

**NEW MEXICO STATE
TRAFFIC MONITORING
STANDARDS
2014**



NEW MEXICO DEPARTMENT OF TRANSPORTATION

PLANNING DIVISION

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NEW MEXICO STATE TRAFFIC MONITORING STANDARDS CALENDAR YEAR 2014

Introduction

What follows are New Mexico's State Traffic Monitoring Standards (NMSTMS) to be used for all New Mexico Traffic Monitoring activities. The standards were first implemented on October 1, 1988. They continue to be reviewed and refined on a three-year basis, or as required, by the Traffic Monitoring Standards Review Committee.

Standards review meetings are convened on a three-year basis, or as required. Transportation planners, engineers, analysts, and other interested participants from a variety of public and private organizations take part in the review. Participating organizations include the New Mexico Department of Transportation (NMDOT); Metropolitan Planning Organizations (MPO); Regional Transportation Planning Organizations (RTPO); County and Municipal agencies; Consulting Engineering and Planning firms; and Computer Software Development firms.

The recommendations from the review are evaluated and finalized as standard practice by the New Mexico Department of Transportation, in cooperation with the Federal Highway Administration.

MPO's, RTPO's, and County and Municipal agencies to receive state or federal funding, will conduct Traffic Monitoring in compliance with the NMSTMS.

It is the responsibility of the NMDOT in conjunction with the Federal Highway Administration (FHWA) to provide the necessary resources to fulfill all requirements of the NMSTMS as approved.

For additional information, please call the Traffic Data Reporting Section of the NMDOT at 827-5529.

New Mexico State Traffic Monitoring Standards
List of Acronyms

1. AADT - Annual Average Daily Traffic
2. AADW - Annual Average Days of the Week
3. AASHTO - American Association of State Highway and Transportation Officials
4. AAWDT - Annual Average Weekday Traffic
5. AAWET - Annual Average Weekend Traffic
6. ASTM - American Society for Testing & Materials
7. AVC - Automatic Vehicle Classifiers
8. AVMT - Annual Vehicle Miles Travel
9. AVW - Automatic Vehicle Weights is data out of AWAC Sites
10. AWAC – Automatic Weight and Classification System
11. CCS- Continuous Count Stations (Previously known as ATR (Automatic Traffic Recorders)
12. DVMT - Daily Vehicle Miles Travel
13. ESAL - Equivalent Single Axle Loading
14. FHWA - Federal Highway Administration
15. GPS - Global Positioning System
16. HPMS - Highway Performance Monitoring System
17. LCF - Loop Correction Factors
18. MADT -Monthly Average Daily Traffic
19. MADW - Monthly Average Days of the Week
20. MAF – Monthly Adjustment Factor
21. MAWDT - Monthly Average Weekday Traffic

22. MAWET - Monthly Average Weekend Traffic
23. MCR - Monthly Classification Ratio
24. MPO - Metropolitan Planning Organization
25. MRCOG – Mid Region Council of Governments
26. MTR - Monthly Traffic Ratio
27. MUTCD – Manual on Uniform Traffic Control Devices
28. MWR - Monthly Weight Ratio
29. NAAQS – National Ambient Air Quality Standards
30. NMDOT - New Mexico Department of Transportation
31. NMSTMS - New Mexico State Traffic Monitoring Standards
32. RTPO - Regional Transportation Planning Organization
33. RWIM - Roadway Weigh-In-Motion
34. SHRP - Strategic Highway Research Program
35. TIMS – Transportation Information Management System
36. TMG – Traffic Monitoring Guide
37. TMS - Traffic Monitoring System
38. TRADAS – Traffic Data System
39. VMT - Vehicle Miles of Travel

Traffic Monitoring Standards

Scope and Review

1.0 Conformity Requirement--Traffic monitoring by any Public or Private Entity, required in order to satisfy these standards, presented concerning a proposal for state or federal roadway funding, conducted in association with a project along a roadway administered by the New Mexico Department of Transportation (NMDOT) or Federal Highway Administration (FHWA), will be in compliance with the current New Mexico State Traffic Monitoring Standards (NMSTMS).

1.1 Default Standards--The national traffic monitoring standards adopted by the American Association of State Highway and Transportation Officials (AASHTO), the American Society for Testing and Materials (ASTM) and, FHWA 23CFR500 TMS/H requirements, Traffic Monitoring Guide (TMG), Highway Performance Monitoring System (HPMS) Field Manual Appendix Chapter 5.3, will be the default standards of the state of New Mexico if the national standards address issues which are not covered by the NMSTMS. The resolution of conflicts between the New Mexico Standards and national standards will be made by the New Mexico State Traffic Monitoring Review Committee upon review of the national standards or at the request of the NMDOT.

1.2 One-Year Review--The NMSTMS will be reviewed on a one-year basis, or as required. The review will be conducted prior to November 30 of that year. Participation in the review will be open to all New Mexico traffic monitoring professionals in both the public and private sectors. Recommended revisions to the standards will be presented for adoption to the NMDOT, in cooperation with the FHWA.

1.3 Host of Standards Review--The standards review will be hosted and chaired on a rotating basis. The rotation will be by category of organizations represented by review participants. The categories of participating organizations in order of rotation are:

- New Mexico Department of Transportation
- Metropolitan Planning Organizations
- Regional Transportation Planning Organizations
- Private sector firms
- City and county governmental agencies.

