

## Operational Taxi Data

### About This Reference Sheet

This Reference Sheet is for taxi companies in BC that:

- (a) are [applying to add vehicles to their fleet](#); or
- (b) will apply in the future.

The Reference Sheet covers the following subjects:

- A. Applicant Requirements to Report Operational Taxi Data
- B. Using Board Spreadsheets
- C. Creating Supplemental Spreadsheets and Data Reports
- D. Company Responsibilities for Collecting and Retaining Data
- E. Confidentiality, Disclosure and Publication of Data

This Reference Sheet is organized for taxi companies that are familiar with Board application processes. However, you may want to start with sections D and E if your company is applying for additional taxis for the first time, changing its dispatch system or improving the way it collects or retains data.

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## A. Applicant Requirements to Report Operational Taxi Data

### *Required Evidence of Public Need*

Applicants must include evidence of public need for additional taxis. Applicants in areas with a population of 10,000 or more, complete [Board taxi data spreadsheets](#). The Board gives predominant weight to information in the spreadsheets when it reviews applications. See [Application Guide 3: I want to add more taxis to my fleet](#) information about other public need indicators.

### *Contents of Taxi Data Spreadsheets*

The [Board taxi data spreadsheets](#) is a package of 4 spreadsheets in one Excel workbook:

- Spreadsheet A: “Applicant’s Info”
- Spreadsheet B: “Regular Tax Data Sheets”
- Spreadsheet C: “WAT Data Sheets”
- Spreadsheet D: “Data Dashboard”

Figure 1 shows the workbook tabs for accessing each spreadsheet.

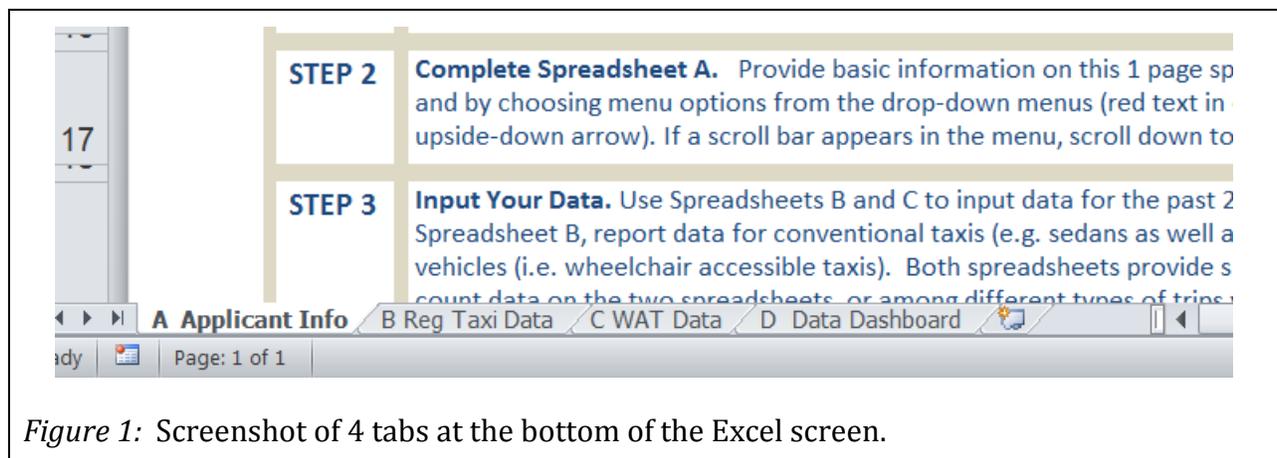


Figure 1: Screenshot of 4 tabs at the bottom of the Excel screen.

### *Information That Must Be Reported in the Spreadsheets*

Applicants must report at least 24 months of data for all conventional and wheelchair accessible vehicles in their fleet. The remainder of this section summarizes what an applicant must do to meet this minimum requirement.

## Describe the Data (Spreadsheet A)

Answer the questions on Spreadsheet A, “Applicant’s Info,” about the data being reported and company performance targets.

## Input Data for Spreadsheets B & C

Report data for sedans or non-accessible taxis on the first two pages of Spreadsheet B, “Regular Tax Data Sheets.”

