Equality Act will come into force at different times to allow time for the people and organisations affected by the new laws to prepare for them. The Government is considering how the different provisions will be commenced so that the Act is implemented in an effective and proportionate way. Some provisions came into force on the 1st October 2010 however most of the provisions for taxi accessibility are still to come into play.

Sections 165, 166 and 167 of the Equality Act 2010 are concerned with the provision of wheelchair accessible vehicles and place obligations on drivers of registered vehicles to carry out certain duties unless granted an exemption by the licensing authority on the grounds of medical or physical condition. Section 166 will allow taxi drivers to apply to their licensing authority for an exemption from Section 165 of the Equality Act 2010. The UK Government are still considering the commencement strategy for Section 165. This section when commenced will impose a duty on taxi and private hire car drivers with wheelchair accessible vehicles to provide assistance to disabled passengers.

Background

2.1 General

This section of the report provides a general background to the taxi market in Dundee and the relevant legislation governing the market.

2.2 Background

Dundee is a city and council area located in eastern Scotland, with a resident population of 148,210 (2015 National Records of Scotland). Dundee is in the midst of significant investment and regeneration especially around its waterfront.

In terms of the licensing of taxis and private hire vehicles, Dundee City Council operated a derestricted market until 2013 when the Licensing Committee reinstated the numerical limit at 611. An unmet demand study was undertaken in 2015 and the limit was reduced to 605. In 2016, following a further unmet demand study, the limit was reduced to 575.

As of January 2017, there were 585 licensed taxis operating in Dundee of which 256 (44%) were saloon vehicles and 329 (56%) were wheelchair accessible vehicles.

The private hire fleet consists of 221 vehicles. In view of the size of this fleet relative to the taxi fleet, it is evident that taxis are the dominant force in the Dundee market.

2.3 Provision of Taxi Stands

There are currently 22 official taxi stances located throughout the Dundee licensing area; the locations and times of operation of each of the stances are provided in Appendix 1. (Add to appendix http://www.dundeetravelinfo.com/downloads/taxirankloactions_july2014.pdf)

2.4 Taxi Fares and Licence Premiums

Taxi fares are regulated by the Local Authority. There are four tariffs across the following periods;

- Daytime – Monday to Sunday, 6am until 10pm;
- Weekday evenings – Monday to Thursday, 10pm until 6am;
- Weekend evenings – Friday to Sunday, 10pm until 6am;
- Festive period – 24th December from 6pm until 6am 27th December, and 31st January from 6pm until 6am 3rd January

The standard charge tariff is made up of two elements: an initial fee (or 'drop') of £3.02 for entering the vehicle, and a fixed price addition of 16p-22p per 0.1 mile, dependent on the tariff in place, or uncompleted part thereof travelled, plus fixed additions for waiting time. Fixed additional charges are also in place for extra passengers or luggage. A standard two-mile daytime fare undertaken by one individual would therefore be £5.58. The tariffs are outlined in detail in the fare card in Figure 2.1 below.

Section 2 – Background

Figure 2.1 – Farecard for Dundee taxi hire. The values were set in 2014 and remained frozen in 2016.

Dundee City Council - Fares for the hire of taxis 				
Charges for the first passenger carried	Tariff 1	Tariff 2	Tariff 3	Tariff 4
	Daytime Monday to Sunday 6am to 10pm	Weekday Evenings Monday to Thursday 10pm to 6am	Weekend Evenings Friday to Sunday 10pm to 6am	Festive Period See Below
Initial hire not exceeding 4/10th of a mile (704 yards) or 169 seconds of waiting time or a combination of both time and distance	£3.02	£3.32	£3.62	£4.23
Each additional 1/10th of a mile (176 yards) or part thereof, or 42 seconds of waiting time or part thereof, or a combination of both time and distance	16p	17p	19p	22p
Extras - All Tariffs	For each passenger in excess of the first passenger For each parcel carried in the luggage compartment, boot or rack			30p 30p
Festive Period	Between 6pm on 24th December until 6am on 27th December and between 6pm on 31st December until 6am on 3rd January			
No charge shall be made for a child's perambulator or carriage, any items designed to assist the mobility of users such as wheelchairs or walkers, a bag or bags containing loose groceries or shopping carried in a taxi, whether in the luggage compartment or inside the taxi.				
Soiling Charge (which results in the vehicle being taken off service for any period of time)			Minimum - £25 Maximum - £50	
Payments by Credit Card will incur a surcharge of £1 per journey.				

The Private Hire and Taxi Monthly magazine publish monthly league tables of the fares for 365 authorities over a two mile journey. Each journey is ranked with one being the most expensive. The January 2017 table shows Dundee rated 216th in the table, indicating that Dundee has lower than average fares. Table 2.1 provides a comparison of where a selection of other authorities in Scotland, based on population figures and the presence of a large city or town, rank in terms of fares, showing that fares in Dundee are mid-range in comparison to other similar authorities.

Table 2.1 - Comparison of neighbouring authorities in terms of fares (Source Private Hire and Taxi Monthly, January 2017)

Local Authority	Rank
Aberdeen City	120
Fife	123
Glasgow City	160
City of Edinburgh	195
Renfrewshire	205

Section 2 – Background

Local Authority	Rank
West Lothian	211
Dundee	216
South Lanarkshire	314
North Lanarkshire	334

Definition, Measurement and Removal of Significant Unmet Demand

3.1 Introduction

Section 3 provides a definition of significant unmet demand derived from experience of over 100 unmet demand studies since 1987. This leads to an objective measure of significant unmet demand that allows clear conclusions regarding the presence or absence of this phenomenon to be drawn. Following this, a description is provided of the SUDSIM model which is a tool developed to determine the number of taxi licences required to eliminate significant unmet demand, where such unmet demand is found to exist. This method has been applied to numerous local authorities and has been tested in the courts as a way of determining if there is unmet demand for taxis.

3.2 Overview

Significant Unmet Demand (SUD) has two components:

- Patent demand – that which is directly observable; and
- ‘Suppressed’ demand – that which is released by additional supply.

Patent demand is measured using stance observation data. Suppressed (or latent) demand is assessed using data from the stance observations and public attitude interview survey. Both are brought together in a single measure of unmet demand, ISUD (Indicator of Significant Unmet Demand).

3.3 Defining Significant Unmet Demand

The provision of evidence to aid licensing authorities in making decisions about taxi provision requires that surveys of demand be carried out. Results based on observations of activity at taxi stances have become the generally accepted minimum requirement.

The definition of significant unmet demand is informed by two Court of Appeal judgements:

- R v Great Yarmouth Borough Council ex p Sawyer (1987); and
- R v Great Castle Point Borough Council ex p Maude (2002).

The Sawyer case provides an indication of the way in which an Authority may interpret the findings of survey work. In the case of Sawyer v Yarmouth City Council, 16 June 1987, Lord Justice Woolf ruled that an Authority is entitled to consider the situation from a temporal point of view as a whole. It does not have to condescend into a detailed consideration as to what may be the position in every limited part of the Authority in relation to the particular time of day. The authority is required to give effect to the language used by the Section (Section 16) and can ask itself with regard to the area as a whole whether or not it is satisfied that there is no significant unmet demand.