During each review, participants will nominate the host organization for the next review year. The host agency or firm will be nominated from the next review year's rotation, and must be participating in the current review year. If accepting the nomination, the host organization will identify the staff person who will serve as Chairperson of the review. If no organization is nominated, or if the nominated organization declines, the NMDOT will host the review.

1.4 Minutes of Review--The Host Organization will provide a Recorder. The Recorder will be responsible for maintaining minutes of the meeting, which will guide the NMDOT in finalizing revisions to the NMSTMS.

2.0 Computerized Data--Standard compliant traffic monitoring by the NMDOT, MPO's/RTPO's, county and municipal governmental agencies, and private consulting engineering and planning firms, will utilize a computerized data format as approved by the NMDOT for electronic transmission of all traffic data.

2.1 Formats and Websites--Refer to online sites for information:

FHWA <http://www.fhwa.dot.gov/index.html>

TMG <http://www.fhwa.dot.gov/ohim/tmguid/index.htm>

HPMS <http://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/>

NM State Traffic Monitoring Standards 2011/2013

<http://www.dot.state.nm.us/content/nmdot/en/Planning.html>

Traffic Monitoring Site Identification

3.0 Traffic summary statistics are to be reported by unique traffic sections, which have homogeneous traffic characteristics by unique intersection identification. Location identification for each report will be based on the NMDOT's Transportation Information Management System (TIMS). TIMS identification is based on Traffic Section ID which includes the route number, direction, cumulative mile point, link and termini.

3.1 **GOAL** If a Global Positioning System (GPS) locating reference is used, the Traffic Data System (TRADAS) is designed to accept based latitude, and longitude, the format used is NAD83 UTM13 Zone coordinate system.

4.0 **GOAL** A map of roadways accompanied by a listing of TIMS unique traffic section identifiers will be prepared by the NMDOT and shall be provided on an annual basis no later than January 31 of each year to the MPO's and by request to the Municipalities through the NMDOT Traffic Monitoring Unit.

5.0 **GOAL** If Global Positioning System (GPS) site identification is used for location of a traffic monitoring activity, the computer format for GPS site identification must be identical to that required by the NMDOT's TRADAS. Use the NAD83 UTM13 Zone coordinate system. The department must also have on record the receiver manufacturer and model used for global positioning with device precision under existing field conditions.

GPS site identification may be used for traffic monitoring activity if the count location, +/- device error, does not exceed the termini of the unique traffic sections or road link on which traffic is being monitored.

Unique Traffic Sections

7.0 Each unique traffic section by factor groups will be determined by the NMDOT for all state roads excluding local roads within the boundaries which represent a MPO's, RTPO's and Municipalities planning and data collection jurisdiction as agreed upon by the MPO/RTPO/Municipality and the NMDOT.

8.0 Each unique traffic section by factor groups will be determined for roads within the boundaries which represent a MPO's, RTPO's and Municipalities planning and data collection jurisdiction by the individual MPO/Municipality.

8.1 Each unique traffic section shall be placed into TIMS. Coordination between State and MPO/RTPO/Municipality shall identify each traffic section.

9.0 If two values of the same traffic volume summary statistic, at two locations within a traffic section, have a volume difference which exceeds ten percent of the sum of the two volumes or 500 AADT on traffic sections with an AADT of less than 5,000, the original traffic section shall be divided into two unique traffic sections.

9.5 If contiguous unique traffic sections have a volume difference less than ten percent of the sum of the two volumes or 500 AADT on traffic sections with an AADT of less than 5,000, the traffic section may be combined into a single traffic section for traffic volume flow analysis.

10.0 If two Equivalent Single Axle Loading (ESAL) summary statistics within a traffic section have an equivalent loading difference, which exceeds ten percent of the sum of the two ESALs, the original traffic section shall be divided into two unique traffic sections.

10.5 If contiguous unique traffic sections have an ESAL difference less than ten percent of the sum of the two ESALs, the traffic sections may be combined into a single traffic section.

Traffic Monitoring Truth-In-Data

12.0 Missing or inaccurate raw traffic data may not be completed, filled in, or replaced for any type of traffic count, at any location, under any circumstance. All raw data will be transmitted to the NMDOT Traffic Monitoring System.

13.0 Annual traffic volume summary statistics presented or reported by the NMDOT, MPO's, RTPO's, county and municipal governmental agencies and private consulting engineering and planning firms must include a interval and must be one of the three standard units of annual traffic volume measurement (AADT, AAWDT or AAWET). Traffic summary statistics defined by the NMSTMS and presented or recorded for other periods, such as monthly average days of the week, will be clearly labeled. Unadjusted raw traffic count data to which the

NMSTMS apply must be counted in compliance with the NMSTMS and have the notation: "Unadjusted Count Data, Not For Use as Standard Traffic Volume Summary".

14.0 **GOAL** In rural, small urban, and collective urbanized areas, the sample sizes are based on a 90-5 precision level for the volume groups of the principal arterial system, 90-10 for the minor arterial system, and 80-10 for the collector (excluding minor collector) systems. The sample for individually sampled urbanized areas is broken into two major categories of precision levels:

For individual urbanized areas with a population of 200,000, or more, and those that are in an NAAQS non-attainment area, the design precision levels are 90-10 for the arterial systems and 80-10 for the collector system.

For urbanized areas that are less than 200,000 populations and are individually sampled, the design precision levels for individual volume strata are 80-10 or 70-15, depending upon the number of urbanized areas designated as individual sampling areas (at the State's option). Those States with less than three designated individual urbanized areas will use a precision level of 80-10 for all factor groups which are grouped by functional classification, while those with three or more may use the lower precision level of 70-15 for the minor arterial and collector systems and 80-10 for the principal arterial systems thereby requiring a smaller number of samples.

