

To:



New York State
Department of
Transportation
**ENGINEERING
INSTRUCTION**

EI
01-001

Title: **TRAFFIC MONITORING STANDARDS**

Distribution:

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Approved:

Paul J. Mack, Deputy Chief Engineer,
Technical Services Division

Date

Administrative Information

This Engineering Instruction (EI) is effective immediately. This EI supersedes EI 96-045 and the March 1996 edition of the New York State Traffic Monitoring Standards for Contractual Agreements transmitted therewith.

Purpose

This EI announces the availability of the New York State Traffic Monitoring Standards for Contractual Agreements, the traffic monitoring standards for all New York State short count traffic monitoring activities undertaken through contractual agreements for planning and/or project development.

Background

It is important that the raw data from traffic monitoring activities is maintained in a standard format for use at all levels within and outside the Department. The attached document is issued to ensure that the raw data from traffic monitoring activities undertaken pursuant to, or as part of, any contractual agreements involving funds administered and/or provided by New York State is in conformance with New York State standards established for traffic count data collected on Federal, State and selected local roadways and that it reaches the inventory data files maintained by the NYSDOT Highway Data Services Bureau in the appropriate data format. The Standards are reviewed annually and revised as deemed necessary by the New York State Department of Transportation (NYSDOT), Highway Data Services Bureau.

Applicability

These standards apply to all Traffic Monitoring Activities undertaken by private consulting engineering firms and other non-NYSDOT organizations, in support of any project or study for which funds administered or provided by New York State have been or will be used. All existing Department and Regional safety standards must be followed in executing these programs.

Distribution

The New York State Traffic Monitoring Standards for Contractual Agreements is being distributed to

separate from this EI. Copies may be obtained from the Main Office Highway Data Services Bureau or any Regional Planning Office of NYSDOT.

Contact

Questions concerning this subject should be directed to the Highway Data Services Bureau at (518) 457-7203.

**NEW YORK STATE
TRAFFIC MONITORING STANDARDS
FOR
CONTRACTUAL AGREEMENTS**

February 2004

**New York State Department of Transportation
Technical Services Division
Highway Data Services Bureau**

This document presents the traffic monitoring standards in effect for all New York State short count traffic monitoring activities undertaken through contractual agreements for planning and project development. These standards will be reviewed and revised as deemed necessary by the New York State Department of Transportation (NYSDOT), Highway Data Services Bureau.

Scope

The primary purpose of these standards is to ensure that raw data from traffic monitoring activities undertaken pursuant to, or as part of, contractual agreements involving funds administered and/or provided by New York State is in conformance with New York State standards established for traffic count data collected on Federal, State and selected Local roadways and received by the NYSDOT Highway Data Services Bureau in the appropriate data format. This ensures that the data is available for use at all levels within and outside the Department.

Applicability

These standards shall apply to all traffic monitoring activities undertaken by private consulting engineering firms or non-NYSDOT organizations, in support of any project or study for which funds administered and/or provided by New York State have been or will be used. All existing Department and Regional personnel safety standards in effect at that time must be followed (see Regional Planning Officer or Safety Officer).

Site Identification

Traffic count locations will be identified by a NYSDOT region/county code and a unique four digit traffic station number reference (See Appendix C). These reference numbers will be provided by the Regional Planning Office or the Highway Data Services Bureau, Albany, New York.

Each count shall be described through the use of the route number, route name, beginning termini, ending termini, section end mile point, counter location description, field reference marker describing the 0.1 mile section where the counting device is set, direction of travel, factor group, functional classification, tube/loop count, count type, type of equipment used and road tube layout.

Prior to undertaking any traffic counts, the consultant is specifically directed to contact the Regional Planning Office/Traffic Monitoring Group (see Appendix B for telephone numbers) to coordinate this activity and obtain the information necessary to identify the count sites as described above.

Data Collection Standards

Accuracy

The New York State Department of Transportation, through its Highway Data Services Bureau, maintains coverage and continuous count elements of the NYSDOT traffic monitoring program.

Both of these elements are conducted in compliance with the FHWA Traffic Monitoring Guide. The program is designed to utilize, at a minimum, 48-hour short counts, to produce AADT's with a confidence level of 95% within an interval of $\pm 10\%$ of the mean statistic as the criterion of the coverage count program.

The devices used to monitor traffic will accurately measure existing traffic. Additionally, device type, model accuracy, precision documentation, and operation and maintenance records will be maintained by the contractor and provided to NYSDOT before the beginning of each count season and upon request.

Minimum Short Count Traffic Monitoring Standards

Standards defined in this section and the Appendix B apply to volume, classification, weight and speed counts.

- * All counts taken in urban areas must have a data recording interval of 15 minutes. Use of recording intervals other than 15 minutes requires written approval from the Regional Planning Office.
- * All counts taken in rural areas have a data recording interval of one hour. However NYSDOT reserves the right to request a data recording interval of 15 minutes.
- * In the event that data with intervals of less than one hour is collected, the consultant will provide the Regional Planning Office with data files in that interval as well as hourly intervals if requested by the Regional Planning Office.
- * A minimum of 48-hours of data shall be reported from each coverage or special count site, with at least 2 complete counts for each interval.
- * All counts will be taken by direction unless this is not feasible. Written approval from the Regional Planning Office is required for these cases.
- * Minimum recording intervals for signalization studies will be specified in writing by the Regional Planning Office.
- * The entire 48-hour count must fall within the work week (06:00 a.m. Monday through 12:00 noon Friday). Weekend data shall not be used by NYSDOT for estimating AADT.
- * No part of the 48-hour count used for AADT estimation may contain data collected within 36-hours before and after any major weekday holiday or extended weekend formed by a Federal,

State, or Local holiday. The Regional Planning Office will provide guidance in this matter.

- * All counts will be adjusted for seasonality and, if taken with road tubes, for vehicle axles by the Regional Planning Office.

