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Specializing in Corporate, Legal & Financial Investigations

Important Traffic Data Recorder Information

The equipment and software program is designed to process traffic data collected with the automatic traffic recorder. We will be able to analyze the data and produce comprehensive reports regarding the collected data. Traffic data analysis is a very technical field and prior to starting an assignment and placing the equipment on location, several questions need to be answered on what to expect and familiarity with the industry terms is essential. Some of these terms and their definitions are listed below:

Basic Data:

This is also known as Raw Data. This stands for any data that is collected in a time-stamp format. In a time-stamp format, the traffic recorder marks every sensor activation with a time stamp of exactly when it occurs. It is then up to the software program to formulate these time stamps into the data that can be used to produce reports.

Per Vehicle Data:

This stands for data that is stored in a vehicle-by-vehicle basis. In this format the program stores a table of the data of every individual vehicle recorded during the study. There are two ways to produce this type of data in the program. One is by collecting the data in a format in a counter or secondly, by processing the Basic Data into this format.

Binned:

This stands for any data that has been sorted into pre-defined categories. This includes classifications, speed and gap data. In this format, the data is not stored for each vehicle but rather for each category. For example, in a speed study a vehicle traveling 37 mph would be added to the 36-40-speed category (or bin) for the time period this data was collected.

Volume:

This is data that has been collected with the purpose of determining the number of vehicles traveling over the study site for a given period of time. In this format, vehicles can be counted in several ways, such as a vehicle-by-vehicle count, a divide-by-two count, or an axle count.

- Classification:** This is data that has been collected with the purpose of determining what types of vehicles are traveling over the study site for a given period of time. Classifications are based on the spacing and number of axles a vehicle has and not on the make and model of the vehicle. The most commonly used scheme for classifying vehicles is the Federal Highway Administration's Scheme F, which is the default most commonly used in traffic recorders.
- Speed:** This is data that has been collected with the purpose of determining how fast vehicles are traveling over the study site for a given period of time. This data is then interpreted to provide statistics such as 85th and 95th percentiles.
- Gap:** This is data that has been collected with the purpose of determining when no traffic (or gaps) occurs at the study site. Once a gap occurs, this format also records how long the gap lasts.
- Interval:** This is a pre-defined time period into which the data in a study is divided. The most commonly used interval times are 15 minutes and 60 minutes.
- Site Code:** This is a number, or a combination of numbers and letters, used to help identify where a specific study was done. This is for optional use. You do not have to enter a site code if you do not use them.
- Group Description:** Also known as Direction Description, this is the name assigned to a ~ specific portion of the data. In most cases this is used for speed, class or gap data that has been ~ collected in more than one lane
- Peak Hour Factor:** The Peak Hour Factor (PHF) is used to indicate how evenly the rate of the flow of traffic is during the peak hour. The maximum value of a PHF could be 1.000, which would occur if the volumes in each 15-minute interval of the peak hour were equal. The minimum value of a PHF could be 0.025, which would occur if the total volume for the peak hour occurred in only one interval. Typically, the PHF will fall into a range of 0.700 to 0.980. The lower the value of PHF, the higher degree of variation in volumes during the peak hour.
- Average Daily Total:** The Average Daily Total (ADT) is calculated by taking the number of intervals of actual data that there are. For example,

if there were 2 complete days of data collection with 15-minute intervals, the total number of intervals would be 192. The program then notes how many intervals there are in one day. If the data were collected in 15-minute intervals then the total intervals for one day would be 96. The program then divides the number of intervals in a day (96) into the total number of data intervals (192) for a figure of 2.0. The inverse of this number is calculated to be $\frac{1}{2}$ and this number is then used to create a factor of 0.5 or $\frac{1}{2}$. The program then adds all of the data in the study (for example 20,000) and multiplies that number by the factor created (0.50), which yields the ADT value of 10,000. This formula can be used with several weeks of data to an hour or less worth of data. The more data that has been collected, the more accurate the ADT will be. It is recommended that the ADT be calculated from full days of data, midnight to midnight. If days are included where only a portion of the data has been recorded, the ADT may be less accurate.

AADT: The Annual Average Daily Total (AADT) is calculated from the ADT by applying a seasonal correction factor.