The statewide summation of individual urbanized factor groups, which are grouped by functional classification data element estimates will result in an overall precision level of at least 80-10.

14.1 **GOAL** For each new installation of a permanent Continuous Count Stations (CCS) we have initiated that a Special Provision specification must be met. The special provision requires that the installed device meet an accuracy level of:

- A. +/- 2% of the CCS traffic count comparison to a manual traffic count.
- B. +/- 10% of the CCS traffic classification comparison to a manual traffic classification count.
- C. For weight data collection the device must be within +/- 5% of five known vehicle weight passes.

The Special Provisions also provide that the Contractor responsible for the installation of the device be separate than the licensed engineer who conducts the manual count and must certify the comparison accuracies.

Traffic Data Summarization

15.0 The three standard units of traffic volume measurement and summarization are as follows:

Annual Average Daily Traffic (AADT), which represents traffic over a seven-day week;

Annual Average Weekday Traffic (AAWDT), which represents traffic over the typical work day period, Monday 00:01 through Friday 24:00 (coverage counts), Monday 00:01 through Thursday 24:00 (CCSs); and

Annual Average Weekend Traffic (AAWET), which represents traffic over the weekend period, Saturday 00:01 through Sunday, 24:00 (coverage counts), Saturday 00:01 through Sunday 24:00 (CCSs).

00:01 = Midnight to 12:15 A.M.

24:00 = 11:45 P.M. to Midnight

16.0 CCSs, Automatic Vehicle Classifiers (AVCs), and Automatic Weight and Classification System (AWAC) are the permanent devices used to collect traffic volume data. Traffic volume summary statistics for data collected by permanent traffic recording devices are as follows:

MADW = Monthly Average Day of the Week = the sum of all daily volumes for each day of the week, Sunday through Saturday, over the course of a month divided by the number of days of standard compliant data for that day during the month. This will produce an average for each day of the week for that month.

AADW = Annual Average Day of the Week = the sum of MADWs for a year, for each day of the week, Sunday through Saturday/12. This will produce an annual average for each day of the week.

MADT	=	sum of MADWs/7
AADT	=	sum of MADTs/12
MAWDT	=	sum of MADWs for Monday through Friday/the number of days of standard compliant data during the month
AAWDT	=	sum of MAWDTs/12
MAWET	=	sum of MADWs for Saturday through Sunday/2
AAWET	=	sum of MAWETs/12
MTR	=	the monthly traffic ratio = average traffic volume/annual average traffic volume. This ratio may be calculated for each of the volume summary statistics. The sum of the MTR's taken over the twelve months divided by 12 equals 1.00
MAF	=	the monthly adjustment factor = 1/MTR = the adjustment factor for a given month which will convert monthly data to annual average data

17.0 Monthly Traffic Adjustment Factors and Monthly Traffic Ratios for a factor group are calculated using data from the permanent devices within that factor group for a given count year.

The agency with jurisdiction may elect to use permanent device data from additional factor groups, if necessary, due to insufficient data, based on professional judgment. The requirements for included devices are:

For MADW,	a minimum of 2 occurrences of each day of the week is required.
For AADW,	all 12 MADWs
For MADT,	all 7 MADWs
For MAWDT,	all 5 MADWs
For MAWET,	all 2 MADWs
For AADT,	all 12 MADTs
For AAWDT,	all 12 MAWDTs
For AAWET,	all 12 MAWETs

17.5 Step 1. NMDOT provides the MPO/RTPO/Municipalities with monthly permanent counter (CCS) summary data (MAWDT) and Annual LCF for all locations in the jurisdiction for the previous 3 years.

Step 2. The MPO/RTPO/Municipalities will review the NMDOT-provided data and may elect to develop their own factor groups based on geographic area, local knowledge of land-use, community character, travel patterns, and statistical analysis of short-term count data, etc. In this manner, the MPO/RTPO/Municipalities may develop their own MAF's, AGF's, and LCF's.

Step 3. The draft factors and factor groups developed by the MPO/RTPO/Municipalities will then be reviewed by the NMDOT for final approval. Factors have to be for the current year.

18.0 If a permanent device is excluded from the computation of mean traffic characteristics by factor groups per Standard 17.0, the available data will be used for all site-specific traffic volume summary statistics.

19.0 The default factor groups defined by functional classification of roads used in traffic monitoring, including monthly and annual traffic statistics summarized by functional classification are as follows:

Rural	
	Interstate
	Principal Arterial
	Minor Arterial
	Major Collector

Minor Collector
Local Road

Urban

Interstate
Principal Arterial
Freeways & Expressways
Minor Arterial
Collectors
Local Road

The NMDOT factor groups, which are defined using functional classification, are based on the functional classification system in the TMG. Descriptions of the functional classifications can be found online at (<http://www.fhwa.dot.gov>). Conditions and Performance Report, Chapter 2 - System and use Characteristics. (Note: Functional classes may change by future HPMS revisions.)

Other factor groups, which are grouped by functional classification, may be derived from cluster analysis of monthly traffic volume characteristics. Recognizing that Urban Area Boundaries do not represent, in some cases, reasonable demarcations for the application of loop correction factors the following practices will be allowed until research can determine methods which define a more appropriate set of classification schemes:

1. The director of the NMDOT Transportation Planning Division may designate "Urban areas of influence" which extend beyond the Urban Area's Boundary. For relevant applications, Urban adjustment factors may be applied to the raw data to derive summary statistics provided they are applied to the same factor groups which are grouped by functional classification. Urban area of influence designations shall be limited to developing rural areas which represent logical extensions of the Urban area and where existing travel patterns demonstrate that there is considerable interaction between the two areas.