Report data for all wheelchair accessible taxis on the first two pages of Spreadsheet C, “WAT Data Sheets.”

Ensure that data you report represents your full fleet without double-counting. Required data includes:

- trip volumes,
- averages number of vehicles on shift each day, and
- response times for dispatch trips (not required from applicants that do not use a computerized or cloud-based dispatch system)

## Spreadsheet Calculations

As you input your data, the spreadsheets calculate totals, averages and year-over-year changes for your operation and its components. They give the Board a basis for understanding what has been happening in your business. Before submitting the spreadsheets, review all sections to ensure that they reflect your taxi operation.

## Raw Data Sample

Submit a sample raw data for one month that you used to generate monthly total or averages you reported for trip volumes, vehicles-on-shift, and response times. Keep all raw data in case the Board requests it later.

## Electronic Submission

When you submit your application to the [Passenger Transportation Branch](#) in Coquitlam, include an electronic copy of your Excel file (e.g. by email or USB stick).

## Other Related Information and Supplemental Data

Applicants are responsible for determining the quantity, quality and types of public need evidence they put in their application. Applicants may exceed minimum requirements with the following:

- Qualitative indicators such as letters or petitions from taxi users (see [Application Guide 3](#))
- Supplemental spreadsheets or custom data reports (see Section C below)
- More explanations about your data, how to interpret it, and the link between your data and the number of taxis you seek.

## B. Using Board Spreadsheets

This section complements instructions in Spreadsheet A. Here, more information is provided about issues you may face as you add information to Spreadsheet A and input data on the first two pages of Spreadsheets B and C.

### *Add Information to Spreadsheet A*

To complete Spreadsheet A, do the following:

- Overtyping black text in red boxes to identify your company name, the date of your report, and maximum fleet size information in your PT Licence.
- Use the first two drop-down menus to indicate your company's performance standard. See Figure 2 below.
- Select an option from all the remaining 6 drop-down menus to describe your data. Use them to:
  - Identify the event when your dispatch system **starts** and **stops** measuring response times
  - Identify the system you use to dispatch taxis
  - Disclose any changes made in dispatch systems while collecting data you reported in your spreadsheets
  - Clarify whether your spreadsheet reports data for all or some of the taxi trips you provided
  - Disclose whether you changed any formulas in the taxi data spreadsheets.

- In the white box under the “Dispatch System” heading, list other dispatch apps and technologies that are used by your company or drivers and describe how you are giving this information to the Board.

