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# TAXI AVAILABILITY STUDY

## for PCN Determination

*Prepared for the San Francisco Taxicab Commission*

*January 2006*

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## **EXECUTIVE SUMMARY**

The San Francisco Taxicab Commission was created through San Francisco Proposition D in 1998. Among its many duties, the Commission is responsible for regulating taxicabs and releasing a sufficient number of taxi medallions to assure adequate service throughout the City and County of San Francisco. Response time standards set by the Commission for telephone prearrangement of taxi service are as follows: 70 percent of the time, taxicabs will arrive within 10 minutes of the service call; 80 percent of the time, taxicabs will arrive within 15 minutes of the service call; and 99 percent of the time, taxicabs will arrive within 30 minutes of the service call. Currently, there are 1,381 medallions issued in San Francisco. A hearing to determine the Public Convenience and Necessity (PCN) for additional medallions will take place in early 2006. To inform the PCN hearing, the Taxicab Commission contracted with Q2 Research Group in September 2005 to conduct an up-to-date study on taxi availability in San Francisco. Data for the study were collected from October 17 through October 30, 2005.

The study measured taxi availability for each of four means of obtaining taxi service: dispatch requests (telephone prearrangement), including a subsample of requests for ramp taxi service (special vehicles with a lift for customers with wheelchairs), flag downs, hotel taxi stands, and airport staging lots. The methods employed in the study were based on recommendations for measuring taxi availability made by consultant Bruce Schaller in a 2003 report to the Taxicab Commission.

### **Methodology**

A total of 636 dispatch calls were made for the dispatch survey. The sample of locations was distributed across 9 geographic regions of the city specified by the Taxi Commission. The results were weighted to correct for oversampling in areas of the city representing a lower volume of actual dispatch service, and to correct for oversampling during peak periods (Friday and Saturday evenings).

For the flag down survey, surveyors made a total of 300 attempts to flag down taxis in 42 locations with heavy foot traffic, including Fisherman's Wharf, North Beach, the Financial District/Embarcadero, Union Street, the Marina, the Geary Corridor, South of Market to SBC Park, the Mission, Downtown, West Portal, Laurel Heights, UCSF, and the Richmond District. The attempts were made throughout the week and times of day, and the results were not weighted.

To determine availability at hotel taxi stands, a total of 120 observations of taxi activity at 12 hotel stands were conducted. Observations took place throughout the week during morning, afternoon, evening, and late night hours (Friday and Saturday only).

SFO Landside Operations conducted a survey of airport staging lots during the study period, recording the number of staged taxis and exits at each hour from 7am to midnight.

## **Key Findings**

### ***Dispatch Survey***

- Overall, 49 percent of dispatch attempts (including those for which no cab is available or no dispatcher is reached) will result in a cab arriving.
- Thirty-five percent of all taxis dispatched are no-shows.
- The average time between when the taxi is dispatched and when it arrives is 9 minutes and 23 seconds.
- Requests for ramp vehicles ending in a dispatch are 6 times more likely than regular taxis to result in a no-show.
- No-shows ranged from a low of 25 percent on Sunday-Thursday 6am to 6pm, to a high of 72 percent on Friday/Saturday evenings between 6pm and midnight.
- While no-show rates varied widely by region of the city, the South of Market area had the highest rate at 52 percent.
- Response times were slowest in the Sunset and South area of the city (Visitacion Valley/City College).

### ***Flag Down Survey***

- Ninety-five percent of the flag down attempts in the study were successful.
- The average time for a successful flag down was 4 minutes, 37 seconds.
- Average wait times were longest on Sunday-Thursday between 6am and 6pm, exceeding 5 minutes, with the shortest wait times on Friday/Saturday evening, averaging just over 3 minutes.

### ***Observations at Hotel Stands***

- Of all observations made at hotel stands, parties were waiting for cabs 40 percent of the time, cabs were waiting for parties in 25 percent, and no cabs and no parties were waiting in 35 percent.

- The number of parties waiting for cabs ranged from 1 to 4, with a mean of 2. The number of cabs waiting for fares ranged from 1 to 3, with a mean of 1.3.
- Of parties who had to wait for a taxi, the average wait time was 1 minute, 40 seconds.
- Customers are more likely to find a cab waiting at their hotel on a Sunday through Thursday than on a Friday or Saturday, morning or evening.

### ***Survey at SFO Taxi Staging Lots***

- The average number of cabs staged per hour was 160, and the average number of exits per hour was 198, suggesting an average wait of 49 minutes.
- Waiting times in the staging lots ranged from an average of 67 minutes in the morning (7am to noon) to 32 minutes in the evening peak hours (5pm to 9pm).

### ***Factors Affecting Demand***

- Although the number of enplaned passengers at SFO has increased since 2003, the average growth rate between 2000 and 2005 is –4.6 percent.
- The number of occupied hotel nights increased steadily between January and September 2005, an average growth of between 4.0 percent and 4.8 percent since 2000.

### **Conclusions**

Currently, taxi service via telephone prearrangement does not meet the response time goals set by the Commission, largely because of the significant percent of calls that are either unanswered or result in a no-show (51 percent). No-show rates are particularly high on Friday and Saturday evenings and for paratransit requests. However, availability via telephone prearrangement appears to have improved since 2000, when the chance of success was 40 percent.

Availability for flag down service is adequate, and is notably more effective than telephone prearrangement or hotel stand service on Friday and Saturday evenings.

Availability at SFO is higher than in 2000, even though the number of enplaned passengers has declined and BART has begun service to SFO since then.

Availability at hotel stands is adequate during the day but declines during the evening, on both weekdays and weekends.

Various indicators suggest that the demand for taxis in San Francisco is lower than it was in 2000, while the number of medallions issued remains at 1,381.

Altogether, the availability and demand indicators do not suggest that issuance of additional medallions would make an immediate improvement in taxi service, unless doing so would significantly improve the response rate to dispatch requests, particularly on Friday and Saturday evenings.

## BACKGROUND

The San Francisco Taxicab Commission was created through San Francisco Proposition D in 1998. Among its many duties, the Commission is responsible for regulating taxicabs and releasing a sufficient number of taxi medallions to assure adequate service throughout the City and County of San Francisco.<sup>1</sup> Currently, there are 1,381 medallions issued in San Francisco – 1,306 regular permits and 75 ramped taxicab permits (i.e. wheelchair accessible).<sup>2</sup> This number has been the same since 2000.

Field surveys are the primary means by which taxi availability is determined. The Taxi Commission conducted surveys in 1999, 2000, and 2001, but none have been conducted since 2001. A Commission hearing to determine Public Convenience and Necessity (PCN) for taxi medallions is scheduled to take place in early 2006. To inform the PCN determination, the Commission contracted with Q2 Research Group in September 2005 to conduct an up-to-date availability study. Data for the study were collected from October 17 through October 30, 2005.

The study measured taxi availability for each of four means of obtaining taxi service:

- 1) dispatch requests (telephone prearrangement), including a subsample of requests for ramp taxi service (special vehicles with a lift for customers with wheelchairs),
- 2) flag downs,
- 3) hotel taxi stands, and
- 4) airport staging lots.

The methods employed in the study were based on recommendations for measuring taxi availability made by consultant Bruce Schaller in a 2003 report to the Taxicab Commission.

According to Schaller, the primary question answered by availability studies is, “Are passengers adequately served?” To answer this question, he stated that the availability surveys should provide the following:

- 1) A complete picture of availability taking into account telephone prearrangement, taxi and airport stands and flag downs;

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<sup>1</sup> <http://taxi-reg.home.att.net/prop-k.htm>

<sup>2</sup> [http://www.sfgov.org/site/taxicommission\\_page.asp?id=17692](http://www.sfgov.org/site/taxicommission_page.asp?id=17692)

- 2) An accurate measurement of availability for each means of obtaining cab service; and
- 3) Standards for assessing whether a given level of availability is satisfactory (i.e., how long a wait time should be considered acceptable?).

Schaller's 2003 report included a methodological design for an availability study, including a telephone prearrangement (dispatch) survey, a flag down survey, and surveys of hotel stands and airport staging lots. His recommendations are the basis of the four components of this study, and are discussed in the following Methodology section of this report.