2. The director of the NMDOT Transportation Planning Division may designate "rural areas of influence" which extend into the Urban Area Boundary of an Urban area. For relevant applications, rural adjustment factors may be applied to the raw data to derive summary statistics provided they are applied to the same factor groups, which are grouped by functional classification. Rural areas of influence designations shall be limited to facilities which traverse an Urban area but where existing data suggest that the facility is minimally impacted by Urban travel patterns.

These sections will be replaced when factor groups are established.

20.0 The mean permanent device annual traffic volume growth rate by factor groups which are grouped by functional classification will be used as the

default annual growth rate for non-count traffic sections in the same factor groups which are grouped by functional classification. Permanent devices, within a factor group, which are grouped by functional classification, which have not been on-line for a minimum of three years, will not be used in computing growth rates. However, said permanent devices may be used for computing other factors.

21.0 AVCs and AWAC are permanent devices or portable devices used to collect traffic volume and classification data. All data will be collected based on the FHWA specified vehicle classifications. Classification data will be summarized in the same manner as detailed for traffic volume summary statistics. Data will be summarized for each day, typical days of the week will be summarized by month, and monthly typical days of the week will be summarized for the annual traffic statistics. For a given site there will be typical daily vehicle classification based on a seven-day week, the work week, and the weekend. The NMDOT Traffic Monitoring System will prepare monthly and annual vehicle classification reports.

22.0 **GOAL** The variability of vehicle classifications by factor groups, which are grouped by functional classification of roadway will be reviewed. The review will determine if vehicle classification data may be grouped. If grouping of data is indicated, Monthly Classification Ratios (MCRs) will be calculated and used in a manner similar to MTR for adjusting coverage and project-related, special count activities.

22.1 MPO's may develop their own growth factors and loop correction factors based on historical short term count data by factor group. The method and resulting factors **MUST BE SUBMITTED to NMDOT for approval**. Approval must be obtained in writing before the new growth factors may be used.

23.0 Weight data by vehicle classification will be summarized as per FHWA TMG. The NMDOT Traffic Monitoring System will prepare monthly and annual reports.

24.0 **GOAL** The data from Automatic Weight and Classification System devices will be used to compute Monthly Weight Ratios (MWRs). MWRs will initially be standardized as unique, significant only at the site at which they are collected. The weight data will be reviewed to determine if weight data can be grouped among sites. The analysis will include vehicle classification weight by factor groups, which are grouped by functional classification of road, seasonal variation, and region of the state.

25.0 Coverage and, project-related, special counts will be adjusted for seasonal variation using monthly adjustment factors.

26.0 Coverage and special traffic volume counts will be adjusted for multiple axle vehicles by a loop correction factor. If a vehicle classification count was taken in the current year, the site specific vehicle classification based loop correction factor should be used to adjust recorded axle impulses to vehicles. Loop correction factors, for traffic sections on which vehicle classification counts

were not taken in the current year shall be derived by the NMDOT in accordance with NMSTMS 66.1.

27.0 Monthly adjustment factors will be derived from standard data by factor groups.

27.1 Vehicle classification-based seasonal loop correction factors will be derived by CCS and short term counts. The current year average by factor groups, which are grouped by functional classification, will be used as the adjustment factors.

Traffic Monitoring Period

28.0 All counts taken in an Urban area will have a data summarization period of 15 minutes. An Urban area is defined as any community with a population of 5,000 persons or more.

29.0 All counts taken in a rural area will have a data summarization period of 15 minutes. All roads in areas of the state in which there is not a population of 5,000 persons or more are rural roads.

30.0 There will be a minimum of 48 consecutive hours of data collected by direction reported from each coverage and special count site. This standard will apply for volume, classification, and weight, including screen line or cordon counts, and site-specific counts requested by the New Mexico State Legislature. All counts using Federal or State funding will be conducted on a 48-hour basis, adjusted, and documented in compliance with the NMSTMS.

30.1 For speed monitoring, there will be 24 CCS (48 short-term) consecutive hours of data collected for one direction for each speed coverage and special count site.

31.0 Interchange ramps, and ramp-freeway junctions, will be monitored by volume and classification procedures identified for coverage and special, project-related counts for traffic sections. Interchange ramp/street junctions will be monitored by traffic monitoring procedures identified for intersections. Interchange traffic monitoring includes analysis of traffic on the contiguous upstream and downstream Interstate unique traffic sections. If traffic counts were taken on the contiguous Interstate traffic sections in the same or prior calendar year, no additional count activity is required. If no traffic counts were taken on the contiguous upstream and downstream Interstate traffic sections, interchange traffic monitoring will include counts on the Interstate traffic sections, except as provided within State Standard 70.3 for ramp balancing. The Interstate traffic section counts will be 48-hour, weekday counts, conducted in the same seasonal adjustment period as the Interchange ramp monitoring.

31.5 Multilane, Divided & Interstate counts shall be collected for both directions within the same 48-hour period at the same mile point or Traffic Section ID.

33.0 Special count activities designed to monitor weekend traffic for identification of recreational route traffic characteristics, require data collection for the entire weekend period (00:01 Saturday - 24:00 Sunday) and can be supplemented with a full 7 day count.

