



Turning Movement Counts

This is used for traffic counts conducted at an intersection, to identify problems with signal timings, traffic control device placements. The template also gives information about school children, pedestrians and people making U-turns at the intersection.

All files should be labeled with the job number

- Excel Template
- Electronic file for CLV (Adobe Acrobat pdf /excel format)
- Digital Pictures showing the lane configuration of all the legs of the intersection (See the Digital Documents)

Notes on filling the excel templates

These templates are in a specific format and **must not be modified**. There are four parts to be filled out.

The header information

Job Number	The request number associated with the count
Location	The location where the count is conducted (Use the same exact wordings as the count request)
Date	Date the count is conducted
Recorder	Identifies the person performing the count (Optional)
Interval	This signifies the time increments the data is collected(15/60min)
County	County in which the count was done
City/Town	The name of the city/town where count is conducted
Weather	The weather on the day of the count
AM & PM LOS	The level of service for both AM & PM
AM & PM V/C Ratio	The volume capacity ratio for both AM & PM

The vehicle data section

Street Name	This contains the street name of each leg of the count. This must be done according to the appropriate direction. Note: This should be the same as listed in the count request
Data for each leg is filled out according to the ending hour .	
Each Leg is split into four parts:	
U turn	Vehicles coming out of the leg and returning
Left	Vehicles coming out of the leg and making a left turn
Through	Vehicles coming out of the leg and going through the intersection
Right	Vehicles coming out of the leg and making a right turn
The totals are calculated automatically	

1) The school children, pedestrian, & bicycle data section

This is a mandatory part of the count. Each Turning Movement count must have this data. Note that the time in this field is also the ending hour.

2) Comments section

If there are no pedestrians, then the comment “**No Pedestrians**” should be placed in the comment field. If there is any special event at the time of the count, make note of it in the comments section, i.e., lane closures, accidents, construction, etc.

Note:

If there are no vehicles/pedestrians within a particular interval of the count, it should be represented by zeros instead of blanks. The cells not included in the count duration should be left blank.

Printing: Some fields in excel template may be hidden for printing purposes, but the electronic files that are submitted should not have any fields hidden.

Reviewing and Validating Turning Movement Counts

Incorporate the following guidelines into your validation process:

1) 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.

2) Review 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.

3) 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.

4) Compare counts in the area. Does the data flow with neighboring counts sites?

If you perform several counts on the same roadway or if there are counts close to the count being reviewed, 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.

5) Compare historic counts. Is the data historically consistent?

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.

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

6) 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)?