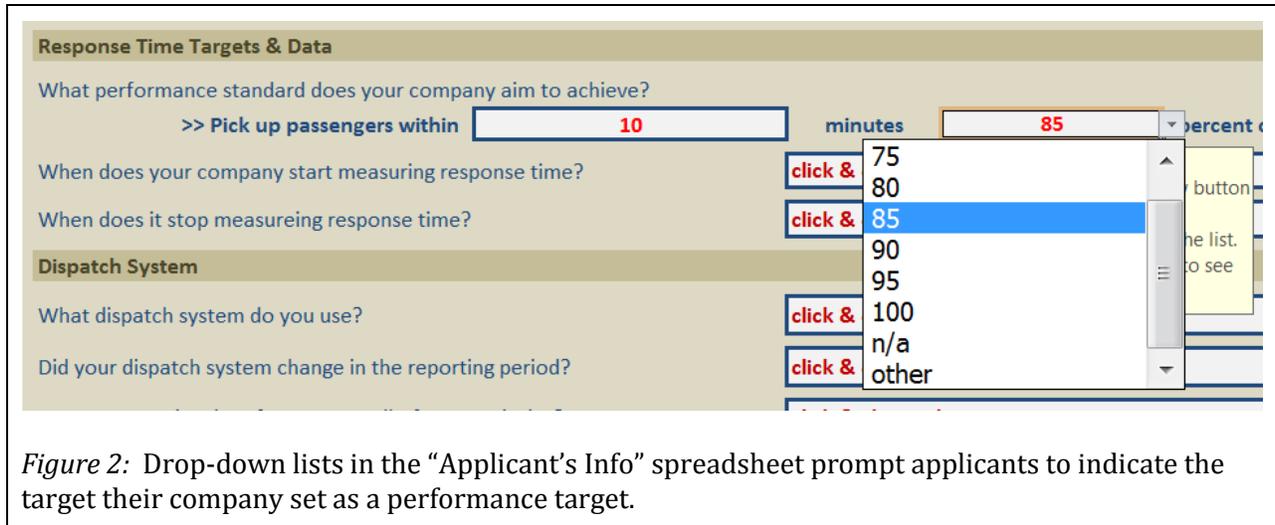


Figure 2: Drop-down lists in the “Applicant’s Info” spreadsheet prompt applicants to indicate the target their company set as a performance target.

In your application materials, note any steps you have taken to meet your response time target. See Appendix A for more detail about targets and reporting actual performance.

### ***Add Data to Spreadsheet B—for Conventional Taxis***

On sheets B1 and B2, input your data for sedans and all other taxis in your fleet that are not wheelchair accessible. Input at least 24 months of data. The spreadsheet provides space for up to 48 months. Input the following data for each month:

- Total trip volumes
- Average number of vehicles on shift per day
- Average response times for dispatch trips

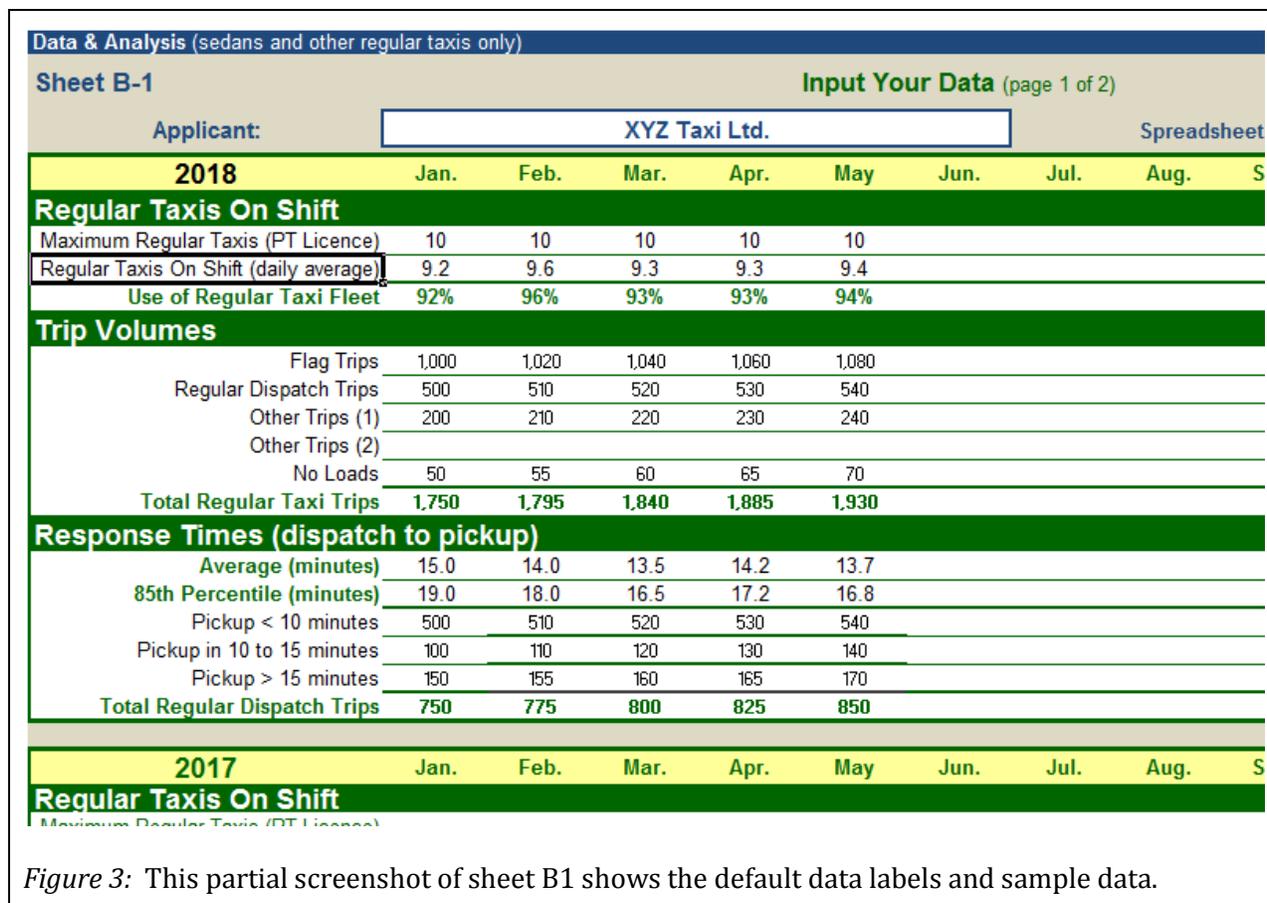
On the next page, Figure 3 shows sheet B1 with sample data for five months in 2018.