The term ‘suppressed’ or ‘latent’ demand has caused some confusion over the years. It should be pointed out that following Maude v Castle Point Borough Council, heard in the Court of Appeal in October 2002, the term is now interpreted to relate purely to that demand that is measurable. Following Maude, there are two components to what Lord Justice Keene prefers to refer to as ‘suppressed demand’:

- What can be determined inappropriately met demand. This is current observable demand that is being met by, for example, private hire cars illegally ranking up; and

- That which arises if people are forced to use some less satisfactory method of travel due to the unavailability of a taxi.

If demand remained at a constant level throughout the day and week, the identification and treatment of significant unmet demand would be more straight-forward. If there were more cabs than required to meet the existing demand there would be queues of cabs on stances throughout the day and night and passenger waiting times would be zero. Conversely, if too few cabs were available there would tend to be queues of passengers throughout the day. In such a case it would, in principle, be a simple matter to estimate the increase in supply of cabs necessary to just eliminate passenger queues.

Demand for taxis varies throughout the day and on different days. The problem, introduced by variable demand, becomes clear when driver earnings are considered. If demand is much higher late at night than it is during the day, an increase in cab supply large enough to eliminate peak delays will have a disproportionate effect on the occupation rate of cabs at all other times. Earnings will fall and fares might have to be increased sharply to sustain the supply of cabs at or near its new level.

The main implication of the present discussion is that it is necessary, when considering whether significant unmet demand exists, to take account of the practicability of improving the standard of service through increasing supply.

3.4 Measuring Patent Significant Unmet Demand

Taking into account the economic, administrative and legal considerations, the identification of this important aspect of significant unmet demand should be treated as a three stage process as follows:

- Identify the demand profile;
- Estimate the passenger and cab delays; and
- Compare estimated delays to the demand profile.

The broad interpretation to be given to the results of this comparison are summarised in Table 3.1.

Table 3.1 – Existing of SUD determined by comparing demand and delay profiles

Demand is:	Delays during peak only	Delays during peak and other times
Highly peaked	No SUD	Possibly a SUD
Not highly peaked	Possibly a SUD	Possible a SUD

It is clear from the content of the table that the simple descriptive approach fails to provide the necessary degree of clarity to support the decision making process in cases where the unambiguous conclusion is not achievable. However, it does provide the basis of a robust assessment of the principal component of significant unmet demand. The analysis is therefore extended to provide a more formal numerical measure of significant unmet demand. This is based on the principles contained in the descriptive approach but provides greater clarity. A description follows.

The measure feeds directly off the results of observations of activity at the stances. In particular it takes account of:

- Case law that suggests an authority should take a broad view of the market;
- The effect of different levels of supply during different periods at the stance on service quality; and
- The need for consistent treatment of different authorities, and the same authority over time.

The Index of Significant Unmet Demand (ISUD) was developed in the early 1990's and is based on the following formula. The SF element was introduced in 2003 and the LDF element was introduced in 2006 to reflect the increased emphasis on latent demand in DfT Guidance.

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

Where:

APD = Average Passenger Delay calculated across the entire week in minutes.

PF = Peaking Factor. If passenger demand is highly peaked at night the factor takes the value of 0.5. If it is not peaked the value is 1. Following case law this provides dispensation for the effects of peaked demand on the ability of the Trade to meet that demand. To identify high peaking we are generally looking for demand at night (at weekends) to be substantially higher than demand at other times.

GID = General Incidence of Delay. This is measured as the proportion of passengers who travel in hours where the delay exceeds one minute.

SSP = Steady State Performance. The corollary of providing dispensation during the peaks in demand is that it is necessary to focus on performance during "normal" hours. This is measured by the proportion of hours during weekday daytimes when the market exhibits excess demand conditions (i.e. passenger queues form at stances).

SF = Seasonality Factor. 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 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 taxi trade, and a value of 0.8 for surveys conducted in December during the pre-Christmas rush of activity. Generally, surveys in these atypical months, and in school holidays, should be avoided.

LDF = Latent Demand Factor. This is derived from the public attitude survey results and provides a measure of the proportion of the public who have given up trying to obtain a taxi at either a stance or by flagdown during the previous three months. It is measured as 1+ proportion giving up waiting. The inclusion of this factor is a tactical response to the latest guidance.

The product of these six measures provides an index value. The index is exponential and values above the 80 mark have been found to indicate significant unmet demand. This benchmark was defined by applying the factor to the 25 or so studies that had been conducted at the point it was developed. These earlier studies

had used the same principles but in a less structured manner. The highest ISUD value for a study where a conclusion of no significant unmet demand had been found was 72. The threshold was therefore set at 80. The ISUD factor has been applied to over 80 studies by CH2M and has been adopted by others working in the field. It has proved to be a robust, intuitively appealing and reliable measure.

Suppressed/latent demand is explicitly included in the above analysis by the inclusion of the LDF factor and because any known illegal plying for hire by the private hire trade is included in the stance observation data. This covers both elements of suppressed/latent demand resulting from the Maude case referred to above and is intended to provide a 'belt and braces' approach. A consideration of latent demand is also included where there is a need to increase the number of taxi licences following a finding of significant unmet demand. This is discussed in the next section.

3.5 Determining the Number of New Licences Required to Eliminate Significant Unmet Demand

To provide advice on the increase in licences required to eliminate significant unmet demand, CH2M has developed a predictive model. SUDSIM is a product of 20 years experience of analysing taxi demand. It is a mathematical model, which predicts the number of additional licences required to eliminate significant unmet demand as a function of key market characteristics.

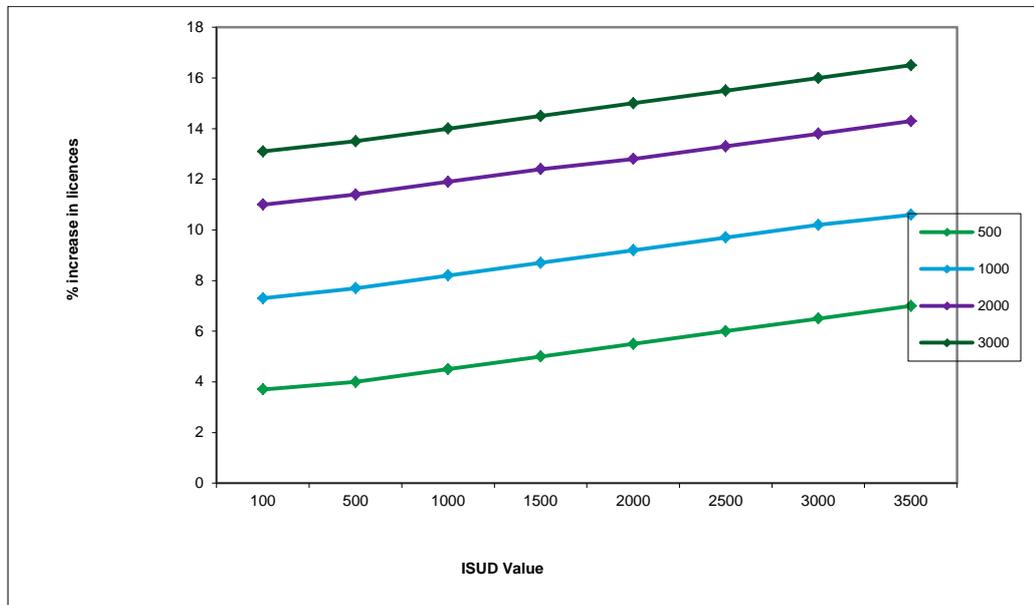
SUDSIM represents a synthesis of a queue simulation work that was previously used (1989 to 2002) to predict the alleviation of significant unmet demand and the ISUD factor described above (hence the term SUDSIM). The benefit of this approach is that it provides a direct relationship between the scale of the ISUD factor and the number of new hackney licences required.