Vehicle Classification

Vehicle classification counts will be based on the 13 Federal Highway Administration (FHWA) F-Scheme categories as described in the FHWA Traffic Monitoring Guide. These counts will be conducted for a minimum 48-hour period by direction and by lane during the work week (06:00 a.m. Monday through 12:00 noon Friday). Free flow conditions are required for effective machine classification. Where conditions are not free flow or speeds are lower than 25 mph, manual vehicle classification counts (see below) will be obtained instead. Classification devices currently in use accurately record axle impulses, but do not provide consistent and accurate interpretation of axle impulses into classification of vehicles when vehicles (typically in urban areas) are traveling at speeds below 25 mph.

Vehicle type classification errors may not exceed 10% of the actual volume in any classification study conducted by machine in a multi lane configuration. Vehicle type classification errors may not exceed 5% of the actual volume in any classification study conducted by machine in a single lane configuration. When there are fewer than one hundred (100) vehicles in a class bin, an error equal to the square root of the actual number of vehicles shall be deemed acceptable.

Manual classification counts will also be based on FHWA F-Scheme specified vehicle classification categories. This count activity will use the following guidelines to collect classification data when vehicle speed is restricted.

1. Manual vehicle classification counts are to be taken by lane and direction. Twenty four (24) hour counts must be taken within the NYSDOT work week (6:00 a.m. Monday through 12:00 noon Friday). The 24 hour count period must begin at 6:00 a.m. to capture the entire morning peak traffic at the location. A concurrent volume count must be scheduled at the classification location according to the Department's standard. The volume count must include the manual class count hours of operation.

At the request of the Regional Planning Office, manual class counts for other than 24 hour duration may be requested for special projects.

2. Acceptance of manual vehicle classification data by the Regional Planning Office shall require that the absolute difference in total axles recorded by the traffic counter at the location of the class count and axles computed from the manual vehicle classification count be 10% or less of the manual computed axle value for the duration of the manual class count.

Manual volume and/or classification counts will also be employed for intersection turning movement counts.

Data Reporting Format

All short count data regardless of the equipment being used must be reported to the NYSDOT Regional Planning Office on 3-1/2" diskettes in the standard NYSDOT short count data reporting format as outlined in the attached Appendix B (maximum of twenty {20} files per disk). If the technology is available to both parties, and both parties agree, the data may be transmitted electronically via E-mail or submitted on compact disk. Questions regarding data format should be directed to either the Regional Planning Office or the Highway Data Services Bureau. Short count data will also be reported to the Project Manager and any other organizations or individuals identified in the contractual agreement.

Transmittal of Count Data

Consultants shall provide all count data to the Engineer in Charge (EIC), Project Job Manager (PJM), Consultant Manager (CM), and/or other person as directed by the Regional Planning Office. The designated NYSDOT manager will transmit the traffic count data within 10 business days of receipt from consultant to the Regional Planning Office for processing and acceptance.

Processing of Counts

The Regional Planning Office will process all counts submitted in the required data output formats and make the necessary axle and seasonal adjustments to the raw counts. The Regional Planning Office will provide the count file and "pdf" electronic document file of the processed count to the Highway Data Services Bureau for all accepted counts.

Count Acceptance

Traffic count acceptance will be determined based upon the successful processing and editing of the submitted count data by the Regional Planning Office. No payment will be made for counts that are not accepted. Rejected counts will be rescheduled at the State's discretion.

Certification of Count Acceptance

Within 15 business days of receipt of traffic count data (original or re-submitted), the Certification of Count Acceptance (for the suggested format see Appendix A) shall be issued to the Consultant (the EIC and/or other appropriate person) and the Highway Data Services Bureau indicating those counts that are acceptable and those that are rejected. This acceptance certification process applies to all counts contracted for by NYSDOT.

GPS Position Requirements

A GPS reading is required for all volume and classification counts (including manual counts). The GPS position of the traffic count shall have an accuracy of at least 12 meters and will be provided on the North American Datum of 1983 (NAD83), Universal Transverse Mercator (UTM) coordinate system Zone 18, North, in meters.

The UTM coordinates should be e-mailed to the NYSDOT Main Office Traffic Count Manager as

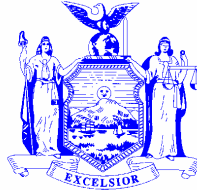
an Excel file (.xls), using the attached format, see UTM DATA REPORT, Appendix D. It is important that the required information is provided as described. This will facilitate loading the data to the Traffic Count Database.

The UTM DATA REPORT includes a column for the FIPS (Federal Information Processing Standards) county codes. A list of the FIPS County Codes is included with these instructions, see FIPS COUNTY CODES, Appendix D.

APPENDIX A

**Regional Planning Office Certification
of Acceptance of Traffic Counts**

CERTIFICATION OF COUNT ACCEPTANCE - SAMPLE LETTER
The consultant submits this letter with the voucher to the state for payment.



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
ALBANY, N.Y. 12232
www.dot.state.ny.us

JOSEPH H. BOARDMAN
COMMISSIONER

GEORGE E. PATAKI
GOVERNOR

October 3, 2000

Mr. R. Tube
Traffic Data Inc.
1 Loop Way
Albany NY 12345

Re: Contract #COO1234

Dear Mr. Tube:

The following counts have been accepted/rejected based on the standards defined in EI 00-000.

PIN: (if applicable)
ACCEPTANCE NOTICE WW#37 2000

ACCEPTED - 5 Stations (Vol.-72 Hour) (Both Directions)
REJECTED - 3 Stations (Vol.-72 Hour) (Both Directions)

COUNTY	STA.	DIR	TYPE/DURATION	COMMENTS
03	0061	EB&WB	Vol-72 Hour	Ok
03	6102	EB&WB	Vol-72 Hour	Ok
03	0027	EB&WB	Vol-72 Hour	Ok
03	0028	EB&WB	Vol-72 Hour	Reject - No WB Direction
03	8337	EB&WB	Vol-72 Hour	Reject - Incorrect Placement
03	1026	EB&WB	Vol-72 Hour	Ok
03	1027	EB&WB	Vol-72 Hour	Ok
03	0241	EB&WB	Vol-72 Hour	Reject - Incorrect Placement

cc: Project Manager, EIC, Consultant Manager, etc.
Highway Data Services Bureau, NYSDOT, Bldg 4, Room 104, Albany NY 12232-0417

APPENDIX B

Traffic Count Data Formats

Traffic Count Data Formats

NYSDOT Equipment and Software

The Traffic Monitoring Unit in the Highway Data Services Bureau, and the Regions of NYSDOT, use the following equipment for 72-hour and seven day traffic volume, vehicle classification, and speed data collection:

Diamond Traffic Products, models Unicorn & Phoenix
International Traffic Corporation, models TRS & Mini-TRS
Metrocount, model 5600

The Highway Data Services Bureau and all NYSDOT Regions use TRAFMAN (Diamond Traffic Products), Road Reporter (International Traffic Corporation), and Traffic Executive (Metrocount) software to read traffic count data from electronic counters and create the required output format files.

