Reviewing and Validating Turning Movement Counts

Incorporate the following guidelines into your validation process:

- **Review 15-minute intervals.** Do any of the volumes appear inconsistent?

  Examples might include turns into a location that doesn't have a street or driveway on that approach or volumes that suddenly increase or decrease substantially (for example, if the right turn is less than 10 for 20 consecutive intervals, and then it jumps to 150 in the next 15 minutes). Exceptions include a school located nearby, a work shift letting out, etc.

- **Review 12/13-hour volumes.** Are the opposite movements relatively balanced?

  In other words, does the volume of the southbound left equal the volume of the eastbound right (or any other reverse movements)? These counts, including counts for through movements, should be close. If the counts aren't close, it doesn't necessarily mean the count is inaccurate, but you do need to investigate further. Check historic counts at the location or in the immediate vicinity, either portable or turning movements, and review maps/aerial photos. For example, if a shopping center has one left-turn lane in that is signalized, but it has multiple right-turn lanes out that are not signalized, the right lanes out might not be counted. As a result, the number of left in at the counted intersection will exceed the number of right out.

- **Review reverse peak-hour volumes.** Are the peak volumes for reverse movements relatively balanced?

  Does the southbound left turn in the a.m. peak approximately equal the eastbound right turn in the p.m. peak (or any other reverse movements)? There are more exceptions for not adhering to this validation than the 12/13-hour validation because of areas like shopping centers, etc.

- **Compare multiple counts.**

  If you perform several counts on the same roadway, compare one count to the other to see if the volume leaving one intersection is close to the volume entering the next intersection. If volumes are not similar, check to see if mid-block access points (such as intersections, major commercial access, retail entrances, etc.) exist and have contributed to the traffic entering and exiting between the intersections.

- **Compare historic counts.**

  If the count doesn't follow the guidelines above, look at historic counts to see if the same patterns exist.

  To make a comparison between historical and current data sets, consider the difference in age of the data, the time of year, and the day of week in which the data was collected.

- **Compare historic counts.** *(continued)*

  Evaluate the counts for consistency in terms of the following:

  - Peak-hour time of day
  - Total peak-hour entering volumes
  - Total daily entering volumes (vehicular and pedestrian)
  - Total directional approach volumes
  - Peak-hour directional approach volumes
  - Quick research on major developments in the area since the last count was taken that would affect the traffic volumes at the intersection
  - Quick research on roadway improvements in the area that would affect the intersection volumes

- **Analyze Critical Lane Volume (CLV).**

  CLV worksheets are not automated because they have to accommodate many different intersection configurations, like special treatment for right and left turns. Typical checkpoints include the following:

  - Right-Turn Overlap, Free Right Turn, and Right Turn on Red (RTOR)
  - Lane Configuration
  - Volumes and Opposing Volumes
  - Passenger Car Equivalency Factors
  - Lane Use Factors and De Facto Lanes
  - Signal Phasing
  - Calculation Errors (in spreadsheet formulas)
  - Does the LOS match the existing field conditions (for example, F = congested operations)?