The Commission has set response time standards for telephone prearrangement of taxi service. They are as follows:

- 1) 70 percent of the time, taxicabs will arrive within 10 minutes of the service call;
- 2) 80 percent of the time, taxicabs will arrive within 15 minutes of the service call; and
- 3) 99 percent of the time, taxicabs will arrive within 30 minutes of the service call.

In addition, all cab companies operating ramped taxis must provide an average response time of 20 minutes.

This report describes the methodology and results of the four availability surveys and offers interpretation of their significance for PCN determination.

## METHODOLOGY

### Dispatch Survey

Schaller's key recommendations for the dispatch survey design included:

- 1) measuring availability using a sample size determined by the actual volume of dispatch requests by time of day and day of week, oversampling on Friday and Saturday evenings;
- 2) using equal sample sizes for each of 9 geographic regions recommended by the Commission; and
- 3) weighting the results to correct for geographic and time period oversampling.

In his report, Schaller determined sampling weights by reviewing the May 2003 dispatch data from the 2 highest volume cab companies. He looked at the volume of dispatch requests made during the following time periods: Sunday through Thursday from 6am to 6pm and 6pm to midnight; Friday through Saturday during the same time periods; and Friday and Saturday from midnight to 2am. In addition, he looked at the volume of calls made from each of the 9 geographic regions and calculated a poststratification weight to correct for disproportionate sampling from low-volume regions. The actual weights used for the data were derived from Schaller's weights and adjusted for the sample sizes obtained.

The dispatch survey was conducted between Monday, October 17 and Sunday, October 30. Street closures during the data collection period included 3rd St. in the Downtown/South of Market area, and a 49ers game on October 30. Neither of these closures likely presented a barrier to taxi service in regard to dispatch requests. Because the second weekend of data collection (Friday, Oct. 28Sunday, Oct. 30) immediately preceded Halloween, demand for taxi service during those evenings may have been higher than normal.

#### **Sample by Geographic Area**

Surveyors were scheduled to conduct an equal number of dispatch calls for each of the geographic regions, although due to scheduling constraints the final outcome of calls per region resulted in slight overrepresentations from regions A, B and D (Table 1).

**Table 1. Dispatch Calls Made by Region**

| Region       | Number of Calls Made | Percent     |
|--------------|----------------------|-------------|
| A            | 76                   | 12%         |
| B            | 84                   | 13%         |
| C            | 68                   | 11%         |
| D            | 72                   | 11%         |
| E            | 68                   | 11%         |
| F            | 68                   | 11%         |
| G            | 64                   | 10%         |
| H            | 68                   | 11%         |
| I            | 68                   | 11%         |
| <b>Total</b> | <b>636</b>           | <b>100%</b> |

#### **Sample by Time of Day and Day of Week**

Table 2 shows the number of dispatch calls made during each time period and on weekdays (Sunday through Thursday) and weekends (Friday and Saturday).

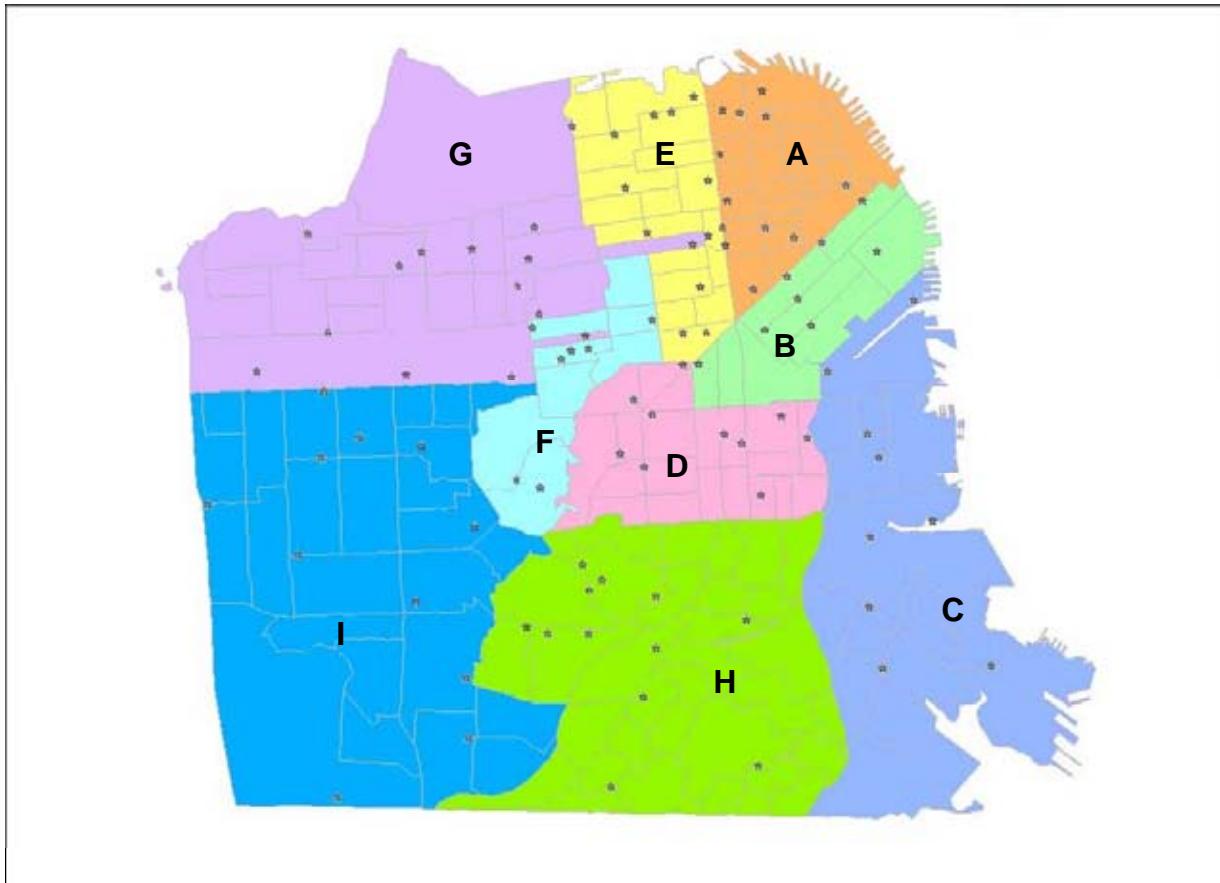
Oversampling was conducted during peak demand periods on Friday and Saturday nights. A total of 636 dispatch calls were made.

**Table 2. Number of Dispatch Calls Made by Time of Day and Day of Week**

|                   | Sun-Thurs  |              | Fri-Sat    |              | Total      |               |
|-------------------|------------|--------------|------------|--------------|------------|---------------|
|                   | Count      | Percent      | Count      | Percent      | Count      | Percent       |
| 6 to 8 am         | 32         | 5.0%         | 0          | 0.0%         | 32         | 5.0%          |
| 8 to 10 am        | 50         | 7.9%         | 8          | 1.3%         | 58         | 9.1%          |
| 10 am to 2 pm     | 49         | 7.7%         | 50         | 7.9%         | 99         | 15.6%         |
| 2 to 6 pm         | 74         | 11.6%        | 57         | 9.0%         | 131        | 20.6%         |
| 6 to 8 pm         | 49         | 7.7%         | 34         | 5.4%         | 83         | 13.1%         |
| 8 to 10 pm        | 71         | 11.2%        | 46         | 7.2%         | 117        | 18.4%         |
| 10 pm to midnight | 59         | 9.3%         | 32         | 5.0%         | 91         | 14.3%         |
| Midnight to 2 am  | 0          | 0.0%         | 25         | 3.9%         | 25         | 3.9%          |
| <b>Total</b>      | <b>384</b> | <b>60.4%</b> | <b>252</b> | <b>39.7%</b> | <b>636</b> | <b>100.0%</b> |

### **Selection of Locations**

Selection of sample locations for the dispatch survey was conducted using GIS (Geographic Information Systems) software and by examination of maps and data on the volume of requests within regions in the Schaller report. Depending upon its geographic size, 10 to 12 locations were selected for each region, including residential addresses, grocery stores, restaurants, and hospitals/medical centers (Figure 1).