A description of each field plus sample outputs for volume, vehicle classification, speed classification, and length classification formats are provided in this section. Questions regarding the selection of appropriate codes and values for data fields may be directed to either the Regional Planning Office or the Highway Data Services Bureau, in Albany, New York.

The appropriate office of the New York State Department of Transportation, noted below, should be contacted for detailed instructions when necessary to properly create the output format.

Traffic Monitoring Program Contacts

REGION #	TELEPHONE #	REGION#	TELEPHONE #
1	(518) 388-0425	7	(315) 785-2357
2	(315) 793-2691	8	(845) 431-7906
3	(315) 428-4832	9	(607) 721-8273
4	(585) 272-3419	10	(631) 952-6117
5	(716) 847-3580	11	(718) 482-4578
6	(607) 324-8414	Main Office	(518) 457-7203

Presented below are the header fields for the various traffic data files that may be edited, and the associated codes that may be used.

***Please consider this annotations in the following text:
Indicates data obtained from Traffic Count Header Files.***

Field Name

Field Description

Key Name

The name of the file to which the traffic data will be written. This field reflects the Site Reference (ID) number used when the counter is placed in the field, represented by Region/County and 4-digit station number plus federal direction code and lane code of the first count channel.

Date Created

Date file was written (Date counter/module was dumped).

Site Reference

A 6-digit code which is derived from the first 6 digits of the Key Name, according to the following rules:

Position 1: NYSDOT Region Code

Position 2: NYSDOT County Code

Positions 3-6: Station Number

Position 3 (refer to Attachment A for description of series):

Code 0, 1, or 8 stations are described in the master header file

Code 2 through 7 stations are described in the regional header file

Code 9 stations are not available in the header files. These are manually processed stations relying on user supplied information.

Position 4-6 contains a unique highway section identifier within the position 3 series for each county

Recording Start Date

Month/Day/Year format. Date corresponding to first line of data.

Recording Start Hour

Hour (00:00) format. Traffic data corresponding to the first partial hour is not recorded. The first recorded (saved) interval always starts at the top of the hour (i.e., recorded minute values are always zero), regardless of recording mode or interval length configurations.

Counter Operator

A 3 character user code identifying the person setting out the counter.

Route No.

This field must be edited as follows for state touring routes:

pos. 1-3 = numeric part of route number, right justified, blank filled

pos. 4 = alphabetic part of route number (if any) or blank - no other entry is permitted in this position

Route Signing Code which best represents the manner the highway segment is signed (i.e. Route #) with markers.

0 Not Signed	4 Off Int. Bus. Marker	7 Municipal
1 Interstate	5 County	8 Parkway/Forest Rte
2 U S	6 Town	9 Other Signed
3 N Y		

End Milepoint If the count section is not in the header files, this value is obtained from the Regional Planning Office.

Reference Marker This field contains the reference marker, if applicable, describing the 0.1 mile section where the counter is placed. A value is only included if different from the prior count for the station. If no difference in this value occurs, or a reference marker is not applicable at the location, this field is left **BLANK**. Coding of this 12 digit value is as shown on the reference marker, including blanks.

Factor Group Must be a valid Factor Group code (i.e., 29, 30, 31, 39, 40, 41, 59, 60, or 61).

Functional Class This field must be coded using the functional classifications given below:

R	01	Principal Arterial – Interstate		U	11	Principal Arterial – Interstate
U	02	Principal Arterial – Other		R	12	Principal Arterial Other Freeways & Expressways
R	06	Minor Arterial		B	14	Principal Arterial – Other
A	07	Major Collector		A	16	Minor Arterial
L	08	Minor Collector		N	17	Collector
	09	Local			19	Local

BIN This field is coded with the Bridge Identification Number of a bridge on that highway section, if applicable. Otherwise, it is left blank.

From-To Beginning and Ending Description of this highway section. If not defined in a header file (i.e. a 9xxx station), the descriptions are manually entered. For example, beginning description: Easy St., ending description: 84I.

Road Number Blank if On-State Touring Route station. If on a local road, this is an administrative number. If the local jurisdiction code = 4, the Road Number represents the County Highway Number.

Direction of Channels NYS Traffic count direction code. The appropriate direction codes are noted below.

NYS Direction of Travel Codes

Federal Direction of Travel Codes

- | | |
|--|------------------------|
| 1 North or East (Dir.1 must accompany a Dir. 2 count) | 1 North |
| 2 South or West (Dir.2 must accompany a Dir.1 count) | 3 East |
| 3 Total count, both directions, or 1-way streets & ramps. | 5 South |
| 4 North or East (opposite direction exists, but not counted) | 7 West |
| 5 South or West (opposite direction exists, but not counted) | 9 North-South Combined |
| 6 North or East (partial one direction - lane count) | 0 East-West Combined |
| 7 South or West (partial one direction - lane count) | |

Lane Number

1-9 Individual Lanes being monitored (by direction, from right to left in direction of travel)

One lane in a direction - travel lane = 1.

Two lanes in a direction - travel lane = 1, passing lane = 2.

Three lanes in a direction - travel lane = 1, center lane = 2, passing lane = 3.

Four lanes in a direction - travel lane = 1, first center lane = 2, second center lane = 3, passing lane = 4 (or higher).

