

March 11<sup>th</sup>, 2013

MEMORANDUM

To: Parties Submitting Traffic Studies

FROM: Jose S. Dory

GIS-T Planner

Functional Planning & Policy Division

Subject: **Electronic Submission of Turning Movement Counts – Procedures and File Format**

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This memorandum provides the digital format to be used when submitting turning movement counts to support traffic studies. In addition to detailing the actual file format of the traffic counts, it also outlines the procedures for submission of the digital files. The submission of bike and pedestrian counts in future traffic studies is also now required as a part of the recently adopted Local Area Transportation Review and Transportation Policy Area Review (LATR/TPAR) Guidelines. Details on how to submit bike and pedestrian data is also discussed in this memorandum.

The digital traffic count files are a supplement to rather than a substitute for the hard copy traffic counts included with an accepted traffic study. Therefore, the digital counts must be submitted to Functional Planning and Policy in conjunction with the existing documents already required by the LATR Guidelines. The digital file format has been designed to support the automated loading of count data into the Planning intersection database. This database provides the foundation for a web-based GIS application that will be initially utilized by staff for intersection analysis. Future upgrades are on-going, to make the intersection database accessible and user-friendly to the consultant community and citizens.

This document is divided into two separate sections for ease of use. The first section provides general information about the standards. This section should answer many of the more common questions about implementing the standard. The second section contains details for the actual digital format. The details include overall file format, column format, domain values and width, descriptors for hard return placements, and sample data.

The intersection database will accept up to a 23-hour count for a given location, but the data must still be in 15 minute time intervals. These counts will be submitted to the database as existing conditions. Similarly, counts taken from the database for submission with a traffic study should also be considered existing conditions, unless the age of the data is inconsistent with the provisions in the LATR/TPAR Guidelines.

## General Standard Information

- Media
  - Digital Files should be submitted electronically on a CD, and/or sent to [mcp-trafficcounts@mncppc-mc.org](mailto:mcp-trafficcounts@mncppc-mc.org). Sending traffic counts to “mcp-trafficcounts” is preferred.
  - The CD should be labeled with the project(s) for which the counts are being submitted, and a point of contact for questions about the count data.
- The CD must be included with the actual hard copy traffic study submitted to Planning Department staff. File Naming
  - A Microsoft Excel template is available detailing the traffic count file format. A hard copy of the template, as well as a sample count file in final format, is attached to the end of this document.
  - The template and sample file are also available on the Planning website. We recommend formatting the count using the Excel template, and then periodically saving a new file as indicated below.
  - Save the completed file as type “Formatted Text (Space Delimited)” (\*.prn)
  - The submitted file should be named in the following format:
    - IntersectionID\_MMDDYYYY.prn
    - (e.g., int00325\_12102012)
  - One file per intersection, per day
  - Multiple files can be submitted on a CD.

## Intersection ID Numbers and Cardinal Directions

All signalized intersections in the county (of which the database currently lists over 800 intersections) have a unique ID number that must be included in the count file and as part of the file name. A list of intersections and their ID numbers is available on the Planning website. This list also lists the various legs of the intersections and indicates which legs are designated north/south or east/west; this designation must be followed when submitting traffic counts. The information comes directly from the Montgomery County Department of Transportation (MCDOT) configuration files and is updated periodically. If you have any questions or concerns about the data, please contact our office.