### ***Adjust Data Labels to Fit Your Data***

Sheet B1 lets you overwrite the year (e.g. 2018) and some data labels (e.g. “Flag Trips”). As needed, change the labels so they describe the dates and types of data you report.

As an example, the generic “Other Trips 1” label can be changed to “Airport Trips.”

Changing a label on sheet B1 changes the label in many cells in the workbook. Keep any



data labels you create descriptive and short. This ensures that data is understood and the new label fits in other cells. When you move the date ahead (e.g. from 2018 to 2019), the spreadsheet moves all date labels ahead in the workbook.

You can overwrite any number or text in the workbook that has black text. In Figure 3 above, some labels and data are black and some are green, dark blue or white. When you change a label or date in a cell, the workbook automatically updates the content in others.

### *Your Monthly Data*

#### Trips Volume Data

Trip Volume data includes:

- Completed or serviced trips
- No load trips that end without a passenger

The spreadsheets use the *no loads* label to include no shows and cancellations after a taxi is dispatched. Report no loads data as a line item with your trip volume data because fleet resources have been used that otherwise could be used to provide passenger transportation.

### Vehicles ‘On Shift’ Data

Input monthly vehicles-on-shift data by reporting the average number of vehicles per day that were operated for a shift. Vehicles that were operated for a brief time on one day should be excluded from your vehicles-on-shift data. If your system sets a minimum time for a vehicle to be counted as *on shift*, put it in the notes box at the bottom of Spreadsheet A.

### Inputting Response Time Data

From your dispatch system, get data for the number of minutes for it took for taxis to pick up a passenger after the dispatch request. In the spreadsheets, report the number of trips for each month that fell into three bands for response times (e.g. pickups in <10 minutes, 10-15 minutes, > 15 minutes).

Other *Response Time* matters:

- Spreadsheet A asks you to declare the points in the passenger pickup process when the dispatch starts and stops its measurement of response times.
- Understand how your dispatch system tracks advance bookings and the impact on your response time data—if the system skews response time data in a way that cannot be fixed, disclose the issue on Spreadsheet A.
- If you do not have a computerized or cloud-based dispatch system, response time data is not required.

Appendix A (“Measuring Response Time Performance”) provides guidance on response time targets and reporting performance.

### ***Add Data to Spreadsheet C—for WATs***

On sheets C-1 and C-2, add data for the wheelchair accessible taxis in your fleet. Data labels you used in Spreadsheet B will be the same in Spreadsheet C. Input the same types of data

for the same period as Spreadsheet B, but only input data for wheelchair accessible vehicles in your fleet. Spreadsheets B and C provide data for all taxis in your fleet.

The content and layout of Spreadsheets B and C are similar, although Spreadsheet C has additional lines for *wheelchair user* trips. *A wheelchair user is a person with a wheelchair who uses wheelchair accessible taxis.* Spreadsheet C has a unique colour scheme and markings to indicate that data is exclusively for wheelchair accessible taxis.

### ***Spreadsheet Auto-Fill & Analysis***

As you add data to the spreadsheets, other cells and tables in the workbook will fill in automatically. On some rows, totals or averages auto-fill after you input 12 months of data for that calendar year.