**Figure 1. Locations of Dispatch Calls by Region**

#### Data Collection Procedures

One location was surveyed for each hour of each shift. Surveyors attempted 3 requests for taxis at each location, calling a different dispatch number for each request. Surveyors used a different alias at each location and used ID blocking to avert dispatcher recognition of repeated requests coming from the same person and phone number. During evening shifts, surveyors worked in pairs and took turns calling dispatchers. Data points recorded included:

- 1) taxi company,
- 2) time of first and second dialed attempts;
- 3) time taxi was dispatched (as time call to dispatcher was terminated),
- 4) no taxi available/no answer from dispatch,
- 5) time of arrival, and
- 6) taxi number.

At each location, interviewers waited for taxis until 30 minutes after the final taxi was dispatched. Any cabs not arriving by that time were recorded as no-shows. When a taxi arrived, the surveyor met the driver, explained that s/he was collecting data for a taxi availability study for the San Francisco Taxicab Commission, and offered the driver \$5 in compensation. The drivers provided receipts for the compensation.

#### **Ramp Vehicle Requests**

Ramp requests were scheduled as the first call on the list for each location, to allow for extra time beyond the 30-minute wait period allotted to regular requests.

### **Flag Down Survey**

A total of 42 locations were selected for the flag down survey. Locations were randomly distributed throughout the time periods, with the following exceptions: 1) Downtown/Financial District locations were not sampled late at night, and 2) South of Market clubs were not sampled in late morning.

#### **Selection of Locations**

The sample locations for the flag down survey were selected using GIS (Geographic Information Systems) software and recommendations made in the Schaller report. Locations were selected to ensure distribution throughout areas with heavy foot traffic. General areas included Fisherman's Wharf, North Beach, the Financial District/Embarcadero, Union Street, the Marina, the Geary Corridor, South of Market to SBC Park, the Mission, Downtown, West Portal, Laurel Heights, UCSF, and the Richmond District. Taxicab stands designated by the San Francisco Department of Parking and Traffic (DPT) were also included in the sample.

#### **Data Collection Procedures**

As in the dispatch survey, flag down shifts were scheduled throughout the day and evening to ensure representation of all time periods. The shift times were the same as those in the dispatch survey. However, Friday and Saturday evenings were not oversampled as in the dispatch survey, and weights were not used in the data analysis. A total of 300 flag down attempts were made (Table 3).

**Table 3. Number of Flag Down Attempts by Time of Day and Day of Week**

|                   | Sun-Thurs  |              | Fri-Sat    |              | Total      |               |
|-------------------|------------|--------------|------------|--------------|------------|---------------|
|                   | Count      | Percent      | Count      | Percent      | Count      | Percent       |
| 6 to 8 am         | 0          | 0.0%         | 4          | 1.3%         | 4          | 1.3%          |
| 8 to 10 am        | 27         | 9.0%         | 18         | 6.0%         | 45         | 15.0%         |
| 10 am to 2 pm     | 51         | 17.0%        | 43         | 14.3%        | 94         | 31.3%         |
| 2 to 6 pm         | 62         | 20.6%        | 30         | 10.0%        | 92         | 30.7%         |
| 6 to 8 pm         | 17         | 5.6%         | 3          | 1.0%         | 20         | 6.7%          |
| 8 to 10 pm        | 9          | 3.0%         | 5          | 1.7%         | 14         | 4.7%          |
| 10 pm to midnight | 3          | 1.0%         | 12         | 4.0%         | 15         | 5.0%          |
| Midnight to 2 am  | 0          | 0.0%         | 16         | 5.3%         | 16         | 5.3%          |
| <b>Total</b>      | <b>169</b> | <b>56.3%</b> | <b>131</b> | <b>43.7%</b> | <b>300</b> | <b>100.0%</b> |

Each shift allowed for one to two flag down attempts per hour. Surveyors simply arrived at the designated location, started a stopwatch, and began to hail cabs. The following points of data were recorded:

- 1) time attempt began,
- 2) number of vacant cabs not responding,
- 3) number of unlicensed vehicles responding, and
- 4) time attempt was satisfied.

If, after 25 minutes, no cab arrived, the attempt was considered unsuccessful and recorded as such. Surveyors were instructed to only consider cabs with their lights on as vacant, and not to attempt to flag down cabs without their top lights on. If the location was a cab stand, surveyors began the attempt upon arrival and waited in line until the attempt was satisfied or until 25 minutes elapsed.

### **Observation of Hotel Taxi Stands**

Availability at hotels was measured via observations of 12 designated hotel taxi stands (listed in Appendix A). The same shift times as in the dispatch and flag down surveys were used (Table 4). Surveyors recorded the following information at each hotel:

- 1) hotel name and location,
- 2) time of observation,
- 3) number of parties waiting for taxis,
- 4) number of taxis waiting for passengers, and

- 5) if parties and no taxis were waiting, the wait time for the first 3 parties.

**Table 4. Observations of Hotel Stands by Time of Day and Day of Week**

|                   | Sun-Thurs |              | Fri-Sat   |              | Total      |               |
|-------------------|-----------|--------------|-----------|--------------|------------|---------------|
|                   | Count     | Percent      | Count     | Percent      | Count      | Percent       |
| 6 to 8 am         | -         | -            | 12        | 10.0%        | 12         | 10.0%         |
| 8 am to noon      | 12        | 10.0%        | 12        | 10.0%        | 24         | 20.0%         |
| Noon to 6 pm      | 12        | 10.0%        | 12        | 10.0%        | 24         | 20.0%         |
| 6 to 10 pm        | 12        | 10.0%        | 12        | 10.0%        | 24         | 20.0%         |
| 10 pm to midnight | 12        | 10.0%        | 12        | 10.0%        | 24         | 20.0%         |
| Midnight to 2 am  | -         | -            | 12        | 10.0%        | 12         | 10.0%         |
| <b>Total</b>      | <b>48</b> | <b>40.0%</b> | <b>72</b> | <b>60.0%</b> | <b>120</b> | <b>100.0%</b> |

### **Survey of SFO Airport Taxi Staging Lots**

SFO Landside Operations conducted an hourly survey of airport staging lots during the 2-week study period, beginning at 7am and ending at midnight each day. The following points of data were collected each hour:

- 1) The number of taxis waiting in each staging lot (both domestic and international terminals)
- 2) The number of cabs exiting (checkouts) each terminal.

## **FINDINGS**

### **Dispatch Survey**

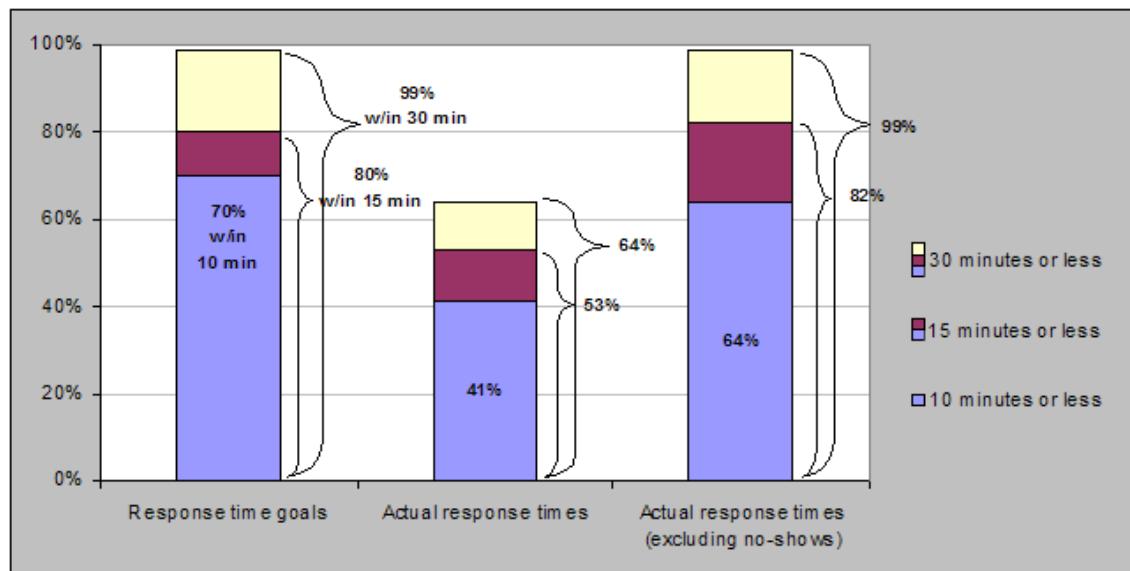
#### **Weighted Citywide Estimates**

Weighted by volume for time of day/day of week and by geographic area, the survey results indicate that 73 percent of attempts to obtain taxi service through telephone dispatch actually result in a cab being dispatched; in 27 percent of cases, the caller will not be able to connect with the dispatch company (because of no answer or a busy signal) or will be told that no cab is available. Of attempts in which a taxi is actually dispatched, the arrival rate is 65 percent.