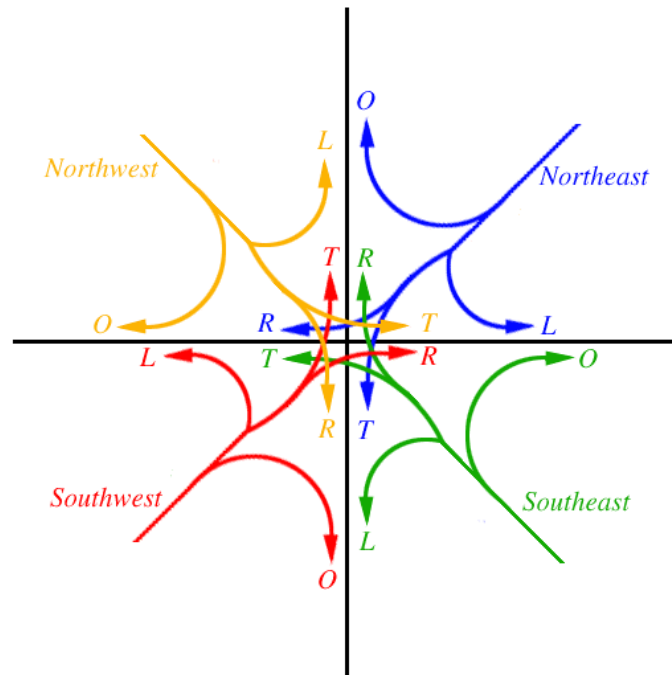
## Unsignalized Intersections

Our database does not store information for the thousands of unsignalized intersections in the County. If your traffic study requires the submission of traffic counts at unsignalized intersections, assign those counts intersection ID numbers beginning at 990 and move forward by increments of one for each additional signalized intersection in your study area where you are submitting traffic counts. If you are submitting more than one traffic study at a time, start again at 990 for each new traffic study. We will collect the counts for future database expansion.

## Five-Legged Intersections

For each intersection, up to four legs are identified according to cardinal directions; northbound, southbound, eastbound, and westbound. The database protocol incorporates five-legged intersections by introducing a fifth leg, always termed the “other” leg. For five-legged intersections, the analyst must determine in which quadrant of the four-leg intersections the “other” leg belongs. Turns from the cardinal legs to other cardinal legs are always labeled “left”, “through”, and “right” and turns from the cardinal legs to the other leg are always labeled “other”.

Turns from the “other” leg are always labeled such that the first three movements from left to right (i.e., clockwise) are labeled “left”, “through”, and “right” and the fourth movement is labeled “other”. Below is a diagram that illustrates all possible 5<sup>th</sup> leg configurations. The diagram also documents all possible values for traffic movements based on the 5<sup>th</sup> leg directionality.



The following examples demonstrate how this process is applied to an actual five-legged intersection with the fifth leg in the Northwest quadrant:

**“Other” leg in NW quadrant**

Example: St. Andrews Way at Colesville Road (N/S) / Sligo Creek Parkway (E/W)

NBL = northbound Colesville Road to westbound Sligo Creek Parkway  
 NBT = northbound Colesville Road to northbound Colesville Road  
 NBR = northbound Colesville Road to eastbound Sligo Creek Parkway  
 NBO = northbound Colesville Road to northwestbound St. Andrews Way

SBL = southbound Colesville Road to eastbound Sligo Creek Parkway  
 SBT = southbound Colesville Road to southbound Colesville Road  
 SBR = southbound Colesville Road to westbound Sligo Creek Parkway  
 SBO = southbound Colesville Road to northwestbound St. Andrews Way

EBL = eastbound Sligo Creek Parkway to northbound Colesville Road  
 EBT = eastbound Sligo Creek Parkway to eastbound Sligo Creek Parkway  
 EBR = eastbound Sligo Creek Parkway to southbound Colesville Road  
 EBO = eastbound Sligo Creek Parkway to northwestbound St. Andrews Way

WBL = westbound Sligo Creek Parkway to southbound Colesville Road  
 WBT = westbound Sligo Creek Parkway to westbound Sligo Creek Parkway  
 WBR = westbound Sligo Creek Parkway to northbound Colesville Road  
 WBO = westbound Sligo Creek Parkway to northwestbound St. Andrews Way

OL = southeastbound St. Andrews Way to northbound Colesville Road  
 OT = southeastbound St. Andrews Way to eastbound Sligo Creek Parkway  
 OR = southeastbound St. Andrews Way to southbound Colesville Road  
 OO = southeastbound St. Andrews Way to westbound Sligo Creek Parkway

The following page includes an intersection map for use with the information above. Below are the five-legged intersections noted in the database. Details on the “other” leg may be found in the list of all intersections on our website. In some cases, the “other” leg is a fire station driveway.