0 Multi lanes (Not to be used with vehicle classification counts; these MUST be taken by individual lane).

Counter No. Four digit serial number on the recorder.

Module No. Last four digits of the serial numbers on the module (for machines that utilize a module)

Recorder Loc. Description of the specific placement of the recorder. This description lists the two intersecting streets between which the recorder was located or a distance reference from the nearest intersection (by direction). It is NOT a repeat of the road/street name on which the count is taken.

All file formats represents sequential, ASCII disk files.

VOLUME COUNT FORMAT (<KEYNAME>.VOL)

"4.00","13004030"," 1/30/03","130040","12/ 3/02","13:00","ATP","12/7/02","08:05"
" 81 ","1","0211697"," 81 13011063","40","02","0154","123456A","6666","0","87654321"," "
"RT 32 GREENVILLE ","HIGH HILL RD ","0330","Farm to Market ","0519","0","4 "
"1","14","2","00:60","01"
"3"," ","1234","6543","50 FT SOUTH OF ELM ST. ","0"," "," 1"
"NOTES ON CHANNEL A "
" "

06810737080209680961074805980445039802650161*

007000530041004200410079035307910663052405870671063806890758087809490918073006430479048402470164*

009200430022001800320075034107600661048405200564058006180720079909260970070605930460041202440189*

006100560030002500340083033407950661049704870609062706400766083709340919075706150460041602460208*

00950042003900300038007903510704 *

xxxx

Description of Header Fields in Volume Output File example:

Record 1

1-6	"4.00"	- Current Output Format Version Number
8-17	"13004030"	- 'Keyname' Output disk Filename (.VOL assumed)
19-28	" 1/30/03"	- Date this file was created
30-37	"130040"	- Site Ref. Number, see pg. 9
39-48	"12/ 3/02"	- Date corresponding to first traffic data record.
50-56	"13:00"	- Recording Start Hour. See page 9.
58-62	"ATP"	- Operator's Initials
64-73	"12/ 7/02"	- Date Recorder stopped counting
75-81	"08:05"	- Time Recorder stopped counting

Record 2

1-6 #	" 81 "	- Route Number
8-10 #	"1"	- Route Signing
12-20 #	"0211697"	- End Milepoint
22-35	" 81 13011063"	- Reference Marker (Milepost)
37-40 #	"40"	- Factor Group
42-45 #	"02"	- Functional Class
47-52 #	"0154"	- Section Length
54-62 #	"123456A"	- Bridge Identification Number
64-69	"6666"	- Continuous Count Station Number
71-73	"0"	- Header Data Flag
75-84 #	"87654321"	- HPMS Sample Number
86-94 #	" "	- Railroad Crossing Number

Record 3

1-30 #	"RT 32 GREENVILLE"	- Section Beginning Description.
32-61 #	"HIGH HILL RD"	- Section End Description
63-67 #	"0330"	- Road Number
70-86 #	"Farm to Market "	- Road or Street Name
88-93 #	"0519"	- Geographic Code
95-97 #	"0"	- NHS code
99-102 #	"4 "	- Local Jurisdiction

Record 4

1-3	"1"	- Number of Channels
5-8	"14"	- Equipment Recording Mode
10-12	"2"	- 1=Vehicles, 2=Axles
14-20	"00:60"	- Recording Time Interval
22-25	"01"	- # Data Values per Recording Interval

Record 5

1-3	"3"	- Direction Channel A
5-7	" "	- Direction Channel B, N/A this case
9-14	"1234"	- Recorder Serial Number
16-21	"6543"	- Module Serial Number
23-52	"50 FT SOUTH OF ELM ST. "	- Specific Recorder Placement
54-56	"0"	- Federal Dir Code, Chan A
58-60	" "	- Federal Dir Code, Chan B
62-65	" 1"	- Total lanes in this direction

Record 6
1-52 "NOTES ON CHANNEL A "

Record 7
1-52 " " - NOTES ON CHANNEL B, N/A this case
If Channel B applicable, field would hold 50
character description as in Record 6 above.

- Indicates that the data item came from the Traffic Count Header File.

The subsequent data records are the hourly interval data records. Each record represents one day's worth of counts (midnight to midnight) per channel.

Each Record = 24 hourly Interval counts
Each Interval = 4 digits

The first data record represents counts taken on 12/3/85. In the example the interval count for starting hour 13 (13:00 - 14:00) was the first complete interval recorded, therefore, the first interval for which data was written to the output file. The first recorded interval always starts at the top of the hour, regardless of interval length recording configuration. The illustration shown is for a single channel count, therefore, subsequent records represent successive calendar days of 24 hourly interval counts. If this was a two channel count, the second record would be counts for channel #2 on 12/3/85 (i.e., each day would be represented by every two records worth of data.

The last character of each data record is an asterisk "*".

The last record in the file is always "xxxx", left justified.