34.0 Each year at least one-third of all traffic sections of factor groups, which are grouped by functional classification of collector or better will be counted.

35.0 Compliant coverage data will be considered as standard for a period of three calendar years, inclusive of the calendar year in which data collection occurred, except in the following case:

If capacity enhancements occur on any traffic section (defined as the addition of one or more through lanes) any previous data collected on the unique traffic section will be considered non-standard and the traffic section will have to be recounted. Compliant data collected on the traffic section shall be considered as standard for the calendar year in which the capacity enhancement was completed, provided the additional lane(s) were open to traffic no more than six months prior to the end of the calendar year.

36.0 The period of intersection manual turning movement counts will follow one of two procedures:

1) Fixed Intersection Count Period:

Manual counts will be conducted from 07:00 to 10:00, 11:00 to 14:00, and 15:00 to 18:00. This provides three traffic-monitoring periods over a period of twenty-four hours, each of a three-hour duration, for a total of nine hours of data collection.

2) Flexible Intersection Count Period:

Manual counts will be conducted based on observed peak traffic conditions from a standard 48-hour volume count conducted on the high volume leg of the intersection within the same seasonal adjustment period. The typical morning, noon, and evening peak hours will each be defined using fifteen-minute intervals rather than the clock hour. At a minimum, one half hour before and one half hour after each anticipated peak hour will be defined. This will result in three traffic-monitoring periods over a period of twenty-four hours, each of a minimum of two hours duration, for a total of a minimum of six hours of data collection.

Hard copies of intersection turning movement data will note the date and time of the three data collection periods. A site diagram containing mile points shall be included for each site submitted to NMDOT.

39.0 Multilane, Divided & Interstate Interchange ramps will be counted for 48 hours, Monday 00:01 through Friday 13:00. All ramps within the same interchange will be counted within the same seasonal adjustment period. Any re-

counts submitted should be for the same seasonal adjustment period and the same days of the week, if possible.

Traffic Report Period and Data Transmittal

40.0 The traffic-monitoring year will follow the calendar year, from January 1 through December 31.

40.2 Refer to Standard 2.1 for Formats and Websites for;
FHWA—4 Card (Classification), 7 Card (Weight)
FHWA-C Card (Classification), W Card (Weight)
Peak—Volume, Classification and Speed in NMSTMS Formats.

40.5 **GOAL** Upon mutual agreement between the NMDOT and the MPO's/RTPO's may perform a year end load of summary statistics rather than transmitting data under the requirements of State Standard 41.0. Minimum prerequisites for such an agreement shall include:

1. MPO's/RTPO's must maintain the capability to transmit data to TMS.
2. MPO's/RTPO's must possess and maintain software which is capable of: applying all applicable state standards to the raw data; generating and storing all appropriate summary statistics; and all required reports under the same time constraints as those that apply to the NMDOT.
3. The MPO/RTPO must store and maintain all raw data in its original form.
4. The year-end load shall be done electronically and in compliance with the time, data and format requirements specified by the NMDOT.
5. The process must be tested and approved prior to implementation.
6. Upon request the MPO/RTPO will be required to submit hard copies of reports to the NMDOT or other interested parties within seven days of the request.
7. The end of each calendar year both the NMDOT and the MPO/RTPO will produce Vehicle Miles of Travel (VMT) data by factor groups, which are grouped by functional classification, representing data from the area covered by the year end load. The acceptance requirements for this process shall be VMT data by factor groups which are grouped by functional classification which are within plus or minus one percent.

8. The coverage count reports for standard compliant data will be transmitted no later than one month after data acceptance by the Traffic Monitoring System.

41.0 Metropolitan and Regional Planning Organizations, NMDOT Districts, county and municipal governmental agencies, and private consulting engineering firms will transmit raw traffic data to the Traffic Monitoring System no later than one month after the data collection with the exception of Calendar Year End. This data must be transmitted no later than December 31st of each year.

42.0 Metropolitan and Regional Planning Organizations, NMDOT Districts, County and Municipal agencies monitoring traffic on roads which either currently or are proposed for state or federal funding, will transmit the raw data to the Traffic Monitoring System for data evaluation, data processing, and report generation. The data will be transmitted no later than one month after data collection with the exception of Calendar Year End. This data must be submitted no later than December 31st of each year.

43.0 Metropolitan and Regional Planning Organizations, NMDOT Districts, County and Municipal agencies monitoring traffic on roads neither currently nor proposed for state or federal funding, are strongly encouraged to transmit the raw data, that is in a format acceptable to TMS, to the Traffic Monitoring System for data evaluation, data processing, and report generation.

44.0 Private consulting firms collecting New Mexico traffic data for a state or federally funded transportation project or study, will transmit the raw data to the Traffic Monitoring System for data evaluation, data processing, and report generation. The data will be transmitted no later than one month after data collection with the exception of calendar year end. This data must be submitted by no later than December 31st of each year. Data should conform to the NMSTMS.

45.0 Private consulting firms collecting New Mexico traffic data for a transportation project or study not funded by the state or federal government, are strongly encouraged to transmit the raw data, that is in a format acceptable to TMS, to the Traffic Monitoring System for data evaluation, data processing, and if requested by the private consulting firm & their clients, report generation.

46.0 Traffic summary reports within the area of MPO's/RTPO's, and Municipalities processed by the Traffic Monitoring System from data not collected by the MPO's/RTPO's/Municipalities, will be transmitted to the MPO/RTPO/Municipality either electronically or in hard copy format as processing capability permits. The reports will be transmitted on a monthly basis. This will ensure that the MPO's/RTPO's/Municipalities have all standard traffic data summary statistics for their metropolitan area.