For the dispatch requests in which a cab arrives, the average time from the beginning of a call attempt to the time a cab arrives is 11 minutes and 28 seconds. The average time between when the cab is dispatched and when it arrives is 9 minutes and 23 seconds, suggesting an average of 2 minutes and 5 seconds in time on hold, repeating call attempts, and/or making the actual request from the dispatcher.

An estimated 35 percent of all cabs dispatched will be no-shows. Forty-one percent will arrive in less than 10 minutes, 53 percent in less than 15 minutes, and 64 percent in less than 30 minutes. If only taxis that show up are considered,

most will arrive in 15 minutes or less (82 percent). Sixty-four percent will arrive in 10 minutes or less, and 99 percent within 30 minutes.



**Figure 2. Response Time Goals and Arrival Times of Dispatched Taxis, Citywide Estimates (n=463)**

#### Response to Dispatch Requests for Ramp Taxis

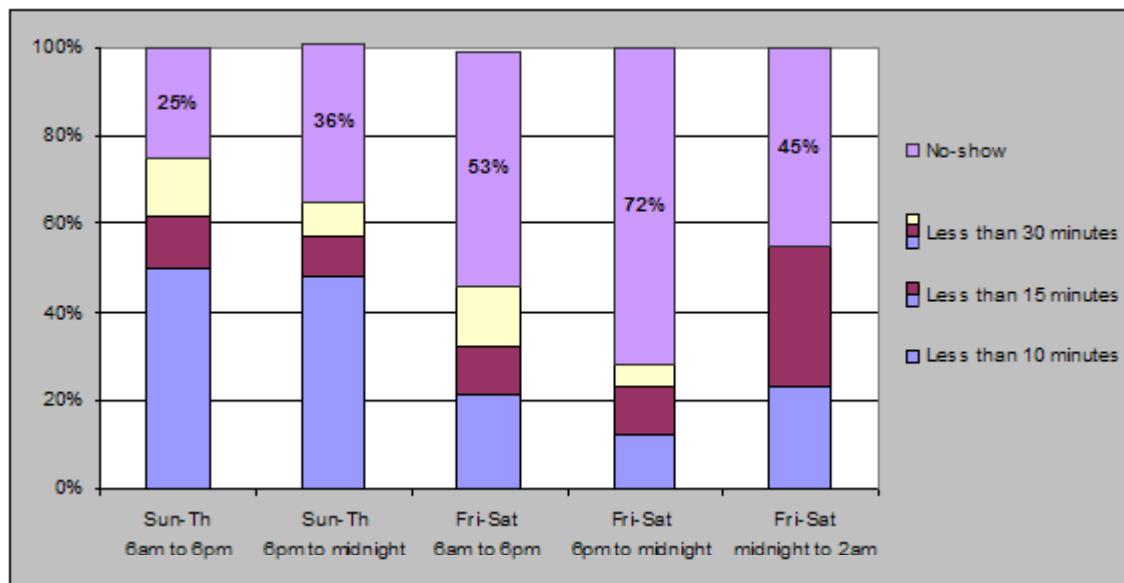
Requests for ramp vehicles ending in a dispatch are 6 times more likely than regular taxis to result in a no-show. Comparing the two types of requests, 37 percent of regular taxis and 65 percent of ramp vehicles dispatched resulted in no-shows. Callers requesting ramp vehicles were also more likely to be told that a cab was unavailable, although the small sample size of ramp requests does not yield a statistically significant result. Twenty-three percent of regular requests and 31 percent of ramp vehicle requests were not dispatched because the caller was not able to reach a dispatcher or was told that there were no vehicles available.

#### Response to Dispatch Requests by Time of Day and Day of Week

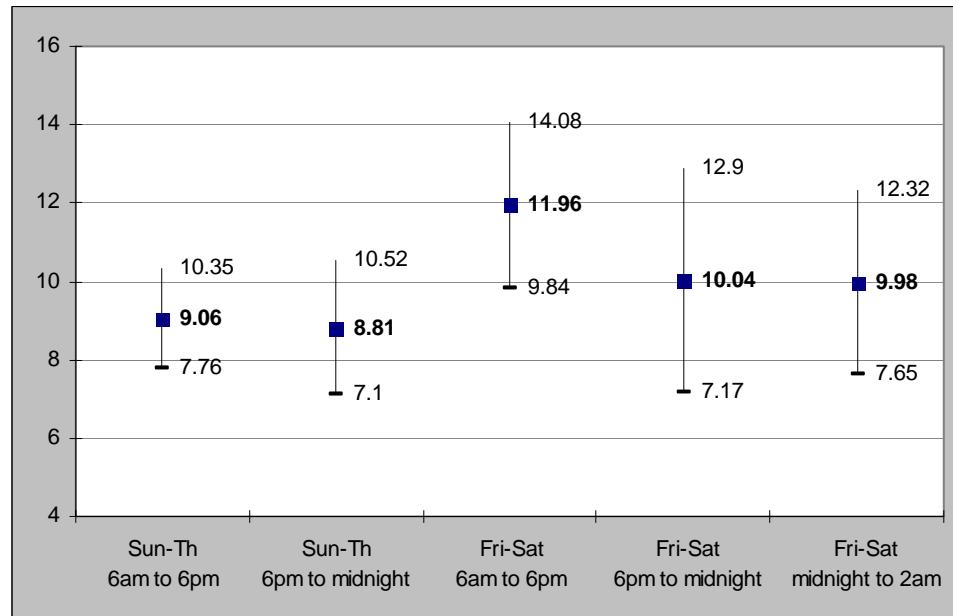
Not surprisingly, the results show that it is significantly less effective to obtain cab service via telephone prearrangement on Fridays and Saturdays, particularly during the evening from 6pm to midnight.

Figure 3 shows that attempts to obtain taxi service via telephone dispatch are most successful on Sunday through Thursday between 6am and 6pm. The fewest no-shows (25 percent) occur during this period, as well as the highest rate of taxis arriving in less than 10 minutes (50 percent). The second most successful time period is Sunday through Thursday evenings between 6pm and midnight, with 36 percent no-shows and 46 percent of calls resulting in a cab arriving in less than 10 minutes. On Friday and Saturday, both day and evening, the rate of no-shows increases significantly, and the cabs that do arrive have

longer arrival times. While the highest no-show rate occurs on Friday and Saturday evenings (72 percent), Figure 4 shows that the longest average arrival time occurs on Friday and Saturday between 6am and 6pm (11.96 minutes).