AXLE CLASSIFICATION COUNT FORMAT (<KEYNAME>.AXL)

```
"4.00","75003131","10/16/02","750031","10/ 4/02","13:00","ATP","10/ 7/02","10:05"
" 11B","2","0110123"," 11B75011005","30","16","0123","123456A","      ","0","87654321","      "
"RT 11 POTSDAM          ","POTSDAM E LN          ","0330","Farm to Market ","0519","0","4 "
"1","44","1","00:60","14"
"1"," " ,"4649","1041","REC PLACED HERE          ","3"," " ," 1"
"3"," " ,"1"," " ,"P"," " "
"NOTES ON CHANNEL A          "
" "
```

```
0143,0000,0102,0029,0000,0006,0002,0001,0002,0001,0000,0000,0000,0000, Interval 1 pm - 2 pm
0186,0000,0131,0035,0001,0008,0003,0000,0004,0003,0001,0000,0000,0000,
0217,0000,0171,0033,0003,0004,0004,0000,0002,0000,0000,0000,0000,0000,
0242,0001,0176,0058,0001,0003,0001,0001,0000,0001,0000,0000,0000,0000,
0197,0003,0151,0026,0000,0009,0000,0000,0002,0006,0000,0000,0000,0000,
0138,0001,0091,0034,0004,0006,0000,0000,0002,0000,0000,0000,0000,0000,
0108,0000,0093,0014,0000,0000,0000,0000,0000,0001,0000,0000,0000,0000,
0086,0000,0072,0010,0000,0003,0000,0000,0000,0001,0000,0000,0000,0000,
0087,0001,0072,0013,0000,0000,0000,0000,0000,0000,0000,0001,0000,0000,
0048,0000,0040,0008,0000,0000,0000,0000,0000,0000,0000,0000,0000,0000,
0038,0000,0027,0009,0001,0001,0000,0000,0000,0000,0000,0000,0000,0000,
0018,0000,0014,0004,0000,0000,0000,0000,0000,0000,0000,0000,0000,0000, e.g., 24 Hours
0009,0000,0008,0001,0000,0000,0000,0000,0000,0000,0000,0000,0000,0000,
0006,0000,0003,0001,0000,0000,0001,0000,0000,0001,0000,0000,0000,0000,
0003,0000,0001,0000,0000,0001,0000,0000,0000,0001,0000,0000,0000,0000,
0020,0000,0015,0004,0000,0000,0000,0000,0000,0001,0000,0000,0000,0000,
0025,0000,0008,0011,0000,0001,0002,0000,0000,0002,0000,0001,0000,0000,
0047,0000,0031,0011,0001,0002,0001,0000,0001,0000,0000,0000,0000,0000,
0090,0000,0055,0022,0003,0002,0001,0000,0001,0005,0000,0001,0000,0000,
0114,0000,0073,0026,0002,0005,0001,0000,0001,0006,0000,0000,0000,0000,
0090,0000,0054,0025,0002,0004,0003,0000,0002,0000,0000,0000,0000,0000,
0138,0000,0096,0021,0001,0009,0002,0000,0005,0004,0000,0000,0000,0000,
0128,0000,0089,0027,0000,0004,0003,0000,0003,0002,0000,0000,0000,0000,
0134,0000,0103,0018,0001,0005,0003,0000,0003,0001,0000,0000,0000,0000,
xxxx
```

Total	1	2	3	4	5	6	7	8	9	10	11	12	13	
Hourly					B I N S									
Volume														

Description of Header Fields in Axle Classification Output File Example:

	Record 1	
Pos		
1-6	"4.00"	- Current Output Format Version Number
8-17	"75003131"	- 'Keyname' Output disk Filename (.AXL assumed)
19-28	"10/16/02"	- Date this file was created
30-37	"750031"	- Site Ref. Number, see pg. 9
39-48	"10/ 4/02"	- Date corresponding to first traffic data record.
50-56	"10:05"	- Recording Start Hour. See page 9.
58-62	"ATP"	- Operator's Initials
64-73	"10/ 7/02"	- Date Recorder stopped counting
75-81	"08:05"	- Time Recorder stopped counting
	Record 2	
1- 6 #	" 11B"	- Route Number
8-10 #	"2"	- Route Signing
12-20 #	"0110123"	- End Milepoint
22-35	" 11B75011005"	- Reference Marker (Milepost)
37-40 #	"30"	- Factor Group
42-45 #	"16"	- Functional Class
47-52 #	"0123"	- Section Length
54-62 #	"123456A"	- Bridge Identification Number
64-69	" "	- Continuous Count Station Number
71-73	"0"	- Header Data Flag
75-84 #	"87654321"	- HPMS Sample Number
86-94 #	" "	- Railroad Crossing Number
	Record 3	
1-30 #	"RT 11 POTSDAM"	- Section Beginning Description.
32-61 #	"POTSDAM E LN"	- Section End Description
63-67 #	"0330"	- Road Number
70-86 #	"Farm to Market "	- Road or Street Name
88-93 #	"0519"	- Geographic Code
95-97 #	"0"	- NHS code
99-102 #	"4 "	- Local Jurisdiction
	Record 4	
1- 3	"1"	- Number of Channels
5- 8	"44"	- Equipment Recording Mode
10-12	"1"	- 1=Vehicles, 2=Axles
14-20	"00:60"	- Recording Time Interval
22-25	"14"	- # Data Values per Recording Interval
	Record 5	
1- 3	"1"	- Direction Channel A (NYS Code)
5- 7	" "	- Direction Channel B (NYS Code, N/A this case)
9-14	"4649"	- Recorder Serial Number
16-21	"1041"	- Module Serial Number
23-52	"REC PLACED HERE"	- Specific Recorder Placement
54-56	"3"	- Federal Dir Code, Channel A
58-60	" "	- Federal Dir Code, Channel B
62-65	" 1"	- Total lanes in this direction
	Record 6 (Present for all classification counts only)	
1- 3	"3"	- Federal Directional Code, Channel A
5- 7	" "	- Federal Directional Code, Channel B (N/A here)
9-11	"1"	- Lane Code Channel A (0 = Multiple, 1-9 = Lane #)
13-15	" "	- Lane Code Channel B (0 = Multiple, 1-9 = Lane #)
17-19	"P"	- (F)ull or (P)artial direction, Channel A
21-23	" "	- (F)ull or (P)artial direction, Channel B

	Record 7	
1-52	"NOTES ON CHANNEL A	"
	Record 8	
1-52	" "	- Notes on Channel B, N/A this case

- Indicates that the data item may be available in the Traffic Count Header File.

The subsequent data records are organized such that each record represents one full interval's data. In the example the interval count for starting hour 13 (1:00 p.m. - 2:00 p.m.) was the first complete interval recorded, therefore, the first interval for which data was written to the output file. The first recorded interval always starts at the top of the hour, regardless of interval length recording configuration. The number of count bins for each record is given by the last data item in record 4 (# Data Values per Recording Interval). The first bin count represents the total volume for that interval, subsequent counts are bin counts corresponding to the axle classifications used (in this case, FHWA's Scheme F).

If this was a two channel count, the first record would represent interval 1, channel 1 and the second record represents interval 1, channel 2.

The last character of each BIN field is a comma ",".

The last record in the file is always "xxxx", left justified.