You should review the auto-fill tables that are located in:

- Spreadsheet B (sheets B3 to B11)
- Spreadsheet C (sheets C3 to C11)
- Spreadsheet D (sheets D1 to D3)

The auto-fill tables:

- consolidate and compare monthly totals for each type of trip with a conventional taxi (e.g. “flag trip” table on sheet B3)
- convert monthly numbers to percentages to show year-over-year changes (e.g. “Use of WAT Fleet” table on sheet C7).
- provide overall summaries (e.g. the 3-page “Data Dashboard” in Spreadsheet D) and a breakdown for one aspect of your taxi operation (e.g. “flag trip volumes”).

### ***Weighting Monthly Data***

The spreadsheets give a 1/12<sup>th</sup> weight for each month in calculations for a calendar year. This enables comparisons when some data is reported for part of the year. The spreadsheets only compare data for the same month (e.g. March 2017 and March 2018) to avoid distortions caused by seasonal changes in the taxi business.

Figure 4 (on the next page) uses sample data to show the monthly, annual and overall changes in trip volumes for wheelchair accessible taxis. It illustrates how weighted

calculations are made with 35 months of data that span two full calendar years and two other partial years.

| Total WAT Trip Volumes        |       |       |       |                         |       |       |       |       |       |        |       |       |         |           |                             |  |       |  |
|-------------------------------|-------|-------|-------|-------------------------|-------|-------|-------|-------|-------|--------|-------|-------|---------|-----------|-----------------------------|--|-------|--|
| Monthly and Yearly Trips      |       |       |       |                         |       |       |       |       |       |        |       |       |         |           |                             |  |       |  |
| WAT Trip Volumes              | Jan.  | Feb.  | Mar.  | Apr.                    | May   | Jun.  | Jul.  | Aug.  | Sep.  | Oct.   | Nov.  | Dec.  | Totals  |           |                             |  |       |  |
| 2018                          | 1,970 | 2,015 | 2,060 | 2,105                   | 2,150 |       |       |       |       |        |       |       |         |           |                             |  |       |  |
| 2017                          | 1,615 | 1,660 | 1,705 | 1,750                   | 1,795 | 1,840 | 1,885 | 1,930 | 1,975 | 2,020  | 2,065 | 2,110 | 22,350  |           |                             |  |       |  |
| 2016                          | 1,425 | 1,470 | 1,515 | 1,560                   | 1,605 | 1,650 | 1,695 | 1,740 | 1,785 | 1,830  | 1,875 | 1,920 | 20,070  |           |                             |  |       |  |
| 2015                          |       |       |       |                         |       |       | 1,325 | 1,370 | 1,415 | 1,460  | 1,505 | 1,550 |         |           |                             |  |       |  |
| Year-over-Year Volume Changes |       |       |       |                         |       |       |       |       |       |        |       |       |         |           |                             |  |       |  |
| WAT Trip Volume Changes       | Jan.  | Feb.  | Mar.  | Apr.                    | May   | Jun.  | Jul.  | Aug.  | Sep.  | Oct.   | Nov.  | Dec.  | Change* | *weighted |                             |  |       |  |
| 2017 to 2018                  | 22%   | 21%   | 21%   | 20%                     | 20%   |       |       |       |       |        |       |       |         | 8.7%      |                             |  |       |  |
| 2016 to 2017                  | 13%   | 13%   | 13%   | 12%                     | 12%   | 12%   | 11%   | 11%   | 11%   | 10%    | 10%   | 10%   |         | 11.5%     |                             |  |       |  |
| 2015 to 2016                  |       |       |       |                         |       |       | 28%   | 27%   | 26%   | 25%    | 25%   | 24%   |         | 12.9%     |                             |  |       |  |
| Months of Data:               | 35    |       |       | Same-Month Comparisons: |       |       | 23    |       |       | Trips: |       |       | 61,345  |           | Overall Trip Volume Change: |  | 33.1% |  |

Figure 4: This “Total WAT Trip Volumes” table fills in automatically on sheet C5. In this example, data for 35 months is used to make 23 same-month comparisons—each monthly comparison with a weighting of 1/12— to calculate the overall, annualized change in trip volume (33.1% in this example).