Report Criteria

- ◆ Alphanumeric site code station ID fields will be used on all reports.
- ◆ Unless otherwise requested prior to the data collection, the 24-hour military time format will be used instead of the 12-hour clock a.m. versus p.m. format.
- ◆ A 14th Bin tab will be utilized when collecting Bin Data for those clients that desire collecting classification data using the Federal Highway Administration's Scheme F. This scheme consists of 13 class bins. If a recorded vehicle does not fit into one of these bins, the data is placed in the 14th bin. This 14th bin data generally represents the amount of error that occurred during the specific data collection. The 14th bin allows one to decide what to do with the collected, but unclassified data, when the data is eventually downloaded. There are three options when dealing with the collected yet unclassified data placed in the 14th bin. Unless otherwise requested prior to the collection of the data, the 14th bin data collected will be reported as in option number one (1). These options are as follows:

Option Number 1: **Do not redistribute the data.** This selection allows you to keep the class 14th bin data when a classification download is conducted.

- Option Number 2: **Move all of the 14th bin data into one other bin.** This selection allows you to move all of the class 14 data into one of the other bins in the same study. When selecting this option, one must choose which bin to move the data collected in the 14th bin.
- Option Number 3: **Use the redistribution table.** This selection allows you to have all the class 14 bin data moved into the other bins on a percentage basis. When this option is selected one is prompted to select the percentages for each bin in the redistribution table. Note that the percentage can be any fraction of 100, or greater than 100 if you would like the unclassified data to be factored higher when it is redistributed.

When a traffic count is requested the following steps are necessary:

- (1) We will have to view the scene during daylight hours and make our normal and required observations to determine the proper placement of the tubing and equipment.
- (2) The equipment will be examined for battery life, memory capacity and calibrations techniques.
- (3) The pattern layout of the tubing across the requested roadway will be measured and the required tubing will be laid in the proper pattern and secured by ties, pins and cables prior to the commencement of the data collection process. Typically, 100 feet minimum of tubing is required to be used and possibly up to approximately 300 to 400 feet of tubing is required for the data collection process, depending on which one of the twelve (12) schematic layout patterns are used for the proper collection of data at the roadway collection site. Different configurations of tubing are required for each specific traffic count data collection. Therefore, the tubing for the proper layout utilized in the study will be billed at a rate of \$2.75 per linear foot of tubing. These prices are subject to change. The length of the tubing that will be required for each collection site is dependant on the following:
 - (a) Depending on what type of data is to be collected.
 - (b) The required configuration schematic used for the specific site location as required to properly collect the data, which may require multiple tubes for single lanes or multiple tubes for multiple lanes.
 - (c) The width of each lane in the roadway, including turning lanes, if any.
 - (d) If multiple lanes are included in the study.

- (e) The width of islands, medians or distance separation between lanes going the same direction or the opposite direction.
- (4) The traffic counter will be turned on at the proper times and monitored to ensure proper readings.
- (5) The equipment must be protected from vandalism and theft even though it is tied down and chained.
- (6) For periods of data collection longer than one complete day or 24-hour period, several checks of the equipment and readings will be necessary at the site location during the data collection period.
- (7) Once the study is completed, extraction of the equipment, cables, tubing and pins must be conducted.
- (8) Reports will be generated after the data is downloaded once we return to our offices.

It should be noted that we are not responsible for malfunctioning of the equipment, vandalism and/or theft of the equipment should this occur.

Client Questionnaire

Traffic Counter Case Request Form

Please mail or fax the completed form.

Client: _____	Contact: _____		
Address: _____	Title: _____		
City/State/Zip: _____	Office: (____) _____		
Email: _____	Fax: (____) _____		
Print Name of Client	Client Title	Authorized Client Signature	Date

We will customize the top four (4) lines at the top of each page of the reports to suit your needs. For example:

Example

Enter your information desired

Line 1: Company Name	_____
Line 2: Company address	_____
Line 3: City, State Zip code	_____
Line 4: Company Telephone Number	_____

We can also include comments, which will print in the upper left corner of the report and are designed to provide miscellaneous additional information with the data that is presented in the report. Please provide the short comments that you want in the upper left of the report. Typically we would include the location of data collection site, type of weather conditions, serial number of the unit counter used (we will fill in this information if desired), case file number, name of installer and other comments.

Comment Line 1:	_____
Comment Line 2:	_____
Comment Line 3:	_____
Comment Line 4:	_____