SPEED CLASSIFICATION COUNT FORMAT (<KEYNAME>.SPD)

```
"4.00","33008231","11/15/02","330082","10/27/02","14:00","ATP","10/29/02","10:50"
" 5 ","2","0811053"," 5 33081295","30","12","0155","123456A"," ","0","87654321"," "
"RT 174 CAMILLUS          ","JCT NEWPORT RD          ","0330","Farm to Market ","0519","0","4 "
"1","24","1","00:60","14"
"1"," ","4321","6178","REC PLACED HERE          ","3"," ","1"
"3"," ","1"," ","P"," ","55"
"030","035","040","045","050","055","060","065","070","075","080","085","999"
"RT 5 SPEED 1STQTR89 - EB TRAVEL LANE          "
" "
```

```
0263,0000,0000,0000,0000,0000,0000,0001,0005,0031,0097,0095,0031,0003,
0267,0000,0000,0000,0000,0000,0000,0001,0000,0012,0037,0081,0093,0038,0005,
0315,0000,0000,0000,0000,0000,0001,0000,0000,0009,0032,0100,0123,0047,0003,
0303,0000,0000,0000,0000,0000,0000,0001,0006,0034,0081,0136,0037,0008,
0287,0000,0000,0000,0000,0000,0000,0001,0007,0049,0111,0088,0027,0004,
0284,0000,0000,0000,0000,0000,0002,0002,0009,0064,0109,0081,0016,0001,
0165,0000,0000,0000,0000,0000,0000,0001,0010,0023,0069,0051,0009,0002,
0185,0000,0000,0000,0000,0001,0000,0001,0008,0055,0061,0047,0011,0001,
0150,0000,0000,0000,0000,0000,0000,0003,0004,0025,0055,0051,0009,0003,
0133,0000,0000,0000,0000,0000,0002,0001,0006,0032,0036,0039,0015,0002,
0077,0000,0000,0000,0000,0000,0000,0000,0002,0020,0020,0024,0011,0000,
0026,0000,0000,0000,0000,0000,0000,0000,0000,0005,0008,0008,0005,0000,
0016,0000,0000,0000,0000,0000,0000,0000,0001,0005,0002,0008,0000,0000,
0017,0000,0000,0000,0000,0000,0000,0000,0001,0004,0005,0004,0003,0000,
0026,0000,0000,0000,0000,0000,0000,0001,0005,0010,0008,0002,0000,
0065,0000,0000,0000,0000,0000,0000,0001,0002,0009,0022,0024,0006,0001,
0113,0000,0000,0000,0000,0000,0000,0001,0003,0019,0042,0038,0010,0000,
0176,0000,0000,0000,0000,0000,0001,0000,0004,0015,0055,0068,0026,0007,
0225,0002,0000,0000,0000,0000,0000,0002,0004,0025,0041,0100,0040,0011,
0234,0001,0000,0000,0000,0000,0000,0001,0002,0015,0078,0089,0041,0007,
0264,0000,0000,0000,0000,0000,0001,0001,0006,0042,0093,0087,0028,0006,
0293,0000,0000,0000,0000,0001,0003,0003,0009,0044,0098,0102,0028,0005,
0328,0000,0000,0000,0000,0000,0000,0000,0005,0036,0123,0123,0038,0003,
0256,0000,0000,0000,0000,0000,0000,0002,0006,0034,0093,0097,0019,0005,
0225,0000,0000,0000,0000,0000,0001,0000,0004,0032,0065,0084,0032,0007,
0234,0000,0000,0000,0000,0000,0002,0002,0008,0037,0069,0082,0031,0003,
xxxx
```

e.g., 24 Hours

```
Total      1      2      3      4      5      6      7      8      9     10     11     12     13
Hourly
Volume      B I N S
```

Description of Header Fields in Speed Classification Output File Example:

	Record 1	
1- 6	"4.00"	- Current Output Format Version Number
8-17	"33008231"	- Output disk Filename (.SPD assumed)
19-28	"11/15/02"	- Date this file was created
30-37	"330082"	- Site Ref. Number, see pg. 9
39-48	"10/27/02"	- Date corresponding to first traffic data record.
50-56	"14:00"	- Recording Start Hour. See page 9.
58-62	"ATP"	- Operator's Initials
64-73	"10/29/02"	- Date Recorder stopped counting
75-81	"10:50"	- Time Recorder stopped counting
	Record 2	
1- 6 #	" 5 "	- Route Number
8-10 #	"2"	- Route Signing
12-20 #	"0811053"	- End Milepoint
22-35	" 5 33081295"	- Reference Marker (Milepost)
37-40 #	"30"	- Factor Group
42-45 #	"12"	- Functional Class
47-52 #	"0155"	- Section Length
54-62 #	"123456A"	- Bridge Identification Number
64-69	" "	- Continuous Count Station Number
71-73	"0"	- Header Data Flag
75-84 #	"87654321"	- HPMS Sample Number
86-94 #	" "	- Railroad Crossing Number
	Record 3	
1-30 #	"RT 174 CAMILLUS"	- Section Beginning Description.
32-61 #	"JCT NEWPORT RD"	- Section End Description
63-67 #	"0330"	- Road Number
70-86 #	"Farm to Market "	- Road or Street Name
88-93 #	"0519"	- Geographic Code
95-97 #	"0"	- NHS code
99-102 #	"4 "	- Local Jurisdiction
	Record 4	
1- 3	"1"	- Number of Channels
5- 8	"24"	- Equipment Recording Mode
10-12	"1"	- 1=Vehicles, 2=Axles
14-20	"00:60"	- Recording Time Interval
22-25	"14"	- # Data Values per Recording Interval
	Record 5	
1- 3	"1"	- Direction Channel A (NYS Code)
5- 7	" "	- Direction Channel B (NYS Code, N/A this case)
9-14	"4321"	- Recorder Serial Number
16-21	"6178"	- Module Serial Number
23-52	"REC PLACED HERE"	- Specific Recorder Placement
54-56	"3"	- Federal Direction Code, Channel A
58-60	" "	- Federal Direction Code; Channel B
62-65	" 1"	- Total lanes in this direction
	Record 6 (Present for all speed counts only)	
1- 3	"3"	- Federal Directional Code, Channel A
5- 7	" "	- Federal Directional Code, Channel B (N/A here)
9-11	"1"	- Lane Code Channel A (0 = Multiple, 1-9 = Lane #)
13-15	" "	- Lane Code Channel B (0 = Multiple, 1-9 = Lane #)
17-19	"P"	- (F)ull or (P)artial direction, Channel A
21-23	" "	- (F)ull or (P)artial direction, Channel B
25-28 #	"55"	- Posted Speed Limit