SUDSIM was developed taking the recommendations from 14 previous studies that resulted in an increase in licences, and using these data to calibrate an econometric model. The model provides a relationship between the recommended increase in licences and three key market indicators:

- The population of the licensing authority;
- The number of taxis already licensed by the licensing authority; and
- The size of the SUD factor.

The main implications of the model are illustrated in Figure 3.1 below. The figure shows that the percentage increase in a taxi fleet required to eliminate significant unmet demand is positively related to the population per taxi (PPT) and the value of the ISUD factor over the expected range of these two variables.

Figure 3.1 – Forecast increase in taxi fleet size as a function of population per taxi (PPT) and the ISUD value



Where significant unmet demand is identified, the recommended increase in licences is therefore determined by the following formula:

$$\text{New Licences} = \text{SUDSIM} \times \text{Latent Demand Factor}$$

Where:

Latent Demand Factor = (1 + proportion giving up waiting for a taxi at either a stance or via flagdown).

3.6 Note on Scope of Assessing Significant Unmet Demand

It is useful to note the extent to which a licensing authority is required to consider peripheral matters when establishing the existence or otherwise of significant unmet demand. This issue is informed by *R v Brighton Borough Council, exp p Bunch 1989*¹. This case set the precedent that it is only those services that are exclusive to taxis that need concern a licensing authority when considering significant unmet demand. Telephone booked trips, trips booked in advance or indeed the provision of bus type services are not exclusive to taxis and have therefore been excluded from consideration.

¹ See Button JH 'Taxis – Licensing Law and Practice' 2nd edition Tottel 2006 P226-7

Evidence of Patent Unmet Demand – Stance Observation Results

4.1 Introduction

This section of the report highlights the results of the stance observation survey. The stance observation program covered a period of 195 hours during October to November 2016. Some 19,456 passengers and 13,302 departures were recorded across eight selected stances. A summary of the stance observation programme is provided in Appendix 2.

The results presented in this section summarise the information and draw out its implications. This is achieved by using five indicators:

- The Balance of Supply and Demand – this indicates the proportion of the time that the market exhibits excess demand, equilibrium and excess supply;
- Average Delays and Total Demand – this indicates the overall level of passengers and cab delays and provides estimates of total demand;
- The Demand/Delay Profile – this provides the key information required to determine the existence or otherwise of significant unmet demand;
- The Proportions of Passengers Experiencing Given Levels of Delay – this provides a guide to the generality of passenger delay.

4.2 The Balance of Supply and Demand

The results of the analysis are presented in Table 4.1 below. The predominant market state is one of equilibrium. Excess supply (queues of cabs) was experienced during 28% of the hours observed while excess demand (queues of passengers) was experienced 8% of the hours observed. Conditions are generally favourable to customers at all times of the day.

Table 4.1 – The balance of supply and demand in the Dundee stance-based taxi market (percentage of hours observed)

Period		Excess Demand (Max Passenger Queue ≥ 3)	Equilibrium	Excess Supply (Min Cab Queue ≥ 3)
Weekday	Day	2	71	26
	Night	8	64	28
Weekend	Day	0	76	24
	Night	29	39	32
Sunday	Day	0	69	31
Total 2016		8	64	28
Total 2015		8	46	46
Total 2013		6	60	34

NB – Excess Demand = Maximum passenger queue ≥ 3 . Excess Supply = Minimum Cab Queue ≥ 3 – values derived over 12 time periods within an hour.

As detailed in Table 4.1 conditions have remained similar for passengers since the previous study in 2015. The number of hours where excess demand was observed have remained at 8% while the hours the market is in equilibrium has increased from 46% to 64%.

4.3 Average Delays and Total Demand

The following estimates of average delays and throughput were produced for each selected stance in Dundee (Table 4.2).

The survey suggests some 19,456 passenger departures occur per week from stances in Dundee involving some 13,302 cab departures. The taxi trade is concentrated at the stance at Nethergate (Steeple Church) accounting for 38% of the total passenger departures. On average cabs wait 11.42 minutes for a passenger. On average passengers wait 0.21 minutes for a cab.

Since the previous study in 2015 passenger demand has increased by 29% and passenger delay has marginally increased.

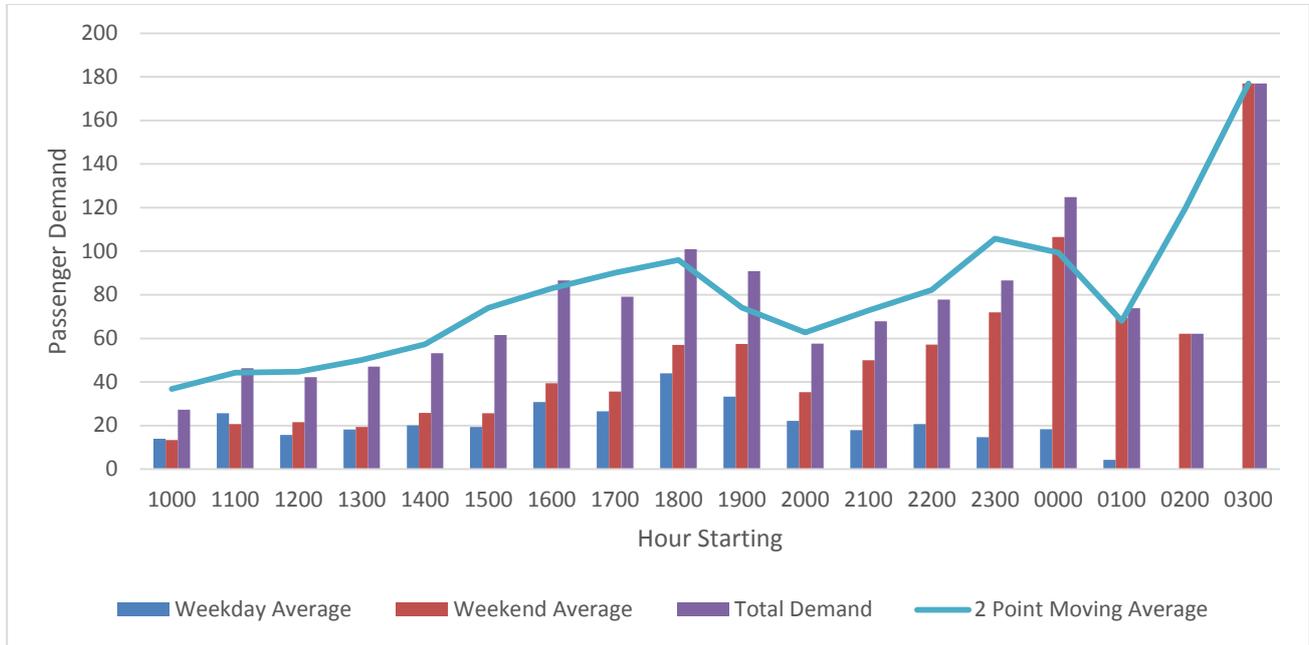
Table 4.2 Average Delays and Total Demand (Delays in Minutes)