Intersection ID	Intersection Name
8	Montgomery Village Ave at Russell Ave
173	Connecticut Ave at Plyers Mill Rd
195	16 <sup>th</sup> St at Second Ave and Elkhart Ln
210	Georgia Ave at Randolph Rd
243	Wisconsin Ave at Bradley Blvd
253	Old Georgetown Rd at Arlington Rd and Wilson Ln
285	Old Columbia Pk at Briggs Chaney Rd
301	Colesville Rd at Sligo Creek Pkwy and St Andrews Way
318	Georgia Ave at Silver Spring Ave
320	Georgia Ave at East-West Hwy and Burlington Ave and 13 <sup>th</sup> St
440	East-West Hwy at Blair Mill Rd and Newell St

# Colesville Rd/Sligo Creek Parkway/St. Andrews Way



Map Compiled On 05-06-2002 at 10:11 AM  
Map Scale: 1 inch = 400 feet or 1:4800



The Maryland-National Capital Park and Planning Commission  
Montgomery County Department of Park and Planning  
Transportation Planning Unit  
2837 Georgia Avenue | Silver Spring, Maryland 20910  
301.456.4525 voice | 301.456.1302 fax | <http://www.mnppc.org>

SP-NT 0842 2000 Street Centerline  
Buildings  
Pavement  
Hangingover Cuts

NOTES

This map is a preliminary map and is not intended to be used for legal purposes. It is a preliminary map and is not intended to be used for legal purposes. It is a preliminary map and is not intended to be used for legal purposes.

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## **Intersections with more than five legs**

There are a few intersection locations with more than five legs. If you need to submit a traffic count at one of these locations, contact me to discuss the digital file format.

## **Bike and Pedestrian Data**

In accordance with the adopted LATR/TPAR Guidelines, traffic studies are to be submitted with bike and pedestrian access and circulation information, as well as bike and pedestrian counts (see “Scope of an LATR Traffic Study”, Provision 10, “Pedestrian and Bicycle Impact Statement”). Pedestrian and bicycle counts are to be collected at each intersection leg. In addition, an accounting of pedestrians and bicyclists crossing multiple legs is to be reported. Please see the accompanying template located in appendix of this memorandum. The template addresses all legs; north, south, east, west, and other. We will initially emphasize the volume of both pedestrians and bicyclists going through an intersection and will continue to make adjustments when needed. The database is currently in its developmental stage and this is a good starting point to develop and store bike and pedestrian count data for the foreseeable future.

## **Resources**

The detailed format for the digital traffic counts is attached to this memorandum. Also included is a sample excerpt from the Microsoft Excel template for use with the count format, as well as a sample text file illustrating a count in the final raw format (what gets loaded into the database). These documents are all available on our website as well, along with the list of intersection ID numbers and cardinal directions of each intersection leg. The pedestrian and bicycle template will be made available on the department page on the Planning website.

I am available to assist anyone with any aspect of this processes described in this memorandum. Feel free to call me at (301) 495-4639 or contact me by e-mail at [jose.dory@montgomeryplanning.org](mailto:jose.dory@montgomeryplanning.org) or [mcp-trafficcounts@mncppc-mc.org](mailto:mcp-trafficcounts@mncppc-mc.org) should you have any questions.



## Appendix A Contractor Format

Section	Width	Start	End	Format	Comment
Header	1	1	1	Character	"H" - Denotes header section
Header	5	2	6	Small Integer	Intersection ID - given to contractor before count
Header	8	7	14	MMDDYYYY	Date that the count was taken
Header	4	15	18	Military	Start Time
Header	4	19	22	Military	End Time
Header	40	23	62	Character	Company Name
Header	5	63	67	Small Integer	Estimated Future CLV
Header	5	68	72	Small Integer	Existing intersection CLV
Header	5	73	77	Small Integer	Morning Peak CLV value
Header	4	78	81	Military	Time that the Morning Peak Hour <b>begins</b>
Header	5	82	86	Small Integer	Evening Peak CLV value
Header	4	87	90	Military	Time that Evening Peak CLV Hour <b>begins</b>
Header	2	91	92	Character	M,T,W,Th,F,S,Sn
Header	1	93	93	Boolean	Holiday (Y/N)
Header	250	94	343	Character	Overall conclusion for the intersection/comments
<b>Place Hard Return In File</b>					
Intersection Configuration	1	1	1	Character	"I" - Denotes beginning of Lane Configuration Section
Intersection Configuration	40	2	41	Character	North bound road name
Intersection Configuration	40	42	81	Character	South bound road name
Intersection Configuration	40	82	121	Character	East bound road name
Intersection Configuration	40	122	161	Character	West bound road name
Intersection Configuration	40	162	201	Character	Other road name