47.0 Interim analysis and reporting of traffic summary statistics from special counts, will be provided to the county or municipal governmental agency or private firm collecting the data by the NMDOT.

48.0 Monthly traffic summary statistics from permanent traffic recording devices located within the area of MPO's/RTPO's, and Municipalities will be transmitted to the MPO's/RTPO's/Municipalities on a monthly basis. During monthly TMS data processing, the monthly traffic reports transmitted for state and federal use will also be transmitted to the MPO/RTPO/Municipality.

48.1 Final reporting and, analysis for all counts, within an MPO/RPO/Municipality area, accepted by the Traffic Monitoring System, will be provided to the MPO/RPO/Municipality by the NMDOT. These reports will be transmitted no later than February 15 of each year.

Permanent Traffic Recording Devices

49.0 The purpose of a permanent device is to collect data each day of the year on a unique traffic section. Permanent devices must be polled on a 24-hour basis to ensure data collection and device maintenance.

49.1 The NMDOT will be responsible for all permanent counter data collection and summarization, including those non-interstate permanent counters inside the Urban Area Boundaries of areas with populations of 50,000 or more.

49.2 **GOAL** MPO's/RTPO's and Municipalities may directly collect permanent traffic volume counter data within the Urban Area Boundary of their individual areas. Polling times will be coordinated between the NMDOT, MPO's/RTPO's and Municipalities, including the operating times of system clocks on PC's.

50.0 On traffic sections for which there is not full access control, the permanent device must measure volume at a specific point crossing all lanes of travel. On traffic sections for which there is full access control, the permanent device may measure volume at any point within the unique traffic sections, but must include all lanes of travel.

52.0 **GOAL** For application of the mean traffic volume summary statistics by factor groups, which are grouped by functional classification, there must be a minimum of six permanent traffic-recording devices for each factor groups, which are grouped by functional classification. If the minimum requirements is not met for a particular factor groups which are grouped by functional classification, then mean traffic volume summary statistics for the factor groups which are grouped by functional classification will be generated utilizing the permanent recorders for the factor groups which are grouped by functional classification plus all permanent recorders from the next higher factor

groups which are grouped by functional classification or if necessary from the next lower factor groups which are grouped by functional classification.

52.1 When a permanent counter malfunctions repairs shall commence within one week of the reported malfunction after site evaluation.

53.1 The number of permanent traffic recording devices included in calculation of mean traffic summary statistics will be provided, by factor groups, as part of annual Traffic Monitoring System data processing and reporting.

57.0 The NMDOT will be responsible to annually summarize all MTR data by factor groups which are grouped by functional classification or group of factor groups which are grouped by functional classification and by MPO's and Municipalities, both individually and as a group, and will provide mean statistics to all interested governmental agencies on or before February 15 of each year.

58.0 The permanent device polling software must include verification of the microcomputer date and time.

59.0 If the clock on the permanent device exceeds +/- 10 minutes of the verified counter clock, then all data for that day will be excluded from summarization and reporting.

60.0 If the clock on the permanent device is less than +/- 10 minutes, but greater than +/- 5 minutes on the verified computer clock, a warning will be issued and the time will be adjusted on the field clock.

62.0 When the same-recorded traffic volume occurs at a permanent device, other than zero, for four consecutive intervals a warning message will be displayed and the day's data will be reviewed for optional purge.

64.0 When eight hours of recorded successive zeros occur at a permanent device, a warning message will be displayed and the day's data will be reviewed for optional purge.

65.0 If the daily directional total volume at a permanent device is within the range of 60% to 80% of the total traffic for that day, a data and device review message will be displayed.

66.0 If a daily directional total volume at a permanent device exceeds 80% of the total traffic for that day, the data will not be included when computing site traffic summary statistics.

66.1 If the permanent device records vehicle type information and the daily percentage of unidentified vehicles exceeds 10 percent of the total, the vehicle class information will be automatically purged from the summary file and may not be used under any circumstances to generate annual or monthly loop correction factors. Volume data for the day may be retained. If the daily percentage of unidentified vehicles exceeds 20 percent of the total, the day's

data, including volume summaries, will be automatically purged and device error message will be displayed. If the unidentified percentage exceeds 20 percent for three consecutive days the device will be converted to record volume information only.

67.0 **GOAL** In order to derive representative MADW volumes, when the daily directional traffic volume for a given day of the week in a month exceeds two standard deviations from the mean previous years same day of the week directional AADW a data device review message will be displayed. If the daily directional traffic volume for a given day of the week in a month exceeds four standard deviations from the previous years same day of the week directional AADW it will be considered an outlier and stored in the Traffic Monitoring System. The mean volume will be recalculated excluding the outlier.

Coverage and Special Counts

69.0 The NMDOT will provide counts for all annual coverage count samples selected on a three-year count cycle, other than the roads within the boundaries, which represent an MPO's/RTPO's/Municipalities planning, and data collection jurisdiction as agreed upon by the MPO/RTPO/Municipalities and the NMDOT.

70.1 The requirements of NMSTMS 62.0 through 66.1 shall apply to all coverage and special machine counts.

70.2 Interstate mainline data may be combined with Interstate ramp data to produce an upstream or downstream volume under the following conditions:

- 1.The data for the two locations monitored are standard.
- 2.The same 48 hours of data are used.
- 3.The same interval is recorded.
- 4.The roadways, which access the controlled facility, allow travel in only one direction.
- 5.The process for adding the two files is electronic.
- 6.Data may only be produced for the mainline links immediately upstream or downstream from the point of access.