Stance	Passenger Departures	Cab Departures	Average Passenger Delay in Minutes	Average Cab Delay in Minutes
Dundee Rail Station	2,227	1,661	0.14	16.60
Nethergate (Steeple Church)	7,310	4,478	0.08	11.77
Market Gate	1,853	1,201	0.25	9.40
Meadowside	3,115	2,199	0.03	14.80
Nethergate DCA	1,820	933	0.70	5.03
Lochee High Street	528	759	0.07	5.87
Brook Street, Broughty Ferry	2,043	1,647	0.61	5.68
Nine Wells Hospital	560	424	0.00	21..89
Total 2016	19,456	13,302	0.21	11.42
Total 2015	15,081	9,296	0.09	18.54
Total 2013	10,492	7,230	0.28	20.31

4.4 The Delay/Demand Profile

Figure 4.1 provides a graphical illustration of passenger demand for the Monday to Saturday period between the hours of 10:00 and 04:00.

Figure 4.1 Passenger Demand by Time of Day in 2016 (Monday to Saturday)



The profile of demand shows peaks in demand at 0300 on a weekend and at 1800 on weekdays.

Figure 4.2 Passenger Delay by Time of Day in 2016(Monday to Saturday)

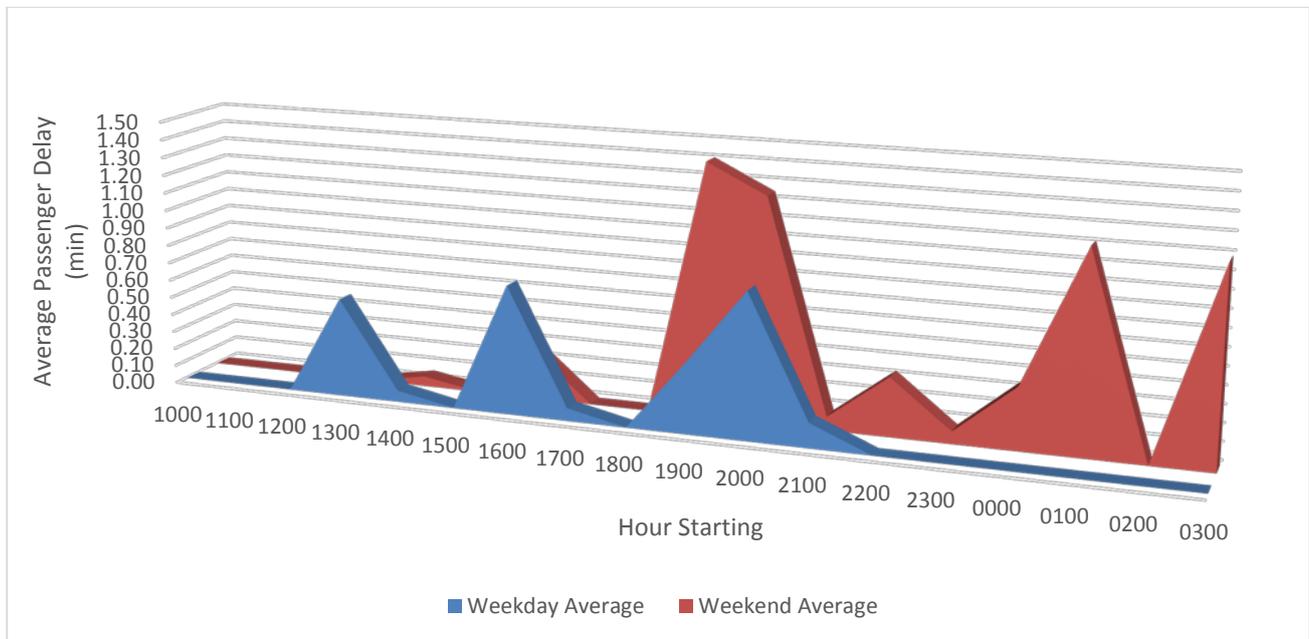


Figure 4.2 provides an illustration of passenger delay by the time of day for the weekday and weekend periods. It shows that delay peaks on weekdays across the day, and during the evening and night on weekends.

4.5 The General Incidence of Passenger Delay

The stance observations data can be used to provide a simple assessment of the likelihood of passengers encountering delay at stances. The results are presented in Table 4.3 below.

Table 4.3 – General incidence of passenger delay (percentage of passengers travelling in hours where delay exceeds one minute)

Year	Delay > 0	Delay > 1 min	Delay > 5 min
2016	8.29	1.73	0.00
2015	5.03	1.98	0.22
2013	9.28	2.93	0.81

In 2016 1.73% of passengers are likely to experience more than a minute of delay. It is this proportion (1.73%) that is used within the ISUD as the 'Generality of Passenger Delay'. This is very similar proportion as in 2015.

Evidence of Suppressed Demand – Public Attitude Pedestrian Survey Results

5.1 Introduction

A public attitude survey was designed with the aim of collecting information regarding opinions on the taxi market in Dundee. In particular, the survey allowed an assessment of flagdown, telephone and stance delays, the satisfaction with delays and general use information.

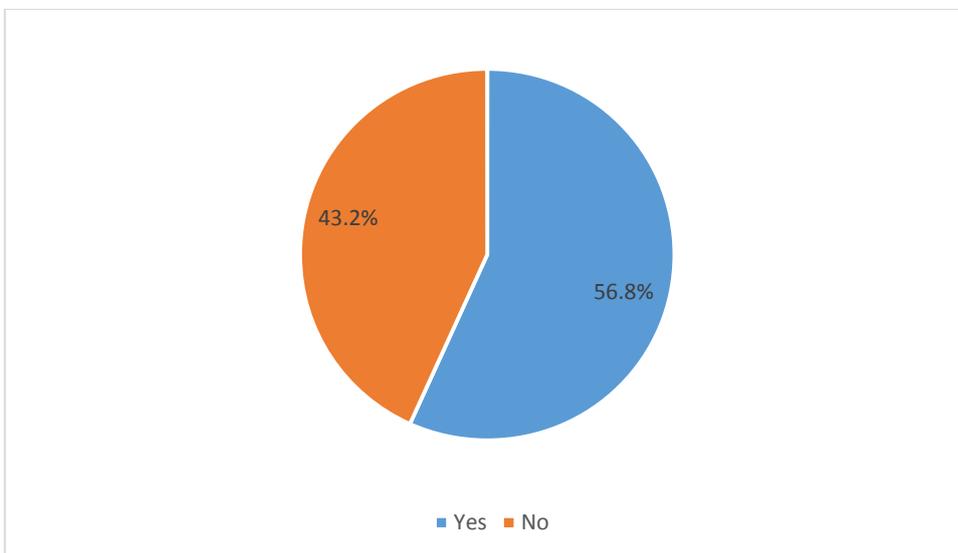
Some 361 on-street public attitude surveys were carried out in November and December 2016. The surveys were conducted across a range of locations within the Dundee licensing area.