Record 7 (Present for all speed counts only)

	<50	50+	-	Posted Speed Limit (mph)
1- 5	"020"	"030"	-	High Speed Threshold, Bin 1
7-11	"025"	"035"	-	High Speed Threshold, Bin 2
13-17	"030"	"040"	-	High Speed Threshold, Bin 3
19-23	"035"	"045"	-	High Speed Threshold, Bin 4
25-29	"040"	"050"	-	High Speed Threshold, Bin 5
31-35	"045"	"055"	-	High Speed Threshold, Bin 6
37-41	"050"	"060"	-	High Speed Threshold, Bin 7
43-47	"055"	"065"	-	High Speed Threshold, Bin 8
49-53	"060"	"070"	-	High Speed Threshold, Bin 9
55-59	"065"	"075"	-	High Speed Threshold, Bin 10
61-65	"070"	"080"	-	High Speed Threshold, Bin 11
67-71	"075"	"085"	-	High Speed Threshold, Bin 12
73-77	"999"	"999"	-	High Speed Threshold, Bin 13

Record 8

1-52 "RT 5 SPEED 1STQTR89 - EB TRAVEL "

Record 9

1-52 " " - Notes on Channel B, N/A this case

- Indicates that the data item may be available in the Traffic Count Header File.

The subsequent data records are organized such that each record represents one full interval. In the example the interval count for starting hour 14 (2:00 p.m. - 3:00 p.m.) was the first complete interval recorded, therefore, the first interval for which data was written to the output file. The first recorded interval always starts at the top of the hour, regardless of interval length recording configuration. The number of count bins for each record is given by the last data item in record 4 (# Data Values per Recording Interval). The first bin count represents the total volume for that interval, subsequent counts are bin counts corresponding to the speed ranges used.

If this was a two channel count, the first record would represent interval 1, channel 1 and the second record represents interval 1, channel 2.

The last character of each BIN field is a comma ",".

The last record in the file is always "xxxx", left justified.

LENGTH CLASSIFICATION COUNT FORMAT (<KEYNAME>.LTH)

```
"4.00","11021831","10/26/90","110218","10/23/90","11:00","ATP","10/25/90","10:55"
" 85A","2","0110378"," 85A11011032","30","17","0071","123456A","      ","0","87654321","      "
"RT 156                                ","RT 155                                ","0330","Farm to Market ","0519","0","4 "
"1","28","1","00:60","05"
"1"," " ,"5432","4199","REC PLACED HERE                                ","3"," " ," 1"
"3"," " ,"1"," " ,"F"," " "
"RT 85A LENGTH CLASS - EB TRAVEL LANE                                "
" "
```

```
0163,0092,0054,0015,0002,
0179,0111,0064,0003,0001,
0205,0119,0077,0009,0000,
0253,0142,0100,0010,0001,
0327,0195,0118,0014,0000,
0539,0351,0177,0009,0002,
0525,0348,0170,0006,0001,
0345,0256,0084,0005,0000,
0238,0176,0057,0005,0000,
0160,0114,0045,0001,0000,
0146,0112,0034,0000,0000,      e.g., 24 Hours
0097,0070,0026,0000,0001,
0050,0038,0012,0000,0000,
0033,0024,0009,0000,0000,
0010,0009,0001,0000,0000,
0007,0006,0001,0000,0000,
0007,0004,0003,0000,0000,
0006,0003,0002,0001,0000,
0010,0006,0004,0000,0000,
0096,0040,0056,0000,0000,
0253,0154,0083,0014,0002,
0196,0094,0081,0021,0000,
0153,0073,0067,0012,0001,
0183,0085,0083,0012,0003,
0209,0091,0100,0016,0002,
0227,0128,0093,0006,0000,
0237,0146,0077,0011,0003,
xxxx
```

```
Total      1      2      3      4
Hourly      B I N S
Volume
```

Description of Header Fields in Length Classification Output File Example:

Pos	Record 1	
1- 6	"4.00"	- Current Output Format Version Number
8-17	"11021831"	- Output disk Filename (.LTH assumed)
19-28	"10/26/90"	- Date this file was created
30-37	"110218"	- Site Ref. Number, see pg. 9
39-48	"10/23/90"	- Date corresponding to first traffic data record
50-56	"11:00"	- Recording Start Hour. See page 9.
58-62	"ATP"	- Operator's Initials
64-73	"10/25/90"	- Date Module was removed from the Recorder
75-81	"10:55"	- Time Module was removed from the Recorder
	Record 2	
1- 6 #	" 85A"	- Route Number
8-10 #	"2"	- Route Signing
12-20 #	"0110378"	- End Milepoint
22-35	" 85A11011032"	- Reference Marker (Milepost)
37-40 #	"30"	- Factor Group
42-45 #	"17"	- Functional Class
47-52 #	"0071"	- Section Length
54-62 #	"123456A"	- Bridge Identification Number
64-69	" "	- Continuous Count Station Number
71-73	"0"	- Header Data Flag
75-84 #	"87654321"	- HPMS Sample Number
86-94 #	" "	- Railroad Crossing Number
	Record 3	
1-30 #	"RT 156"	- Section Beginning Description.
32-61 #	"RT 155"	- Section End Description
63-67 #	"0330"	- Road Number
70-86 #	"Farm to Market "	- Road or Street Name
88-93 #	"0519"	- Geographic Code
95-97 #	"0"	- NHS code
99-102 #	"4 "	- Local Jurisdiction
	Record 4	
1- 3	"1"	- Number of Channels
5- 8	"28"	- Equipment Recording Mode
10-12	"1"	- 1=Vehicles, 2=Axles
14-20	"00:60"	- Recording Time Interval
22-25	"05"	- # Data Values per Recording Interval
	Record 5	
1 -3	"1"	- Direction Channel A (NYS Code)
5 -7	" "	- Direction Channel B (NYS Code, N/A this case)
9-14	"5432"	- Recorder Serial Number
16-21	"4199"	- Module Serial Number
23-52	"REC PLACED HERE"	- Specific Recorder Placement
54-56	"3"	- Federal Direction Code, Channel A
58-60	" "	- Federal Direction Code, Channel B
62-65	" 1"	- Total lanes in this direction
	Record 6 (Present for all classification counts only)	
1- 3	"3"	- Federal Directional Code, Channel A
5- 7	" "	- Federal Directional Code, Channel B (N/A here)
9-11	"1"	- Lane Code Channel A (0 = Multiple, 1-9 = Lane #)
13-15	" "	- Lane Code Channel B (0 = Multiple, 1-9 = Lane #)
17-19	"F"	- (F)ull or (P)artial direction Channel A
21-23	" "	- (F)ull or (P)artial direction Channel B