**Figure 3. No-Show Rates and Percent of Taxis Arriving Within Response Time Goals by Time of Day and Day of Week (n=636)**

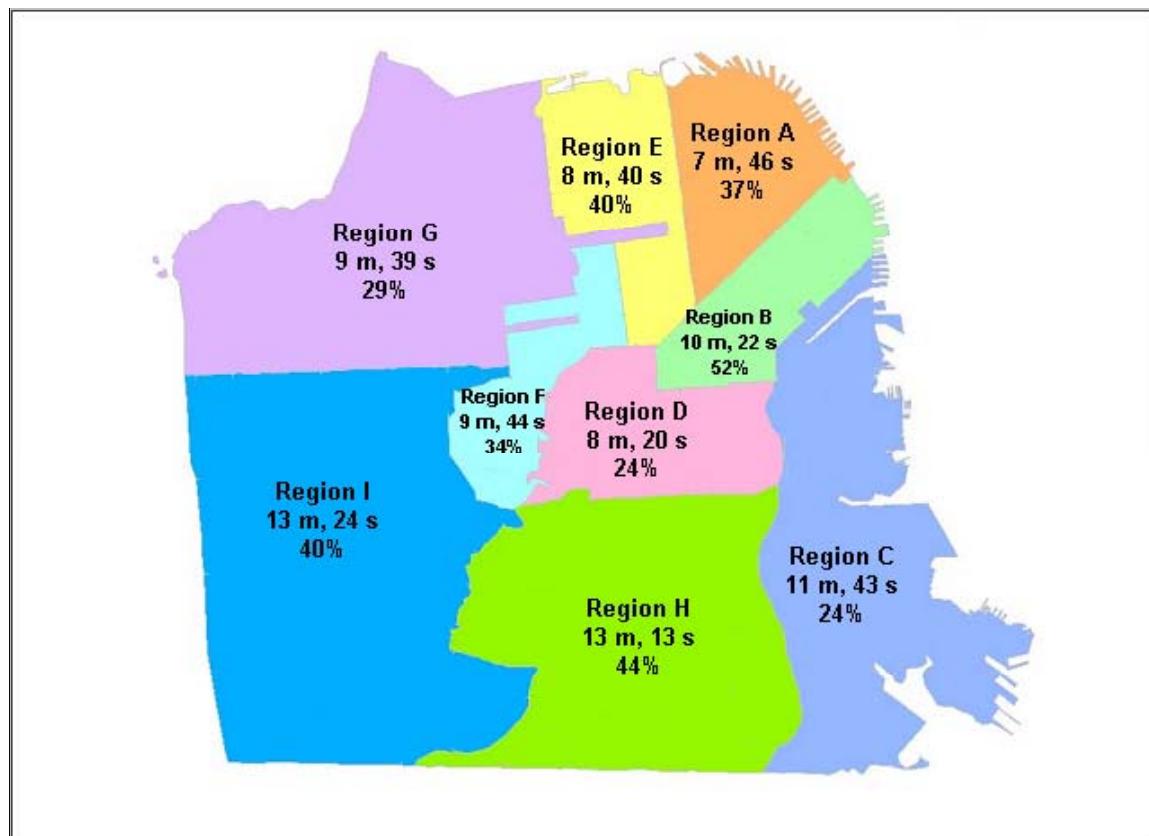


**Figure 4. Average Taxi Arrival Times with 95 Percent Confidence Interval by Time of Day and Day of Week**

### Taxi Response to Dispatch Requests by Geographic Area

The average time of arrival for taxis varied among central and outlying locations. Areas in the south and southeast (C, H and I) had the longest average arrival times, while Areas D and E had the shortest average times (Figure 5).

The rate of no-shows varied widely by region and may at least partially be explainable by reluctance to respond in certain areas because of accessibility. Area C, including Bayview/Hunter's Point, and D, including most of the Mission, both had the lowest rate of no-shows (24 percent each). Both are also easily accessible by freeway from downtown. Areas B, E and H and I had relatively high no-show rates (between 40 and 52 percent). Areas B and E may be affected by heavy traffic and prevalence of taxis available for flag down service, while Areas H and I may be considered too far to be worth the trip. Southeast areas, which are widely considered less safe than other areas of the city (areas C, D and H) did not have particularly high no-show rates, although the locations chosen purposely did not include blocks that are considered very unsafe. Such areas may indeed suffer from lack of taxi availability because drivers are reluctant to answer dispatch calls emanating from them.



**Figure 5. Average Arrival Time of Dispatched Taxis and Percent of No-Shows by Region**

## Flag Down Survey

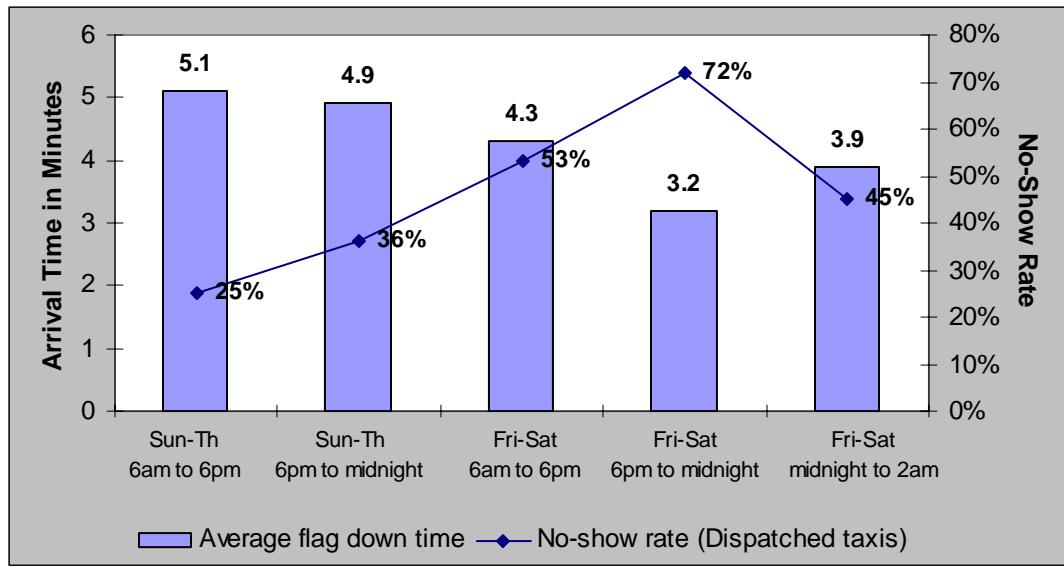
Ninety-five percent of flag down attempts in the study were successful (resulting in a taxi stopping). Including elapsed time from cabs that were waiting for fares at the selected locations, the average time for a successful flag down was 4 minutes, 37 seconds (4.6 minutes). Of all attempts, made, 63 percent resulted in a success in less than 5 minutes, and 80 percent in less than 10 minutes. Of successful attempts, two-thirds happened in less than 5 minutes, and most (84 percent) in less than 10 minutes.

**Table 5. Results of Attempts to Flag Taxicabs and Time in Minutes**

|                                | Count | Percent | (of successes) |
|--------------------------------|-------|---------|----------------|
|                                |       |         | Percent        |
| Unsuccessful attempt           | 16    | 5%      | -              |
| Cab waiting/Less than 1 minute | 64    | 21%     | 23%            |
| 1 to 1.9 minutes               | 45    | 15%     | 16%            |
| 2 to 4.9 minutes               | 79    | 26%     | 28%            |
| 5 to 9.9 minutes               | 50    | 17%     | 18%            |
| 10 to 14.9 minutes             | 33    | 11%     | 12%            |
| 15 to 19.9 minutes             | 6     | 2%      | 2%             |
| 20 minutes or more             | 7     | 2%      | 2%             |
| Total                          | 300   | 100%    | 100%           |