It should be noted that in the tables and figures that follow the totals do not always add up to the same amount which is due to one of two reasons. First, not all respondents were required to answer all questions; and second, some respondents failed to answer some questions that were asked.

5.2 General Information

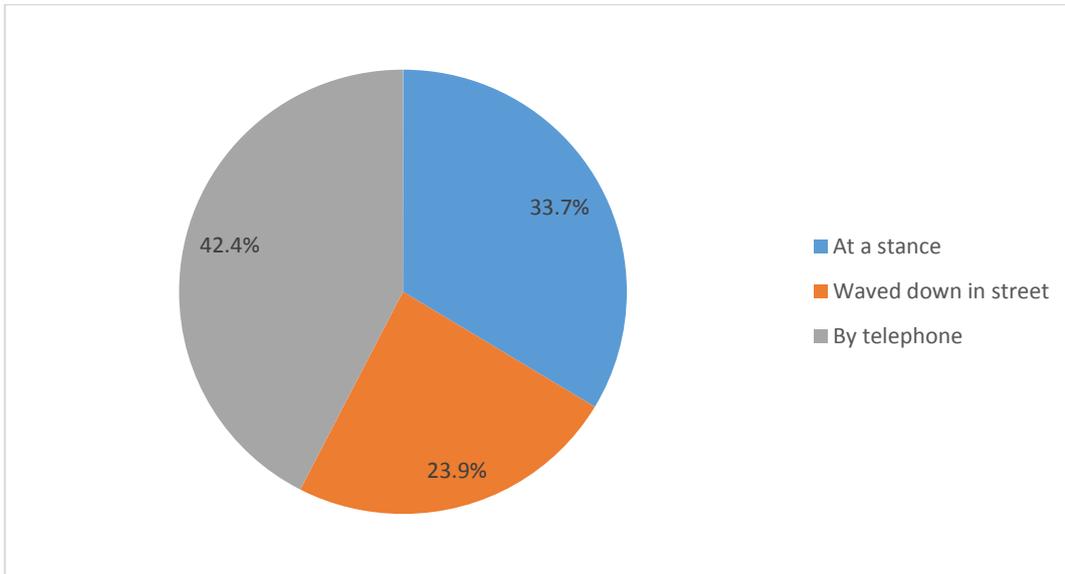
Respondents were asked whether they had made a trip by taxi in the past three months. Figure 5.1 shows that 56.8% (205) of the 361 people surveyed had made a trip by taxi in the last three months.

Figure 5.1 – Have you made a trip by taxi in the last three months?



Trip makers (205) were asked how they obtained their taxi or private hire vehicle. Some 33.7% of trip makers (69) stated that they hired their taxi at a stance while 23.9% (49) of hirings were obtained a taxi by on-street flagdown. Some 42.4% (87) of trips were achieved by telephone. Figure 5.2 reveals the pattern of hire.

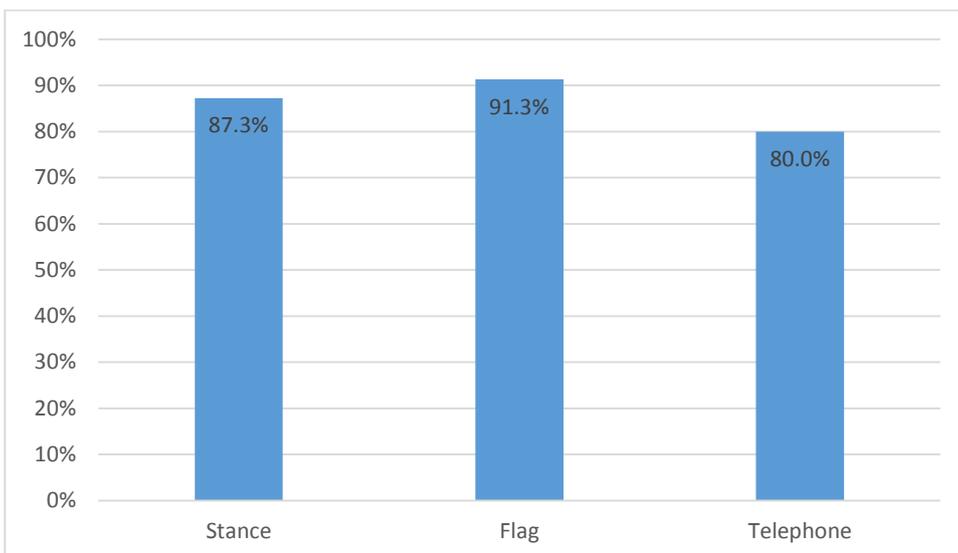
Figure 5.2 – Method of hire for last trip



Respondents were asked what type of vehicle they had obtained on their last trip. Some 66.8% were saloon vehicles. They were then asked if they were satisfied with the time taken and the promptness of the vehicles arrival. When considering all hirings, the majority of customers (84.9%) were satisfied with their last taxi journey.

Figure 5.3 shows that for each method of obtaining a vehicle, the majority were satisfied with the length of time they had to wait. Those obtaining their taxi at a stance provided the highest levels of satisfaction.

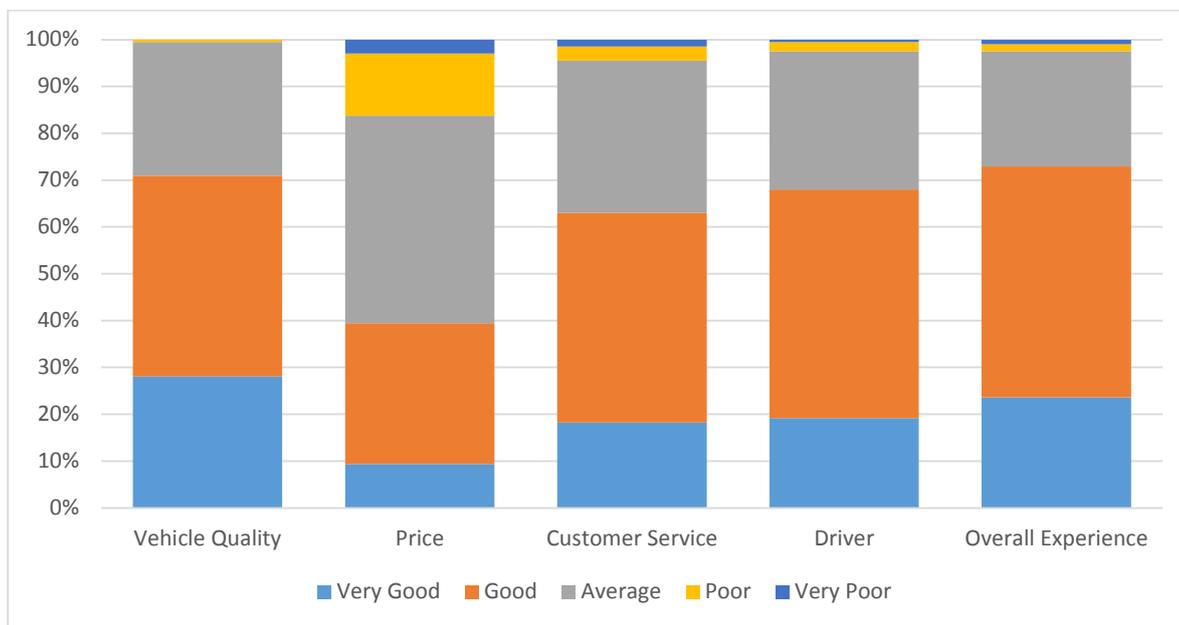
Figure 5.3 – Satisfaction with delay on last trip by method of hire