### Viewing Formulas in Spreadsheet Cells

Spreadsheets are protected to prevent inadvertent changes to formulas embedded in the cells. You can view formulas but you should not change them. If you made a change, you must disclose it on Spreadsheet A.

To view formulas in a cell, you must first *unprotect* the spreadsheet. Click the following: Home > Format > Protection > Unprotect Sheet. Spreadsheets are not password protected. If you are prompted for a password, leave the *password field* empty.

## C. Creating Supplemental Spreadsheets and Data Reports

Applicants may submit additional spreadsheets or reports. This section describes some reports that applicants may include with their application.

### General Guidance on Customizing Data Reports

As you design a customized report, consider presenting data in a way that gives the Board a big-picture overview of the operation, an understanding of key components, and an

understanding of changes over a time period relevant to your application. Also, explain the purpose of the report and its relevance to your application.

### ***Trips Per Vehicle Report***

An applicant could combine statistics in the Trip Volume and Vehicles On Shift spreadsheets to calculate *average trips per vehicle per hour*. This type of report may be used to indicate fleet usage and productivity.

### ***Driver Sign On Report***

A Driver Sign On report can show the hours that drivers are signed into the dispatch system in a day or month. It can show changes in fleet usage (average hours per day) to supplement a Vehicles On Shift report (average number of vehicles per day). A Driver Sign On report may help identify time periods when your taxi fleet is operating at full capacity. Comparing this data for different years may show changes in fleet usage and the duration of periods when requests exceed the number of drivers and vehicles available.

If you produce this type of report, tell the Board whether all drivers are required to sign on to the dispatch system when they are working. If you do not, the Board cannot assess the usability of a Driver Sign On report.

### ***On Time Report for Pre-Booked Trips***

Pre-booked trips usually represent a small portion of taxi trips. However, a company can monitor its on-time performance with a report designed specifically for pre-booked trips. If a customer pre-books a pickup for 10:00 am, the taxi should arrive at 10:00 a.m. or earlier. This would register a 0 second delay and indicate excellent on-time performance. A 5-minute delay may be considered poor for a pre-booked trip, but good for a dispatched trip.

An on-time report will be affected by whether your dispatch system records “arrival” events. If arrival time is not recorded, the “meter on” event is used. The use of “meter on” events is less than ideal as an indicator of on-time performance. This is because the “meter

on” event includes the time it takes passengers to enter the taxi. If you produce this type of report, disclose the event that the dispatch system uses to mark the taxi’s arrival.

### ***Fare Revenue Reports***

Generally, the Board does not view taxi fare revenue reports as public need indicators. This is because revenues that taxi licensees receive are commonly based on flat fees for leases or dispatch services, or only a portion of fare revenues (e.g. debit and credit card receipts only). Applicants who want the Board to consider fare revenue as a public need indicator need to describe how the fare revenue information was gathered and how it indicates public need.

### ***Call Taker and Phone Data Report***

Call taker reports show the number of calls that are received or dropped during defined periods (e.g. one hour bands, or for core periods of a shift). They are not the same as trip volumes and may include duplicate call backs as well as administrative calls that are unrelated to requests for taxis.

Despite the noted limitations, a spike in caller wait times at a particular time of the day may help identify periods when company resources cannot handle the requests for taxicabs. Potentially, an hour-by-hour comparison of call-taker statistics and trip volume statistics could identify the duration and frequency of periods when taxicab use is maximized.

## **D. Company Responsibility for Collecting and Retaining Data**

Mostly, dispatch systems are used to connect drivers and passengers. They are well-tuned to this immediate purpose. Many dispatch systems are not designed to store performance data for more than 3, 6 or 12 months. They were not designed to track all the types of data that are relevant in an application for more taxis. If your company expects to make a taxi application in the future, you may need to take immediate steps to optimize the data you collect and ensure it is being retained for two or more years.

Data-reporting requirements apply to companies that serve a population of 10,000 or more. We encourage companies in smaller communities to use newer technologies so you have more data about your operations for management and application purposes.

When the Board receives an application for addition taxis, it gives predominant weight to data provided with its spreadsheets.

Use Section D as a guide for proactive steps you can take to check or optimize your company's data collection and storage.