## Flag Down Results by Time of Day and Day of Week

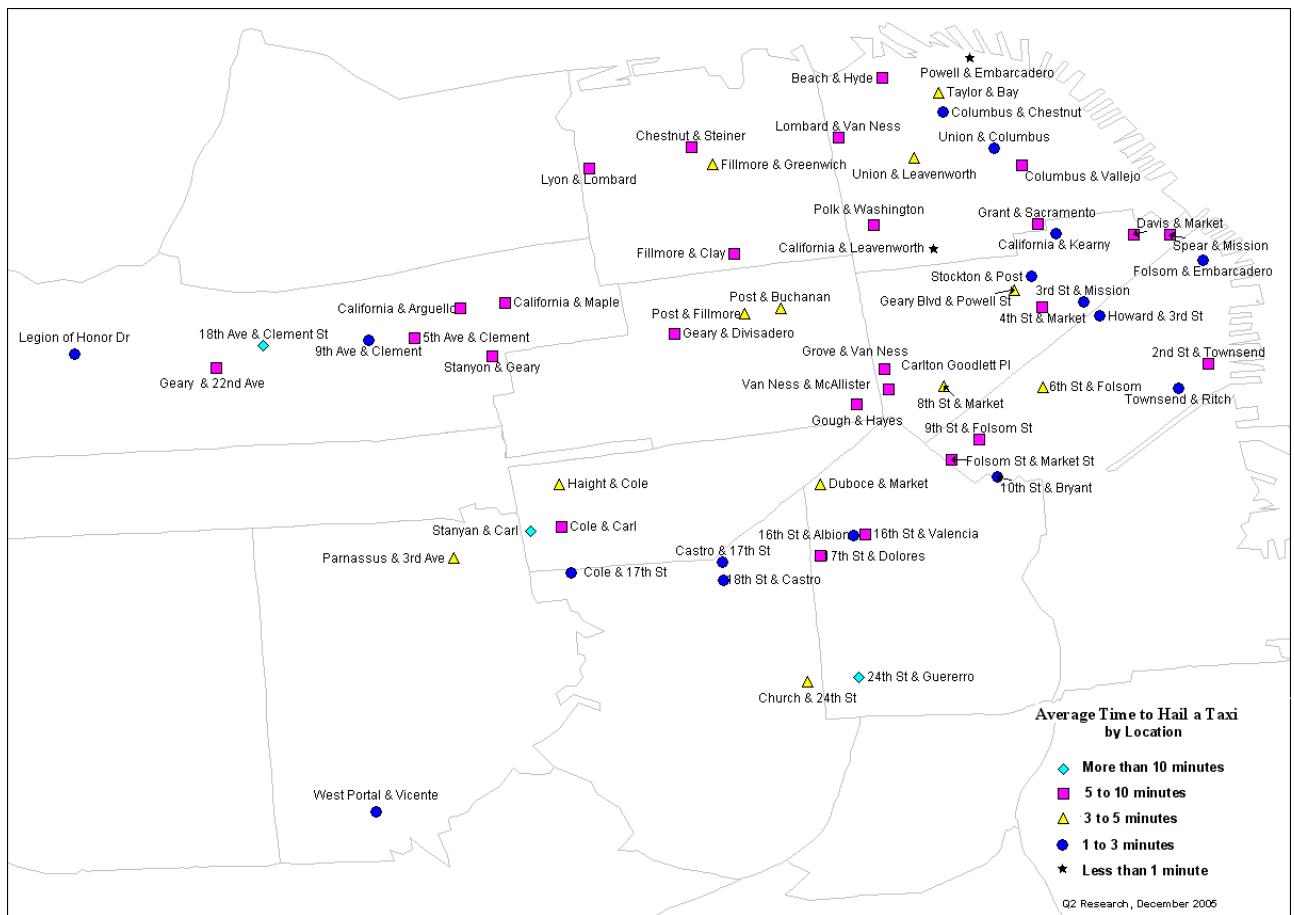
The results of flag down attempts, when shown by day of week and time of day, show that time periods when dispatch requests are least successful coincide with the shortest wait times for flag down attempts, with Friday and Saturday evenings between 6pm and midnight having the shortest average wait time and the highest rate of no-shows in response to dispatch requests. Conversely, Sunday through Thursday from 6am to 6pm, when dispatch calls are most likely to be answered and in the shortest arrival time, the average time for a successful flag down peaks (Figure 6).



**Figure 6. Average Wait Times for Flag Down Attempts and No-Show Rate for Dispatched Taxis by Time of Day and Day of Week**

#### Flag Down Results by Geographic Area

Because of its small sample size, the flag down survey is only intended to provide a citywide estimate of flag down availability. However, to assist in interpreting other data sources, it is useful to take a cursory look at flag down availability by area of the city. Downtown, Fisherman's Wharf/Pier 39, North Beach, the Castro, and South of Market result in faster average successes, whereas attempts in Civic Center, the Mission, the Richmond and Laurel Heights are slower on average. Figure 7 (next page) shows the locations of flag down attempts and the average time for a successful flag down by location.



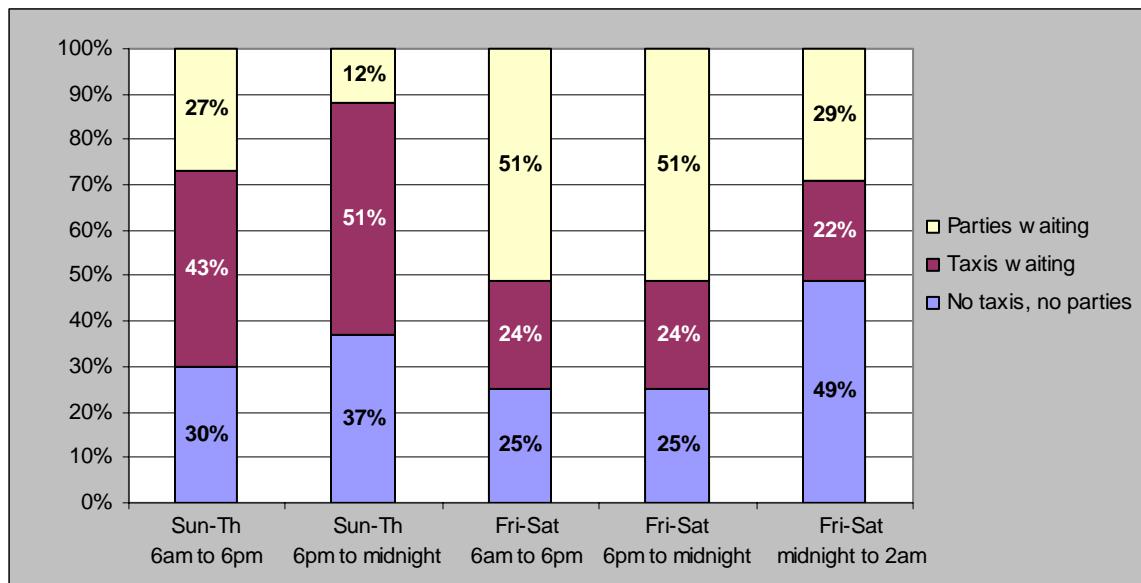
**Figure 7. Average Time of Successful Flag Downs by Location**

### Observation of Hotel Taxi Stands

Of all observations made at hotel stands, parties were waiting for cabs 40 percent of the time, cabs were waiting for parties in 25 percent, and no cabs and no parties were waiting in 35 percent. The number of parties waiting for cabs ranged from 1 to 4, with a mean of 2. The number of cabs waiting for fares ranged from 1 to 3, with a mean of 1.3.

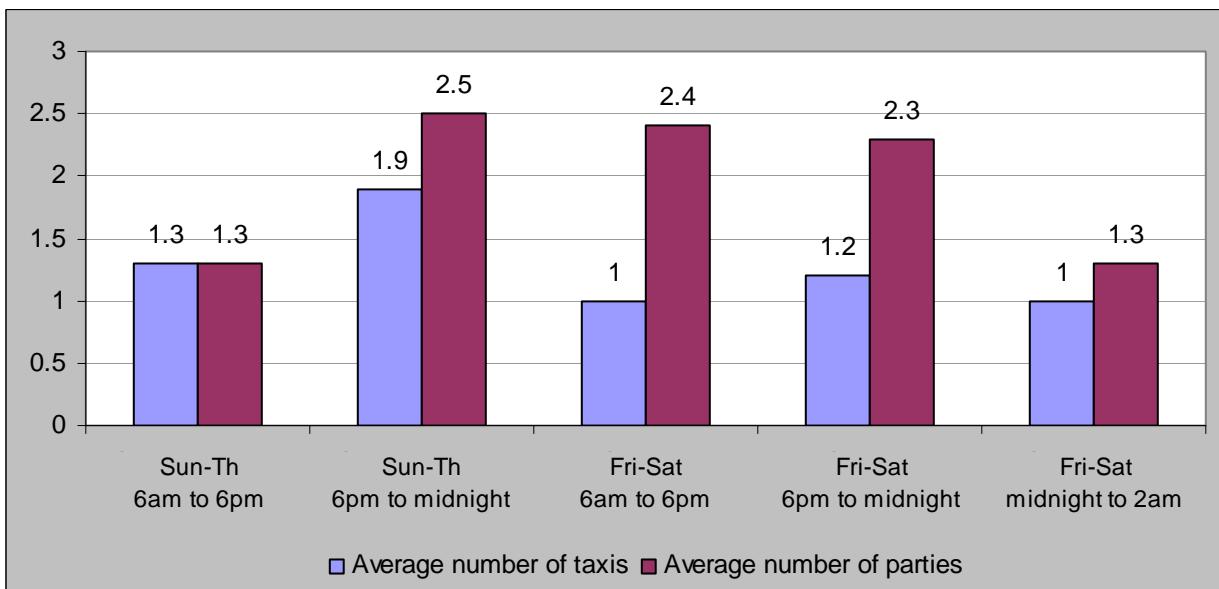
### Availability at Hotel Stands by Time of Day and Day of Week

Although the sample size is too small for comparisons by time of day and day of week to yield statistically significant results, the percentage differences illustrated in Figure 8 suggest that customers are more likely to find a cab waiting at their hotel on a Sunday through Thursday than on a Friday or Saturday, morning or evening. Customers are more likely to wait for a taxi on Friday and Saturday, day or evening. Demand and availability are at their lowest late at night (Figure 8).