Trip makers were asked to rate five elements from their last taxi journey on a scale from very poor to very good. The results in Figure 5.4 show that all elements were generally good. When poor ratings were given respondents were asked to provide a reason for their rating. Negative ratings included reasons such as:

- Prices are very high when crossing the local authority boundary
- £18 for a 6 mile fare is excessive
- All over bad service, rude and expensive bad driver
- Expensive
- Pricey
- Driver didn't speak
- Driver not accommodating
- Late, rude, expensive

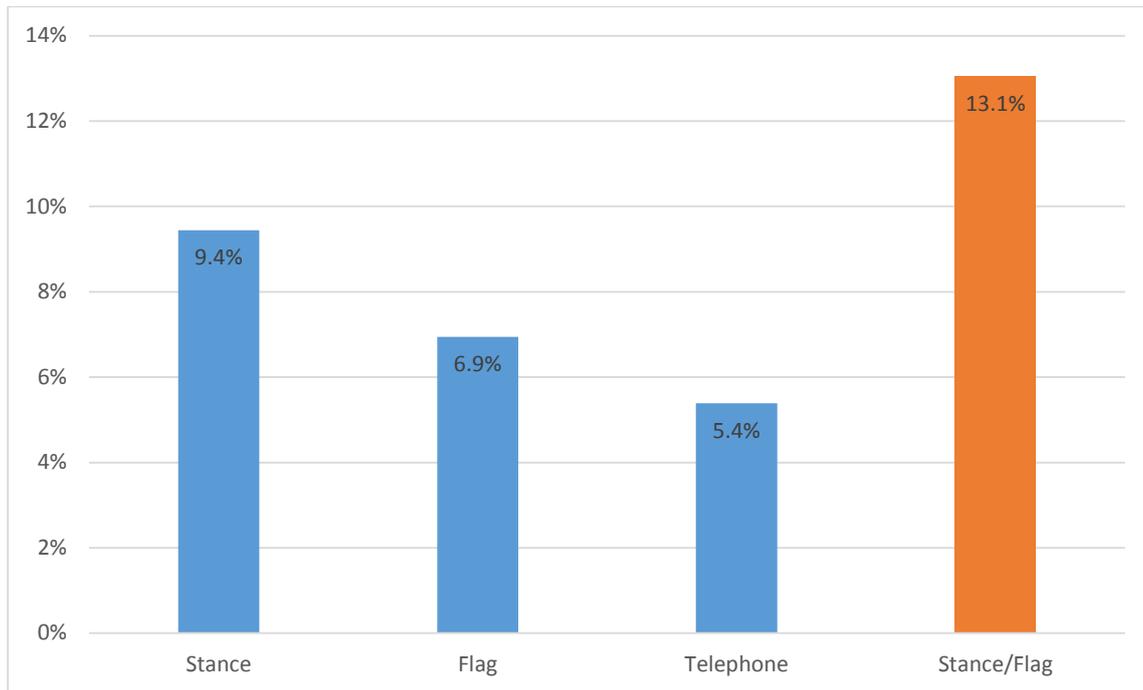
Figure 5.4 – Rating of last journey



5.3 Attempted method of hire

In order to measure demand suppression, all respondents were asked to identify whether or not they had given up waiting for a taxi or private hire vehicle at a stance, on the street, or by telephone in Dundee in the last three months. The results are summarised in Figure 5.5.

Figure 5.5 – Latent demand by method of hire – Given up trying to make a hiring?



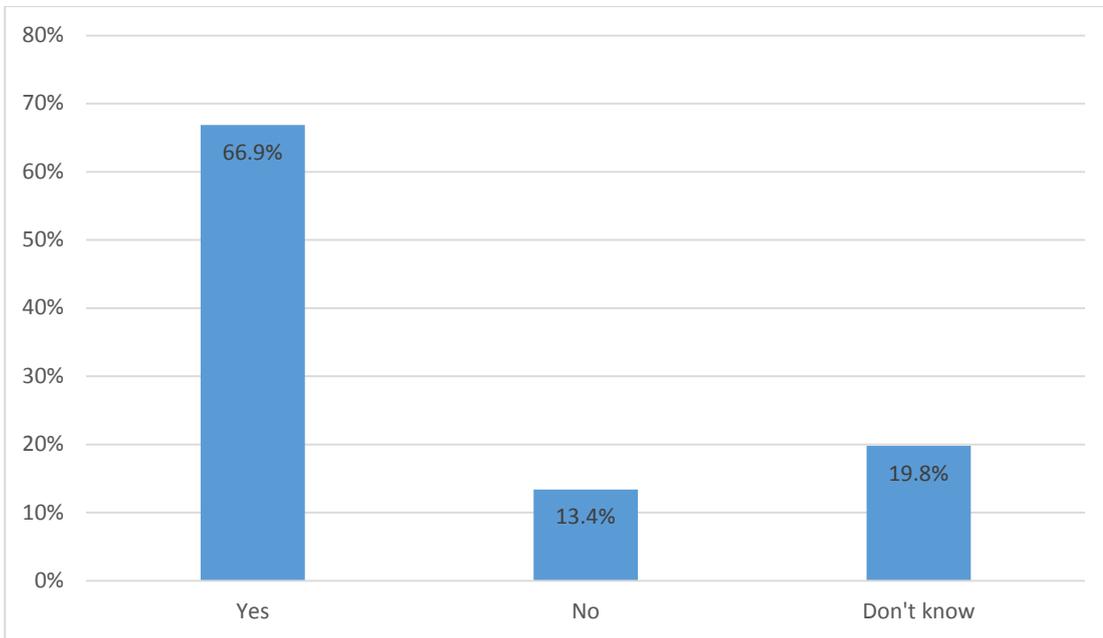
As indicated in Figure 5.5, some 13.1% of respondents had given up waiting for a taxi at a stance and/or by flagdown in the last three months. This has implications for the interpretation of the results (see Chapter 8 below).

Respondents who had given up trying to obtain a taxi in the last three months were asked the location where they had given up waiting for a taxi. The most common areas respondents gave were the City centre, Broughty Ferry and the rail station. In addition, the majority of respondents had given up waiting at night.