Record 7
1-52 "RT 85A LENGTH CLASS - EB TRAVEL "

Record 8
1-52 " " - Notes on Channel B, N/A this case

- Indicates that the data item may be available in the Traffic Count Header File.

The subsequent data records are organized such that each record represents one full interval of data. In the example the interval count for starting hour 11 (11:00 a.m. - 12:00 p.m.) was the first complete interval recorded, therefore, the first interval for which data was written to the output file. The first recorded interval always starts at the top of the hour, regardless of interval length recording configuration. The number of count bins for each record is given by the last data item in record 4 (# Data Values per Recording Interval). The first bin count represents the total volume for that interval, subsequent counts are the bin counts corresponding to the length classification used.

If this was a two channel count, the first record would represent interval 1, channel 1 and the second record represents interval 1, channel 2.

The last character of each BIN field is a comma ",".

The last record in the file is always "xxxx", left justified.

APPENDIX C

Four Digit Station Numbers

- 0001-0999** Reserved for count stations on the touring route system. These stations are encountered in the Traffic Volume Report. Numbers for new stations are assigned by the Traffic Monitoring Unit. The Sufficiency file is the “keeper” of the numbers. For this series, the four-digit number is the pre 1998 three-digit number with a “0” in front. These stations are counted every three years.
- 1000-1999** Reserved for count stations located on off-touring route system HPMS samples (pre 1998 H, P, W and Z stations), Principal Arterials (PAS) and other National Highway system (NHS - pre 1998 N stations) sections. Numbers for new stations are assigned by the Traffic Monitoring Unit. The Local Highway Inventory (LHI) file is the “keeper” of the numbers. These stations are counted every three years.
- 2000-2999** Reserved for Main Office use.
- 3000-3999** Reserved for ITS stations that are not part of mainlines (i.e. ramps for which repeated counts will be taken)
- 4000-4999** This series is an extension of the 8000 series below. This series is available if you run out of 8000 numbers.
- 5000-5999** This series is an extension of the 9000 series below; no historical data will be kept for these stations.
- 6000-6999** Reserved for counts on local bridges that are not on a touring route. The Regional Header file is the “keeper” for these stations. These stations are counted every five years.
- 7000-7899** Reserved for counts at at-grade railroad crossings with highways other than a touring route. The Regional Header file is the “keeper” for these stations.
- 7900-7999** Reserved for counts at rest and parking areas. The Regional Header file is the “keeper” for these stations.
- 8000-8999** Other permanent station numbers (pre 1998 C, T, V and G stations) that do not qualify in the “0” and “1” series above. These typically are counts taken on local jurisdiction roads according to NYSDOT’s Engineering Instructions (EI). Numbers in this series are assigned for stations that will be counted repeatedly. Numbers for new stations are assigned by the Traffic Monitoring Unit. The Local Highway Inventory (LHI) file is the “keeper” of the numbers.
- 9001-9999** One time counts taken on sections that are not on any header file. These numbers can be reused every year. No historical data will be kept for these counts.

APPENDIX D

UTM DATA REPORT REQUIREMENTS

UTM DATA REPORT

gps rpt format.xls
6/4/2003

SAMPLE

UTM DATA REPORT

Region #: 5

FIPS COUNTY CODE	STATION NUMBER (4 numerals with leading zero's)	BEGINNING DATE OF COUNT	UTM COORDINATES		ROUTE NUMBER	ROAD NAME (if no route number)
			NORTHING	EASTING (Include leading zero)		
184	0018	5/15/2003	4563377	0602463	100	
027	0322	5/17/2003	4774657	0687225		Transit Rd.

FIPS County Codes
(FEDERAL INFORMATION PROCESSING STANDARDS)

Code	Name	Code	Name
001	Albany	063	Niagara
003	Allegany	065	Oneida
005	Bronx	067	Onondaga
007	Broome	069	Ontario
009	Cattaraugus	071	Orange
011	Cayuga	073	Orleans
013	Chautauqua	075	Oswego
015	Chemung	077	Otsego
017	Chenango	079	Putnam
019	Clinton	081	Queens
021	Columbia	083	Rensselaer
023	Cortland	085	Richmond
025	Delaware	087	Rockland
027	Dutchess	089	St. Lawrence
029	Erie	091	Saratoga
031	Essex	093	Schenectady
033	Franklin	095	Schoharie
035	Fulton	097	Schuyler
037	Genesee	099	Seneca
039	Greene	101	Steuben
041	Hamilton	103	Suffolk
043	Herkimer	105	Sullivan
045	Jefferson	107	Tioga
047	Kings	109	Tompkins
049	Lewis	111	Ulster
051	Livingston	113	Warren
053	Madison	115	Washington
055	Monroe	117	Wayne
057	Montgomery	119	Westchester
059	Nassau	121	Wyoming
061	New York	123	Yates