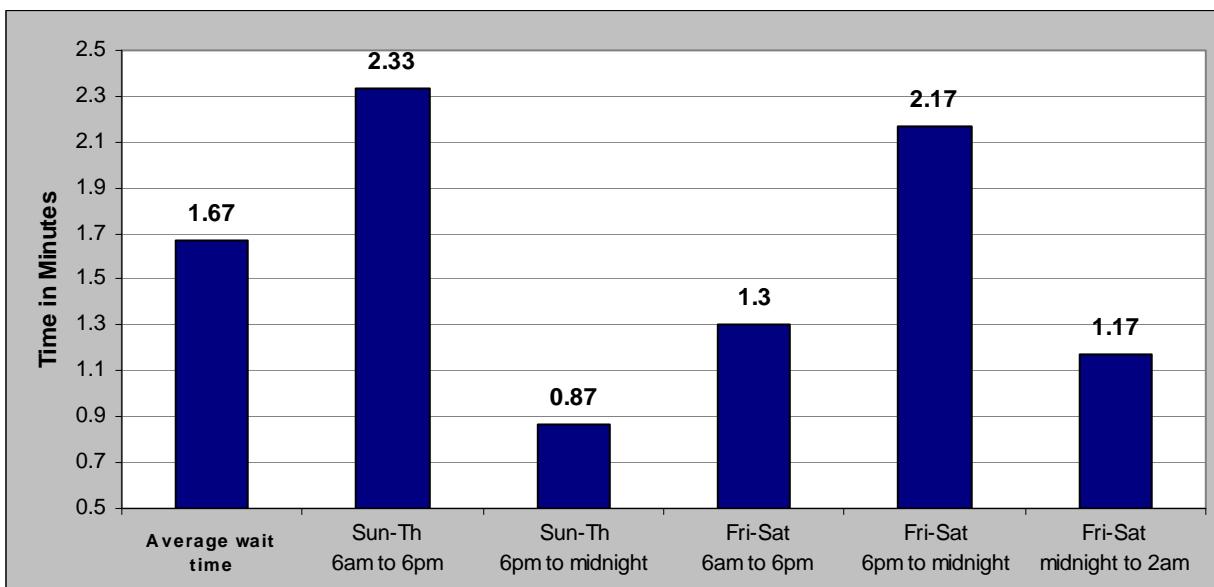
**Figure 8. Taxi Activity at Hotel Stands by Time of Day and Day of Week**

In cases when one or more taxis or parties was waiting at a hotel stand, the average number of parties usually exceeded the average number of taxis. The highest average number of parties was observed during the evenings and on Fridays and Saturdays, whereas the average number of taxis and parties were closer together on Sunday through Thursday during the day and late on Friday and Saturday evenings. The highest average number of taxis waiting was observed on Sunday through Thursday evenings.



**Figure 9. Average Number of Taxis and Parties Waiting at Hotel Stands When One or More Parties or Taxis Were Waiting, by Time of Day and Day of Week**

Of parties who had to wait for a taxi, the average wait time was 1 minute, 40 seconds. Average wait times varied widely by time of day and day of week, and that variability may be partly a function of small sample size. The longest wait times were observed on Sunday through Thursday during the day, and Friday and Saturday evening, both exceeding 2 minutes. Wait times recorded on Friday and Saturday during the day and Sunday through Thursday evening averaged closer to one minute.



**Figure 10. Average Wait Time for Taxis at Hotel Stands by Time of Day and Day of Week**

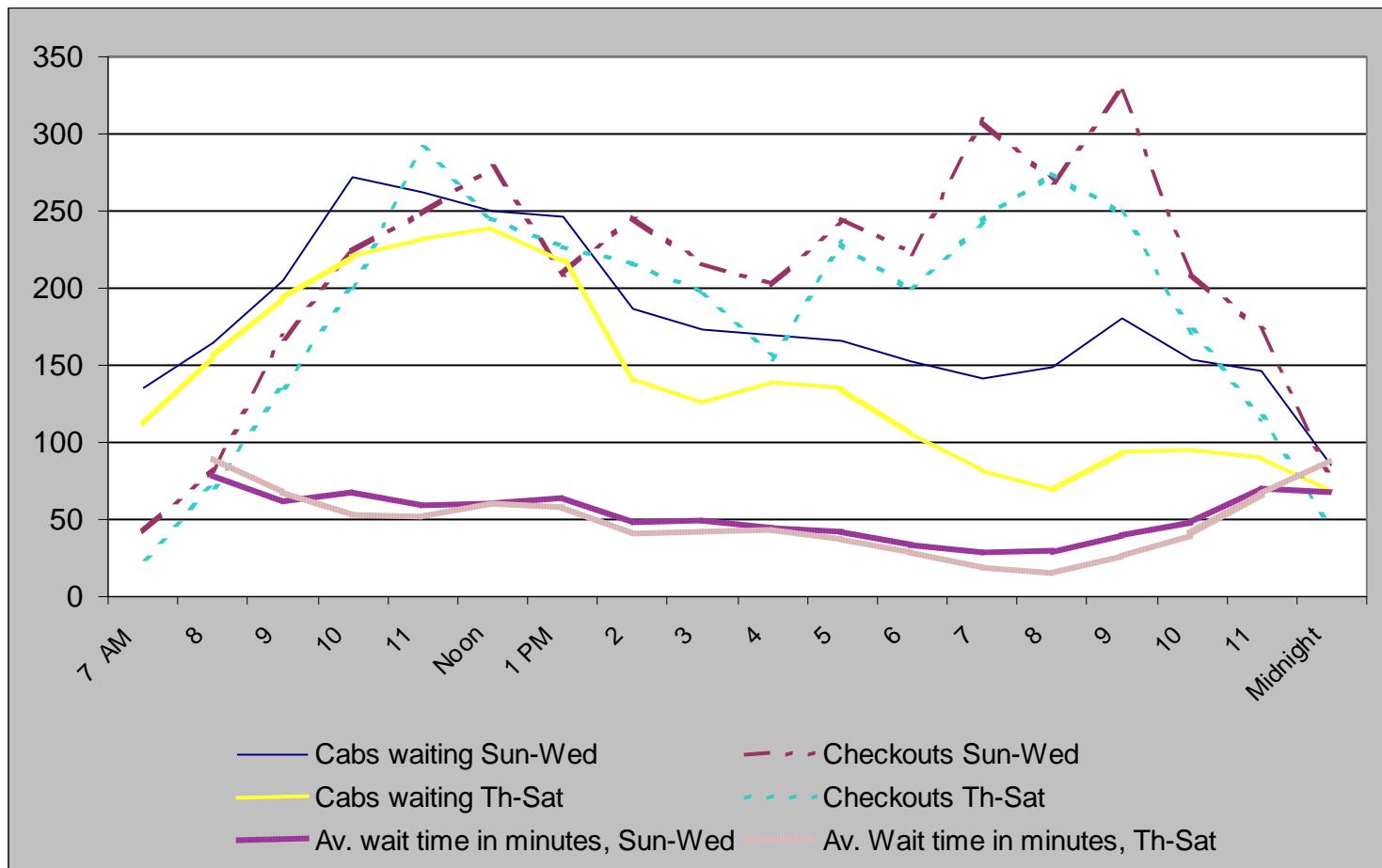
### Taxi Availability at SFO Airport Taxi Staging Lots

In 2005, the average number of cabs staged was 160, up from 107 in the airport survey conducted in 2000. The average number of exits per hour was 198, down from 216 in 2000, suggesting a longer average wait of 49 minutes compared to 30 minutes in 2000.

