5 Description of Database

The data analyzed in this manual were contributed voluntarily by state and local government agencies, consulting firms, individual transportation professionals, universities and colleges, developers, associations, and ITE local districts, sections, and student chapters. In many cases, the data were originally contained in published reports or unpublished analyses conducted by these groups. Sources are listed in Chapter 10. ITE Headquarters did not conduct any original field surveys.

The amount of data submitted for individual sites varies from a single peak-hour volume to seven days of directional hourly volumes. All available data are combined to maximize the size of the database for each land use and time period. Before being entered into the comprehensive database, all submitted data are examined by ITE staff for validity and reasonableness.

Data Collection

Some submitted data were collected through manual counts; others were obtained using automatic counters or video footage. All count locations excluded through traffic. Automatic counters were configured to count vehicular traffic entering and exiting sites, with driveway placement carefully selected to avoid double counting turning vehicles. In some cases, counts were non-directional and did not distinguish between entering and exiting traffic.

Manual counts often supplemented automatic counts to collect vehicle occupancy and classification data, verify the accuracy of the automatic counters, and obtain directional counts during peak periods. In other cases, only manual vehicle or person counts were conducted during peak periods. At certain sites, intercept surveys were conducted to determine the travel modes of persons entering or exiting the site.

For the 12th Edition of TGM, ITE also reviewed satellite map imagery to identify potential sites for data collection. Directional traffic data at these sites were obtained through post-processed video footage, while independent variable values were determined through research and direct communication with the respective developments. Compiled trip generation data on vehicles, pedestrians, and bicyclists were entered into the database. Additional site characteristics were obtained through internet searches, personal interviews, actual measurements, telephone conversations, and other correspondence.

Data Analysis and Storage

Each study site data record stored by ITE includes, where available, the following information:

- Contributor name, address, and contact information
- Site name and address (municipality, state/province)
- Date of the trip generation count (month/day/year and day of the week)
- General site characteristics (for appropriate land use classification)
- Specific site characteristics corresponding to the land use independent variables
- Trips by type by time period

New data records are regularly collected; however, no changes are made to the database that produces 12th Edition data plots—except documented corrections published via errata and explicitly announced to all purchasers.

Data Age

The current database contains data collected from 1990 onward. The ITETripGen web app enables a user to filter trip generation data by time period to create customized data plots and associated statistics. While filtering the data by age may provide useful insights, analysts should exercise caution. A filtered subset may not necessarily constitute a balance of potential land use characteristics. As the database is filtered and the dataset diminishes, the likelihood of achieving a representative cross-section decreases.

Variations in the Statistics

Variation in trip generation characteristics for specific land uses is reflected in the range of rates, standard deviation, and coefficient of determination (R^2) value. These variations may be due to small sample sizes, site-specific marketing or economic factors, geographic differences, or unique site characteristics. Accordingly, judgment must be exercised in the use of the statistics in this manual.

Additional variation may result from differences in the duration of traffic counts; the season during which the traffic volumes were counted; and geographic location of the study site. The ITETripGen web app allows users to filter data by geographic region within the U.S. and Canada.

Limitations of the Data Plots

Variations in trip generation characteristics for specific land uses often produce scatter diagrams in the *Trip Generation Manual* data plots. These variations may result from small sample sizes; differences in economic conditions at the times of data collection; differences in the settings; unique site characteristics of the specific sites; or daily, seasonal, and geographic fluctuations. Accordingly, professional judgment must be exercised when interpreting the reported data and statistics.

Data plots represent only the range of independent variable values for which data are available. Caution should be used if extrapolating the data beyond the documented ranges, as no data exist to characterize trip generation behavior beyond the available ranges.

In some data plots, the fitted curve equation produces significantly large or negative y-intercept. For independent variables with low values, the fitted curve equation may yield unreasonable trips estimates (e.g., fewer than zero trips), particularly when applied outside the observed data range.

In rare cases—due to limited sample size and data variability—the projected trip generation for the peak hour of the adjacent street traffic may exceed the peak hour trip generation for the generator, which is theoretically impossible. Similarly, some TGM data plots show more vehicle trips than person trips, which is also impossible given that person trips must equal or exceed vehicle trips. Lastly, small samples sometimes show illogical decreases in trips as the independent variable increases. In these rare instances, professionals should use their site-specific knowledge and judgment to determine the best trip generation estimate.