70.3 Ramp Balancing for Estimation of Interstate Mainline Volumes

The method of ramp balancing must be approved in writing by the NMDOT before the new technique can be used. The standardized technique, to provide the best reliable estimates, needs consistent reliable data points. Intermediate ramp volumes would be factored in order to make them consistent with known upstream and downstream volumes.

One example is provided in the TMG.

Another example is: The derived factor would be applied to each ramp by adding or subtracting the ramp volumes as you downstream from the known starting point. Procedure follows:

1. It is assumed that reliable AWDTs are available from counts at two points, X1 and X4, on the same direction of travel on the Interstate mainline, but separated by two or more interchanges. Standard counts are assumed to exist for all ramps.

2. Assuming there are three interchanges between the known data points:

Let: X1=upstream vol.--based on standard data
 X2=vol. after the first intermediate interchange
 X3=vol. after the second intermediate interchange
 X4=downstream vol. after the third interchange--based on standard data
 off1=first interchange off ramp vol.
 on1=first interchange on ramp vol.
 off2=second interchange off ramp vol.
 on2=second interchange on ramp vol.
 off3=third interchange off ramp vol.
 on3=third interchange on ramp vol.

3. calculate $de1X = X4 - X1$

calculate sum of ramp vols as

$$de1X' = on1 - off1 + on2 - off2 + on3 - off3$$

4. calculate $f = de1X / de1X'$

5. calculate the factored ramp volumes:

$$off1' = f * off1$$

$$on1' = f * on1$$

$$off2' = f * off2$$

etc.

6. use the factored ramp vols. to estimate mainline vols.,

e.g.:

$$X2 = X1 - off1' + on1'$$

$$X3 = X2 - off2' + on2'$$

(Note that X4 will automatically equal

$$X3 - off3' + on3')$$

Publication of the resulting estimates would be allowed so long as the following conditions are met, pertaining to publication of nonstandard data.

In addition to situations where Interstate mainline counts may not be feasible, there will from time to time be other locations, which are missed due to

scheduling, construction, weather, etc. It is suggested that the standards allow for more flexibility in the publication of such data.

71.0 Vehicle classification coverage counts will be based on electronic vehicle classification. Currently utilized classification devices in New Mexico accurately record axle impulses, but do not provide consistent, accurate interpretation of axle impulses into classification of vehicles when vehicles travel is not free flowing. Classification by length may also be used.

72.0 The manual urban traffic section counts, just as electronic vehicle classification counts, will be based on FHWA specified vehicle classification.

74.0 The vehicle classification manual count activity will follow one of the two procedures, designed to collect data manually when vehicle speeds prohibit the use of an electronic device.

1. Fixed Traffic Section Manual Count Period:

Manual counts will be conducted within a given day from 07:00 to 10:00, 11:00 to 14:00, and 15:00 to 18:00. This provides three traffic-monitoring periods during the day, each of a three-hour duration, for a total of nine hours of data collection. Missing peak hour period can be counted within 7 days of the original count.

2. Flexible Traffic Section Manual Count Period:

Manual counts will be conducted within a given day based on observed peak traffic conditions. The typical morning, noon, and evening peak hours will each be defined, using 15-minute intervals rather than the clock hour. One hour before, and one hour after the anticipated peak hour, will be defined. This will result in three traffic-monitoring periods during the day, each of three-hour duration, for a total of nine hours of data collection. Missing peak hour period can be counted within 7 days of the original count.

Loop Correction Factor Responsibility

78.1 Loop correction factors (LCF) shall be derived by the NMDOT. LCFs shall be based on standard AWAC, AVC and coverage count data collected over the current count year. LCFs shall be generated by factor groups..

78.2 **GOAL** Monthly LCFs shall only be generated in cases where the data collected from permanent devices meet the requirements of NMSTMS 66.1 at a minimum of six permanent devices per factor groups which are grouped by functional classification or groups of factor groups which are grouped by functional classification. Independent LCFs may be generated for the Interstate facilities or individual traffic sections of the Interstate system if the summary data justify such a treatment.

Intersection Turning Movement Counts

80.1 All manual turning movement counts will classify vehicles into two categories. The first category will include all vehicles in the FHWA's vehicle classification Bin 1-3 and the second Bin will include all vehicles in classes 4-13, or three Bins consisting of 1-3, 4-7, and 8-13. If more precise vehicle classification data is needed for the intersection, then the turning movement counts will be supplemented by electronic or manual vehicle classification counts.

Permanent Weight Monitoring Devices (AWACS)

84.0 The purpose of an AWAC permanent device is to collect data each day of the year on a unique traffic section. AWAC permanent devices must be polled on a 24-hour basis to ensure data collection and device maintenance.

85.0 All AWAC Devices shall adhere to the same Permanent Traffic Recording Device standards 52.1 through 66.1.

88.0 **GOAL** NMDOT will pursue Virtual or other Automatic Weight and Classification Systems.

Traffic Flow Maps

89.0 **GOAL** All traffic flow maps published by the NMDOT, MPO's, RTPO's and other public and private organizations, intended for distribution to the public or any other public or private entity shall clearly indicate which data reflect volumes in compliance with the NMSTMS and which data does not.