Using a moving average of the number of cabs waiting in a given hour divided by the number of cabs exiting in that hour and the hour immediately following, we can approximate the time that taxis waited in the staging lots before being dispatched to terminals to pick up fares. Figure 11 suggests that the wait time varies little by day of week but greatly by time of day. Taxis in the staging lots wait an average of 67 minutes in the morning (7am to noon), 52 minutes in the afternoon (noon to 5pm), 32 minutes in the evening peak hours (5pm to 9pm) and 50 minutes in the later evening (9pm to midnight).

Figure 11 indicates that the briskest arrival business at SFO takes place in the evening hours, with relatively few cabs waiting, the highest number of checkouts,

and shortest wait time. This suggests that there may be elevated “deadheading” during the evening hours, detracting from availability in the city. The high number of cabs waiting and checkouts during the morning hours suggests that cabs drop off passengers and then wait to take an arrival back into the city.



**Figure 11. Taxicabs Staged and Exiting Airport Lots and Average Wait Time by Time of Day and Day of Week**

### Factors Affecting Demand for Taxis

To augment the results of the availability surveys, it is helpful to examine trends in tourism and business activity in San Francisco that may affect demand for taxi service. In a December 2005 report on the taxi industry, the San Francisco Controller's Office examined several demand factors from 2000 through 2004, showing the annual compound growth rate in SFO enplaned passengers and occupied hotel room nights. This report provides updated data.

### **Enplaned Passengers at SFO**

The number of SFO enplaned passengers decreased sharply in 2001, with a low in 2003. The number increased by 5 percent in 2004, and the year-to-date increase between 2004 and 2005, as of October 2005, is 1.9 percent. Despite the increases over the past 2 years, however, the average compound growth rate between 2000 and 2005 is -4.6 percent.

**Table 6. SFO Enplaned Passengers and Annual Average Growth, 2000-2005**

|                                 | Compound average annual growth since 2000* |        |        |        |        |        |        | 2000 |
|---------------------------------|--|--------|--------|--------|--------|--------|--------|------|
|                                 | 2005**                                     | 2004   | 2003   | 2002   | 2001   | 2000   |        |      |
| SFO Enplaned Passengers (1000s) | -4.60%                                     | 15,973 | 15,396 | 14,615 | 15,546 | 19,319 | 20,159 |      |

\*Using year-to-date average for 2005

\*\*Estimated based on data through October

### **Hotel Occupancy**

Hotel occupancy in San Francisco rebounded in 2005, with an overall growth in occupied nights since 2000. Occupancy rates increased steadily between January and September 2005, the last month for which data are available, by an average of 4.3 percent. The growth in 2005 causes an annual average compound growth between 4.0 percent and 4.8 percent since 2000.

**Table 7. Occupied Hotel Room Nights and Annual Average Growth Rate, 2000-2005**

|                                    | Compound average annual growth since 2000 |           |       |       |       |       |       | 2000 |
|------------------------------------|---|-----------|-------|-------|-------|-------|-------|------|
|                                    | 2005*                                     | 2004      | 2003  | 2002  | 2001  | 2000  |       |      |
| Occupied Hotel Room Nights (1000s) | 4.0%-4.8%                                 | 7971-8315 | 6,383 | 5,904 | 5,574 | 5,543 | 6,549 |      |

\*The lower bound estimate of total occupied hotel nights in 2005 is estimated using only the year-to-date total occupied hotel nights, and the upper-bound estimate is calculated using the average month-to-month increase between January and September 2005. Compound average annual growth is calculated using both figures.

## **CONCLUSIONS**

**There is still a significant percentage of no-shows in response to dispatch requests, particularly on Friday and Saturday evenings and for paratransit requests.**

Currently, taxi service via telephone prearrangement does not meet the Commission's response time goals. Overall, there is only a 49 percent chance of any attempt to arrange service resulting in a cab arriving. When compared to availability via flag down or hotel stand by time of day and day of week, it appears that it more profitable for cab drivers to find customers via flag down or at SFO rather than respond to dispatch requests, particularly on Friday and Saturday evenings. The best dispatch service occurs on Sunday through

Thursday daytime, when hotel and flag down demand may not be as high. Perhaps issuing peak time only medallions would ameliorate the high no-show rates during those times.

Due to the small sample, the difference in the no-show rate and availability for paratransit requests compared to regular requests was not statistically significant. However, the large difference in the no-show rate does suggest that there is an availability problem with ramp taxi service in the city.

**Availability at SFO is higher than in 2000, even though the number of enplaned passengers has declined and BART has begun service to SFO since then.**

Average wait time and number of taxis at SFO were higher during the study period than in 2000, even though the annual number of SFO enplaned passengers was an estimated 20 percent fewer in 2005 than in 2000, and BART now provides service to SFO. This suggests that an average of 11.6 percent of the city's cabs are at SFO at any given time.

**Availability for flag down service is sufficient, and is notably more effective than telephone prearrangement or hotel stand service on Friday and Saturday evenings.**

Ninety-five percent of the flag down attempts in this study were successful, day and night. Availability of taxis for flag down is at its peak on Friday and Saturday nights, at the same time that dispatch and hotel stand availability are at their lowest.

Although there are numerous reports of limousines and other unlicensed vehicles picking up fares, vehicles without medallions were observed in only 2 of 300 of this study's flag down attempts (less than 1 percent).

**Availability at hotel stands is adequate during the day but declines during the evening, on both weekdays and weekends.**

There is only a 25 percent chance that a taxi will be waiting as customers exit their hotels, whereas parties are waiting 40 percent of the time. However, the average wait time is less than 2 minutes, and the lower availability at hotel stands during the evening may be offset by the high chance of obtaining taxi service via flag down, since most hotels are located in heavy foot traffic areas.

**Availability via telephone prearrangement appears to have improved since 2000.**

According to previous dispatch surveys conducted by the Police Department's Taxi Detail, the chance of successfully telephoning for a taxi declined from 51 percent in 1997 to 40 percent in 2000. The current chance is 49 percent (including attempts for which no cab is available or the caller is unable to reach a dispatcher). Because of small sample sizes used in the previous studies and differences in methodology (including location sampling, weighting, and time schedule), direct comparison of the survey results should be made with caution. However, these trends make sense when trends in demand are considered.

**Various indicators suggest that the demand for taxis in San Francisco is lower than it was in 2000, while the number of medallions issued remains at 1,381.**

According to the American Community Survey, the adult population in San Francisco has decreased by 4.7 percent. The number of enplaned passengers at SFO is significantly lower than in 2000. The recent report issued by the San Francisco Office of the Controller estimated that demand has not reached 2000 levels as of 2004. However, the increase in occupied hotel room nights does suggest a rebound in the tourism industry. Altogether, the availability and demand indicators do not suggest that issuance of additional medallions would make an immediate improvement in taxi service, unless doing so would significantly improve the response rate to dispatch requests, particularly on Friday and Saturday evenings.

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## Appendix A. List of Hotels Observed

| Hotel Name                                    | Address                |
|---|------------------------|
| Holiday Inn Fisherman's Wharf                 | 1300 Columbus Ave      |
| Hyatt Regency San Francisco                   | 5 Embarcadero Center   |
| Argent Hotel                                  | 50 Third Street        |
| The Sir Francis Drake                         | 450 Powell Street      |
| Grand Hyatt San Francisco                     | 345 Stockton Street    |
| San Francisco Marriott                        | 55 Fourth Street       |
| Heritage Marina Hotel - formerly Vagabond Inn | 2550 Van Ness Ave      |
| Hotel Triton                                  | 342 Grant Ave          |
| Miyako (Sutter)                               | 1800 Sutter Street     |
| Donatello                                     | 501 Post Street        |
| Comfort Inn by the Bay                        | 2775 Van Ness Ave      |
| Parc 55                                       | 55 Cyril Magnin Street |