### *Use of Data Collected Manually*

Most taxis in BC are connected to a company's central dispatch system that automatically collects taxi data. Some smaller operators are not. These operators may be in smaller communities or larger cities.

Whether data is collected automatically or manually, the same principles apply. Applicants are expected to describe how data is collected, provide samples of original data, and report the data in an understandable, usable way. The Board needs enough information about the data and its collection to assess its reliability.

Companies that intend to expand their operation are responsible for establishing a system that collects and stores data required for an additional vehicles application.

### *Checking & Optimizing Data Systems*

Do the following to optimize your dispatch system for data collection:

- Configure dispatch system attributes so you are measuring the most important segments of your operation (see Table 1 on the next page)
- Set up a cost-efficient way to access monthly summaries of data over multiple years
- Use the Board's standard definitions for describing taxi operations and performance (see Table 2 on page 15)

The remainder of this section expands on these steps.

## *Program Attributes into the Dispatch System*

Data-collection attributes are programmed into the dispatch system to identify particular services for statistical collection purposes. This enables taxi companies to track changes in the services it manages as part of the overall operation. Most dispatch system have built-in attributes and capacity for companies to set custom attributes. To ensure that attributes are used consistently, attributes should be:

- associated with significant transportation services
- well defined
- few in number
- implemented with sufficient training for call takers

The integration of central dispatch systems and new dispatch technologies (e.g. mobile apps and interactive voice recognition) often requires synchronization of attributes.

Table 1 describes attributes that are relevant to additional vehicles applications.

***Table 1: Common Dispatch System Attributes Relevant to Additional Taxi Applications***

| <b>Name</b>         | <b>Description</b>  | <b>Type</b> |
|---------------------|---|-------------|
| Airport             | Trips originating at the airport  | Flag        |
| Crew Transportation | Crew transportation provided under contract.  | Dispatch    |
| Freight or Cargo    | A vehicle is requested to transport large items   | Dispatch    |
| Pre-Booked          | A passenger requests pickup at a specified time (at least 30 minutes in the future).    | Dispatch    |
| “Van” or “5-Seater” | A vehicle is requested with extra seating capacity.                                     | Dispatch    |
| Wheelchair Van      | A person requires a wheelchair accessible van to travel in their wheelchair or scooter. | Dispatch    |

## *Set Up Long-Term Data Retention*

Central dispatch systems have tended to retain data for just 3, 6 or 12 months. The Board requires applicants to provide data for at least 24 months to show year-over-year changes. Usually, this means that taxi companies need to take pro-active steps to:

- archive raw data (contact your dispatch company or a consultant to do this)

- set up a manual or automated, in-house system to export and save data outside the system, or
- generate and save summary data reports on a monthly or quarterly schedule.

Taxi companies can take the following steps:

1. Contact your dispatch company or a consultant to archive raw data on a periodic basis (e.g. monthly or quarterly).
2. Contact your dispatch system or a consultant to save or archive monthly statistics that can be used to generate reports later.
3. Manually print a set of monthly statistical reports at the end of each month and save them for use later.

### *Data Definitions*

Standardized definitions are listed in Table 2 to enable more precise communication between the Board and applicants about taxi data. Definitions are limited to terms that describe data reported in applications for additional taxis.

**Table 2: Taxi Data Definitions**

| <b>Term</b>             | <b>Definition</b>  |
|-------------------------|--|
| <b>Arrival Event</b>    | <b>The time when the taxi arrives at the customer’s pick-up location.</b><br><i>Note: Some dispatch systems that record arrival time also record GPS location information.</i>   |
| <b>Dispatch Event</b>   | <b>The time when a customer’s request for a taxi is entered into the central dispatch system.</b><br><i>Note: The event described above is sometimes referred to as the <b>call-out</b>. Central dispatch systems often use a dispatch event to start measuring response time. Spreadsheet C (Response Times) asks applicants to indicate when its system starts (and stops) measuring response times.</i> |
| <b>Dropped Request</b>  | <b>A trip request that is cancelled or terminated before “trip acceptance” by a driver.</b>  |
| <b>Meter-On Event</b>   | <b>The time when passengers are securely seated in the taxi and the taxi meter is activated.</b>   |
| <b>Non-Service Trip</b> | <b>A dispatch trip that a driver accepted that did not result in a meter-on event.</b><br><i>Note: Non-service trips include <b>no-shows</b> and <b>cancelled trips</b>. They are sometimes called ‘<b>no loads</b>.’</i>  |
| <b>Pre-booked Trip</b>  | <b>A customer request for a trip with a specified pick-up time that is booked at least 30 minutes in advance.</b>  |