Intersection Configuration	1	202	202	Character	Split phasing in northbound and southbound direction of travel - Y/N
Intersection Configuration	1	203	203	Character	Split phasing in westbound and eastbound direction of travel - Y/N
Place Hard Return In File					
Repeat for all Directions With Hard Return After Each Full Direction					
Lane Configuration	2	1	2	Character	NB,SB,EB,WB,OB
Repeat for all lanes					
Lane Configuration	1	3, 8...	3, 8...	Small Integer	1 to $n$ - starting with the <b>left</b> most lane
Lane Configuration	4	4, 9...	7, 12...	Character	valid values - T,R,L,TR,TL,TRL,LR, O, TO, TRO, TLO, TRLO, RO, LO, LRO, FR (T=Through, R=Right, L=Left, O=Other [5th leg], FR=Free Right)
Place Hard Return In File					
Count	1	1	1	Character	"C" - Denotes count section
Repeat for all 15 Minute Intervals With Hard Return After Each Full Time With Counts.					
Count	4	2	5	Military	Start time for 15 minute interval
Repeat for each direction					
Count	2	6, 28...	7, 29...	Character	NB,SB,EB,WB,OB
Count	5	8, 30...	12, 34...	Small Integer	Number of <b>left</b> vehicles
Count	5	13, 35...	17, 39...	Small Integer	Number of <b>through</b> turning vehicles
Count	5	18, 40...	22, 44...	Small Integer	Number of <b>right</b> turning vehicles
Count	5	23, 45...	27, 49...	Small Integer	Number of vehicles turning to the "other" leg

## Appendix B: Excerpt From Microsoft Excel Template

[illegible]

## Appendix C: Sample count in raw text format

H 800510200107001800KIMLEY-HORN 0000001961019610700012421630ThN  
ISHADY GROVE ROAD SHADY GROVE ROAD MIDCOUNTY HWY NN  
NB1L 2L 3T 4T  
SB1T 2T 3TR  
EB1L 2L 3R 4R  
WB1 2  
OB1 2  
C0700NB00076001940000000000SB00000007160001200000EB00068000000068800000WB0000000000000000000B00000000000000000000  
C0715NB00137002880000000000SB00000008500000500000EB000870000000073700000WB00000000000000000000B00000000000000000000  
C0730NB00159002650000000000SB00000007520001600000EB00124000000071100000WB00000000000000000000B00000000000000000000  
C0745NB00150002830000000000SB00000007120003400000EB0010600000066900000WB00000000000000000000B00000000000000000000  
C0800NB00101002130000000000SB00000005400002300000EB0006800000055000000WB00000000000000000000B00000000000000000000  
C0815NB00140002490000000000SB00000005780002500000EB0008200000055000000WB00000000000000000000B00000000000000000000  
C0830NB00156002800000000000SB00000007040002600000EB0007900000068200000WB00000000000000000000B00000000000000000000  
C0845NB00114002510000000000SB00000007570001800000EB0006000000053600000WB00000000000000000000B00000000000000000000  
C1600NB00250007480000000000SB00000003460005300000EB00076000000016000000WB00000000000000000000B00000000000000000000  
C1615NB00319007270000000000SB00000003210001100000EB00121000000018100000WB00000000000000000000B00000000000000000000  
C1630NB00423008290000000000SB00000002910002500000EB00094000000020700000WB00000000000000000000B00000000000000000000  
C1645NB00428006800000000000SB00000002180001300000EB00096000000021300000WB00000000000000000000B00000000000000000000  
C1700NB00396008010000000000SB00000002890001000000EB00102000000021500000WB00000000000000000000B00000000000000000000  
C1715NB00377007840000000000SB00000003280000800000EB00119000000021100000WB00000000000000000000B00000000000000000000  
C1730NB00467006200000000000SB00000002830001700000EB00114000000019500000WB00000000000000000000B00000000000000000000  
C1745NB00426006170000000000SB00000003170000800000EB00110000000015600000WB00000000000000000000B00000000000000000000

## Date \_\_\_\_\_

Crosswalk	Street Name	Street Name	Street Name	Street Name	Street Name	Street Name
Hour	North Leg	South Leg	East Leg	West Leg	Other Leg	
	Ped	Bike	Ped	Bike	Ped	Bike
06:30						
06:45						
07:00						
07:15						
07:30						
07:45						
08:00						
08:15						
08:30						
08:45						
09:00						
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16:45						
17:00						
17:15						
17:30						
17:45						
18:00						
18:15						
18:30						
18:45						
TOTAL	0	0	0	0	0	0
AM Peak Vol						
PM Peak Vol						