5.4 Service Provision

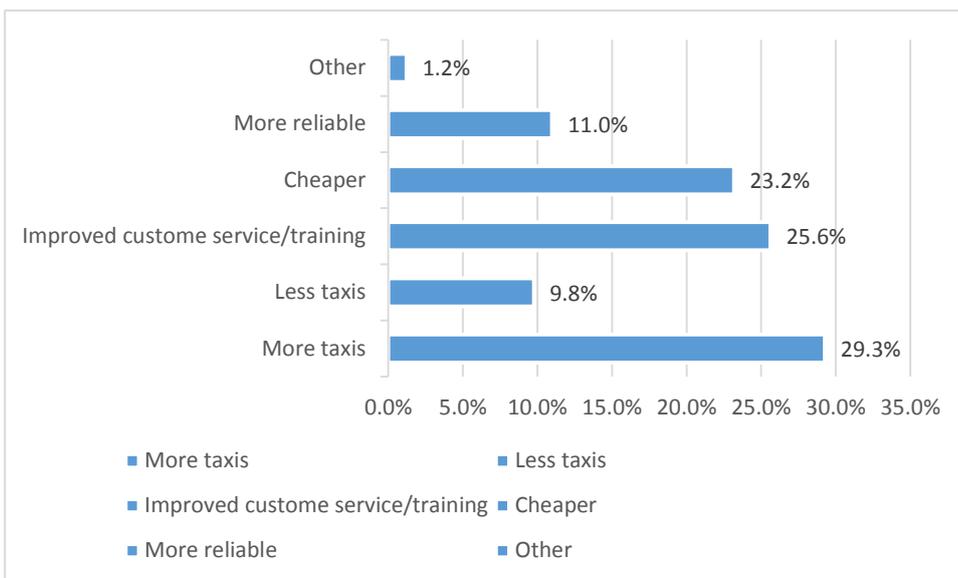
The difference between a taxi and private hire vehicle was explained to each respondent prior to asking participants whether they feel there are enough taxis in Dundee at the current time. Some 66.9% (240) commented that there are sufficient taxis in Dundee (see Figure 5.6).

Figure 5.6 – Are there sufficient taxis in Dundee?



The survey then asked respondents whether taxi services in Dundee could be improved. Some 26.5% (95) felt that they could be improved while 41.8% thought no improvements were needed. Suggested improvements are listed in Figure 5.7. The graph shows that the majority of responses felt that more taxis should be provided at peak times and that drivers and operators should have better customer service skills.

Figure 5.7 – How could hackney carriage services be improved (multiple responses)



5.5 Stances

Respondents were asked if they felt there was sufficient provision of taxi stances in Dundee. Some 61% of respondents felt that there are currently enough stances in Dundee. Suggested improvements from respondents who answered 'no' are listed in Table 5.1.

Table 5.1 – Suggested improvements for taxi stances in Dundee

Suggested Improvement	No. of Responses
Provide information on location of existing stances	17
Provide new stances	26
Improve signage of existing stances	10
Other: <ul style="list-style-type: none"> • More taxis waiting at stances 	1

Respondents were asked if there were any locations in Dundee where new stances were needed. A total of 53.4% said that no new stances were needed in Dundee whilst 35.9% stated they did not know. The remaining 10.7% of respondents who stated that they would like to see a new stances were asked to provide a location. The most common locations cited included:

- Odeon, Douglas
- Lochee
- Discovery
- Seagate

5.6 Summary

Key points from the public attitude survey can be summarised as:

- Some 33.7% of hiring's are from a stance;
- High levels of satisfaction with delay on last trip – hiring by flagdown providing the highest levels;
- Some 13.1% of people had given up trying to obtain a taxi at a stance or by flagdown;
- Some 26.5% of people felt that taxi services could be improved – more provided at peak times and better customer service; and
- Some 10.7% of people believe that new stances are needed.

Consultation

6.1 Introduction

Guidelines issued by the Scottish Government state that consultation should be undertaken with the following organisations and stakeholders:

- All those working in the market;
- Consumer and passenger (include disabled) groups;
- Groups which represent those passengers with special needs;
- The Police;
- Local interest groups such as hospitals or visitor attractions; and
- A wide range of transport stakeholders such as rail/bus/coach providers and transport managers.

In order to consult with relevant stakeholders across Dundee, written consultation was undertaken.

6.2 Indirect (Written) Consultation

A number of stakeholders were contacted by letter and email. This assured the Scottish Government guidelines were fulfilled and all relevant organisations and bodies were provided with an opportunity to comment.

In accordance with advice issued by the Scottish Government the following organisations were contacted:

- Dundee City Council;
- Trade representatives;
- User/disability groups representing those passengers with special needs;
- Local interest groups including hospitals, visitor attractions, entertainment outlets and education establishments; and
- Rail bus and coach operators.

A summary of the responses received are provided below.

The Richmond Fellowship Scotland – Member 1

The respondent considered that there tended to be less taxis available during the school run period – especially wheelchair accessible taxis.

In terms of the image of the trade they considered the type and quality of vehicles to be ‘fine’ as well as the level of cleanliness. In terms of drivers they felt that some taxi drivers were good but had on occasion met some rude drivers.

It was suggested that there was a need for more wheelchair accessible taxis. Fares were considered to be high in comparison to other authorities in Scotland.

The Richmond Fellowship Scotland – Member 2

Respondent 2 considered the quality of vehicles to be satisfactory, however they made comment that sometimes drivers were rude. Anecdotal evidence was provided of occasions where some drivers had refused to take wheelchair bound passengers and fellowship staff.

It was suggested that a taxi stance could be implemented in Finty. It was suggested that there was a need for more wheelchair accessible taxis and that on occasion it was difficult to pre book accessible vehicles. Fares were considered to be high. The respondent did however feel safe using taxis and private hire vehicles in Dundee.

Anonymous 1

The respondent considered the provision of taxis and private hire vehicles to be good at all times of day and in all areas. However they did state that some drivers are reluctant to take on shorter journeys. Vehicle quality was considered to be poor in comparison to other cities – comment was made as to a shortage of quality saloon cars. The attitude of drivers was also considered to be poor in comparison to other cities and it was felt that they portray a poor image of the city. It was suggested that drivers would benefit from customer service training as good customer service is ‘imperative as ambassadors to the city’. It was also suggested that taxi stances should be signposted more clearly. Fares were considered to be high in comparison to other Scottish cities.

Tele Taxis Dundee

This respondent felt that the public get a very good service at all times of the day across all areas in Dundee. Vehicle type and quality was considered good and vehicles and vehicles were noted to be quite clean, although a few Taxi Operators let themselves down.

Driver attitudes were considered to be reasonable but quite a few Taxi drivers could make more of an effort to assist passengers with shopping etc and also do more to help the elderly.

It was suggested that the majority of drivers do not adhere to the dress code and that this should be enforced.

The respondent felt that there was no need for any more wheelchair accessible vehicles but that the ramps and straps should be part of the annual test as a lot of drivers say their ramps and straps are broken so as they don't have to pick up disabled passengers.

It was suggested that advertising on hackney cars is a good idea as operators can make more income. Advertising taxi office numbers on Private Hires was suggested.

It was also suggested that all vehicles should be fitted with CCTV.

Deriving the Significant Unmet Demand Index Value

7.1 Introduction

The data provided in the previous chapters can be summarised using CH2M’s ISUD factor as described in Chapter 3.

The component parts of the index, their source and their values are given below;

Average Passenger Delay (Table 4.2)	0.21
Peak Factor (Figure 4.2)	1
General Incidence of Delay (Table 4.3)	1.73
Steady State Performance (Table 4.1)	2
Seasonality Factor (Section 3)	1
Latent Demand Factor (Section 5)	1.131
ISUD (0.21*1*1.73*2*1*1.131)	0.82

The cut off level for a significant unmet demand is 80. It is clear that Dundee is well below this cut off point as the ISUD is 0.82, indicating that there is **NO significant unmet demand**. This conclusions covers both patent and latent/suppressed demand.