|                      |   |
|----------------------|---|
| <b>Response Time</b> | <p><b>The time between the <i>dispatch event</i> and either the <i>arrival or meter-on event</i>.</b></p> <p><i>Note: It is preferable to mark the end of a trip's response time by the arrival event. However, only some dispatch systems record this event. The Response Time spreadsheet asks applicants to indicate which event marks the end of the response time.</i></p> |
| <b>Serviced Trip</b> | <p><b>A trip that results in a meter-on event.</b></p> <p><i>Note: Serviced trips are sometimes called '<b>completed trips</b>.'</i></p>  |

## E. Confidentiality, Disclosure and Publication of Data

### *Use of Data in Board Decisions*

Board decisions on applications are published in the PT Board Weekly Bulletin on its website. Generally, the Board takes the following approaches when writing about the data in your application materials:

- Operational data is generally limited to percentage terms
- Trip numbers are generally not noted in Board decisions. It may make exceptions where data was produced by a third party (e.g. trip numbers from an airport authority) or a particular number is needed to make a finding.
- The number of vehicles on shift (or off shift) may be noted in Board decision.

### *Third Part Requests for Application Information*

Generally, the Board does not disclose the data it receives from an applicant. However, data could be disclosed to submitters or other persons if the Board:

- is responding to a request made pursuant to the *Freedom of Information and Protection of Privacy Act*,
- sets the application down for a public hearing, or
- views disclosure as necessary as part of its review of an application.

If operational data is disclosed, Board policy is to regard data related to actual number of trips as proprietary and, therefore, confidential.

## **F. Feedback**

We welcome feedback that can help us improve this guide and our data reporting tools. Feel free to send corrections, critiques or suggestions to Board staff at [ptboard@gov.bc.ca](mailto:ptboard@gov.bc.ca). The Board reviews its application materials periodically and feedback from people who used them is very helpful.

## Appendix A: Measuring Response Time Performance

This Appendix provides more information about reporting targets and actual performance.

### *Response Time Targets*

Say your company aims to pick up passengers within 10 minutes or less 85% of the time. Report the targets in Spreadsheet A using drop-down options shown in Figure 2 (page 6).

### *Actual Response Times*

To report performance, input data in the response time sections of Spreadsheets B and C. First, you need to find out the longest response time among the fastest 85% of all dispatch trips in one month. You can do this with your own Excel spreadsheet:

- Import response times into Excel for all trips that were completed with a passenger
- Sort the trips from shortest response to the longest
- Use the Excel PERCENTILE function to get the 85<sup>th</sup> percentile for that month.
- Repeat the procedure for each month.

Say your company completed 1000 trips in March 2018. What is the 85<sup>th</sup> percentile for response times? After importing and sorting the data, find the response time for longest trip among the 850 shortest trips. If it was 16 minutes, 30 seconds, the 85<sup>th</sup> percentile for all dispatch responses is 16.5 minutes. In other words, taxis picked up passengers in 16.5 minutes or less for 85% of dispatch trips. Excel makes it easy to calculate this from a list. If data is listed in cells A1 through A1000, enter the following formula in Cell A1001:

```
=PERCENTILE(A1:A1000,0.85)
```

Use the decimal for the percentile you want (e.g. 0.85)<sup>1</sup>. For each month, enter results for conventional taxis in Spreadsheet B and for wheelchair accessible taxis in Spreadsheet C. On page 7, Figure 3 illustrates the entry of this data into sheet B1.

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<sup>1</sup> Excel 2007 (or later) or Excel for Mac 2011 (or later) may be required to use the PERCENTILE function. In more recent versions of Excel, the PERCENTILE.EXC may be used instead. Use “Excel Help” (accessible from Excel) to get more information about the use of percentile functions.