Supply of Taxis

8.1 Introduction

To examine the extent to which there may be an excess supply of vehicles, relative to demand in Dundee, a simulation exercise has been conducted. The exercise used CH2M's STAR4 simulation model (Simulation of Taxis at Ranks). The simulation takes a typical daytime observation period (in this case Nethergate stance between 10am and 6pm on 25th October 2016) and estimates the impact of reducing the number of vehicles serving the stance on cab and passenger queues and delays. The analysis is intended to be indicative of the general impact of reduced supply and should not be interpreted as a recommendation for any given reduction in the size of the fleet. The results of the analysis are presented in Figure 8.1 below.

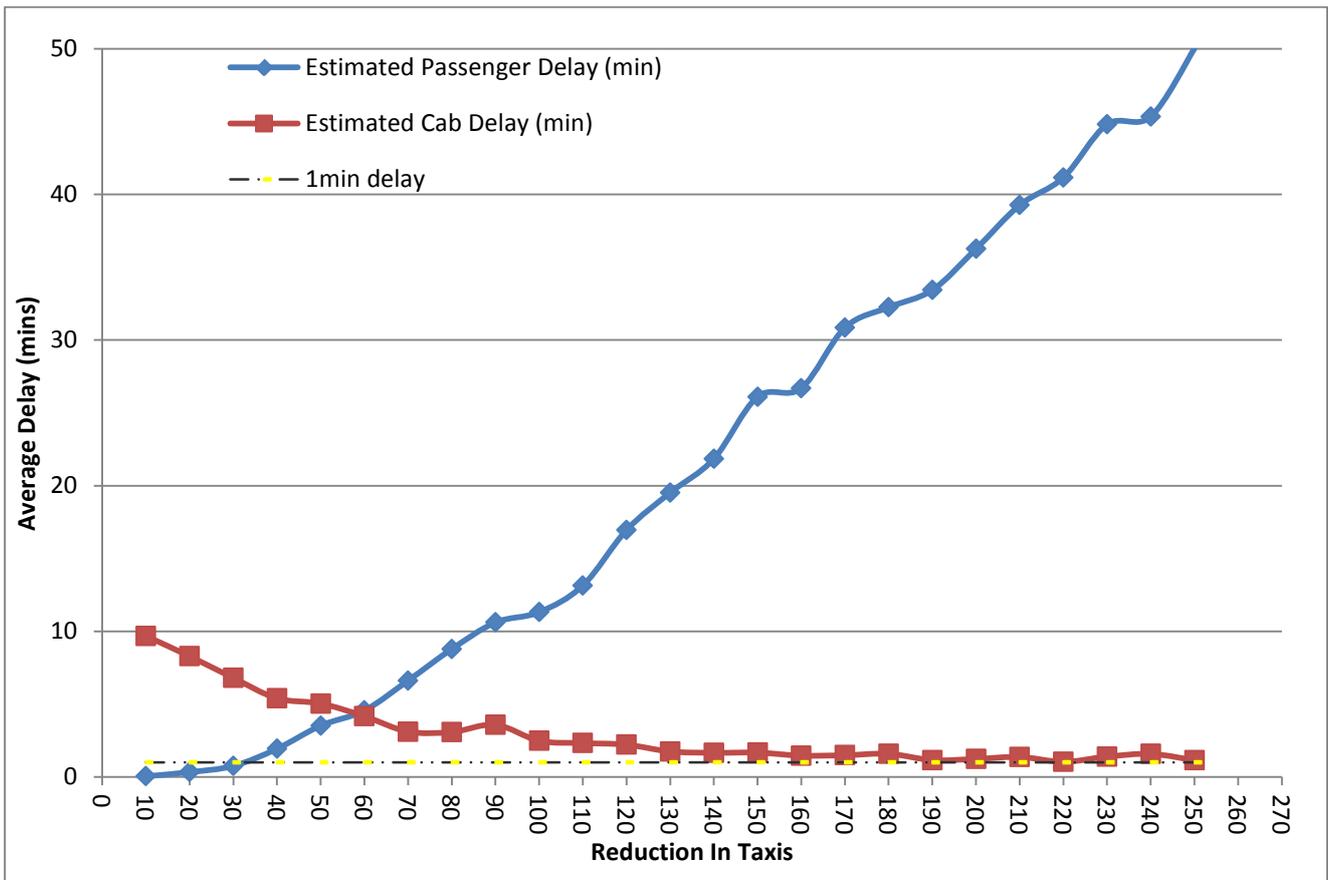
8.2 Analysis

The analysis shows that the removal of around 10 licences from circulation on the day in question would have been unlikely to have resulted in any passenger delay at the stance. On the other hand, cabs at the stance would have experienced significantly faster turn-around times. A reduction in the fleet beyond this would result in the introduction of passenger delay at the stance, with the level of passenger delay generally increasing as the fleet is reduced in size. Average passenger delay would reach 1 minute if the fleet were to be reduced by 30 vehicles.

This exercise was designed to show the effect of removing licences during typical day time conditions however during non-typical conditions i.e. at a busy night time stance the effect may differ.

Figure 8.1 – Assessment of Supply – Simulation Results

Section 8 – Supply of Taxis



Summary and Conclusions

9.1 Introduction

CH2M has conducted a study of the taxi market on behalf of Dundee City Council. The present study has been conducted in pursuit of the following objectives. To determine;

- Whether or not there is a significant unmet demand for taxi services within Dundee as defined in Section 16 of the Transport Act 1985; and
- How many additional taxis are required to eliminate any significant unmet demand.

This section provides a brief description of the work undertaken and summarises the conclusions.

9.2 Significant Unmet Demand

The 2016 study has identified that there is NO evidence of significant unmet demand for taxis in Dundee. This conclusion is based on an assessment of the implications of case law that has emerged since 2000, and the results of CH2M's analysis.

It is clear from the results that demand for taxi services has increased in Dundee since the last survey in 2015, but that people are well served by the trade given that passenger delay has only marginally increased since the last survey.

9.3 Public Perception

Public perception of the service was obtained through the undertaking of 361 surveys. Overall the public were generally satisfied with the service – key points included;

- Some 33.7% of hirings are from a stance;
- High levels of satisfaction with delay on last trip – hiring by on street flagdown providing the highest levels;
- Some 13.1% of people had given up trying to obtain a taxi at a stance or by flagdown;
- Some 26.5% of people felt that taxi services could be improved with key suggestions including increased provision at peak times and the need for taxis to be cheaper; and
- Some 10.7% of people believe that new stances are needed.

9.4 Recommendations

Our 2016 study has identified that there is NO evidence of significant demand in Dundee. This conclusion covers both patent and latent/suppressed demand and is based on an assessment of the implications of case law that has emerged since 2000, and the results of CH2M's analysis.

On this basis the authority has the discretion in its taxi licensing policy and may either:

- Maintain the current limit of 575 taxi licences;
- Issue any number of additional plates as it sees fit, either in one allocation or a series of allocations; or
- Reduce the numerical limit to 555.