89.1 Traffic Flow Maps containing nonstandard data shall provide a legend distinguishing standard data and nonstandard data, and the following statement: "NMDOT recommends that nonstandard data be used with caution."

92.1 **GOAL** All traffic flow maps including MPO's/RTPO's/Municipalities, the Interstates, and all other areas will provide a preliminary draft to the NMDOT by April 1st of each year. Comments and suggestions by the NMDOT will be returned to the MPO/RTPO/Municipality by June 1st of each year with final copies prepared by September 1st. MPO's/RTPO's/Municipalities Traffic Flow Maps will be transmitted to the NMDOT prior to September 1st for inclusion.

93.0 Urban areas will use Annual Average Weekday Traffic (AAWDT) as the Traffic Flow Map summary statistic.

94.0 Rural areas will use AADT as the Traffic Flow Map summary statistic. In some cases Traffic Flow Maps may be generated for rural areas using AAWDT as the Traffic Flow Map summary statistic. This exception will be reserved for those rural areas that are adjacent to or heavily influenced by Urban traffic flows.

Vehicle Miles Traveled

96.0 Daily Vehicle Miles Traveled (DVMT) will be calculated for each traffic section by multiplying the length of each unique traffic section by Annual Average Daily Traffic.

97.0 Annual Vehicle Miles Traveled (AVMT) will be calculated for each traffic section by multiplying the DVMT by 365.

Traffic Monitoring Hardware and Software

98.0 The devices used to monitor traffic will accurately represent existing traffic. In addition to device type and model accuracy and precision documentation, an operation and maintenance record will be maintained for each individual device.

100.0 The NMDOT's software must be capable of handling and integrating all traffic data described in the NMSTMS, as well as electronically transmitted traffic data from other governmental agencies and private engineering consulting firms, based on a standard format identified by the department. The software must produce automatically all tables and statistics for the annual state traffic survey, and mean traffic statistics by factor groups, which are grouped by functional classification.

Traffic Monitoring Training

103.0 The NMDOT will, if requested, conduct a Standard Description and implementation workshop open to all interested persons from the public and private sectors.

104.0 **GOAL** The NMDOT will provide training and field manuals for correct setting and operation of traffic monitoring field equipment. Field training programs will be available to MPO's/RTPO's, county and municipal agencies and private consulting engineering firms as requested.

105.0 All traffic data collection operations performed on public highways shall be done in accordance with Manual on Uniform traffic Control Devices (MUTCD).

Refinement of Traffic Monitoring Standards

107.0 The current standards are related to the adequacy of factor groups, which are grouped by functional classification of roads in New Mexico. There will be a review of the factor groups a minimum of every three years. The review will be in accord with the federal guidelines related to the factor groups. The NMDOT will conduct the review of factor groups for all roads excluding the non-Interstate roads within the Urban Area Boundaries of areas with populations of 50,000 or more. MPO's and Municipalities will be responsible for review of the Urban Area Boundaries of areas with populations of 50,000 or more.

108.0 Any traffic volume, classification, speed or weight standard, definition, or calculation not specifically expressed in the NMSTMS is the standard, definition, or calculation provided in the TMG, FHWA's most current edition or the AASHTO or ASTM Guideline. Any road or intersection capacity standard, definition, or calculation not specifically expressed in the AASHTO, ASTM, or NMSTMS, is the standard, definition, or calculation provided in the Highway Capacity Manual, Transportation Research Board, as amended.

109.0 Exceptions to the NMSTMS, may be approved during the course of a year, by the NMDOT, with the concurrence of the FHWA. Exceptions may only be based on conditions not specifically considered during the standards review process and not covered by the NMSTMS and therefore prohibited. The requester must document all requests,, with basis for the request for exemption or exception. If approved, an exception must comply fully with the principle of Truth-in-Data, noting in all data transmittals that the data are based on an exemption to the exceptions must be documented and transmitted to all participants in the standards review process. The exception must be specifically acted upon during the following standards review. If the exception is not supported during the standards review, the exception may not be further used.

TRADAS/TIMS/Route & Milepoint SITE ID INFORMATION

**TRADAS CODES
FOR TIMS TRAFFIC COUNT FILES**

Column 1 -- Code for type of traffic count:

- P** = Continuous Count Stations
- E** = Coverage
- I** = ITS Traffic Recorder

Columns 2 thru 3 – County FIPS Code

01. BERNALILLO	21. HARDING	41. ROOSEVELT
03. CATRON	23. HIDALGO	43. SANDOVAL
05. CHAVES	25. LEA	45. SAN JUAN
06. CIBOLA	27. LINCOLN	47. SAN MIGUEL
07. COLFAX	28. LOS ALAMOS	49. SANTA FE
09. CURRY	29. LUNA	51. SIERRA
11. DE BACA	31. McKINLEY	53. SOCORRO
13. DONA ANA	33. MORA	55. TAOS
15. EDDY	35. OTERO	57. TORRANCE
17. GRANT	37. QUAY	59. UNION
19. GUADALUPE	39. RIO ARRIBA	61. VALENCIA

Columns 4 thru 13 – TIMS Traffic Section ID Number: this must be a Ten-digit number, as defined in TIMS. This is a right justified field with spaces used for empty characters:

- Examples: Traffic section 1 (Nine spaces, 1)
- Traffic section 10 (Eight spaces, 10)
- Traffic section 100 (Seven spaces, 100)
- Traffic section 1000 (Six spaces, 1000)
- Etc.

Column 14 -- Code for direction of traffic data:

- P** = Plus direction (milepost numbers increasing)
- M** = Minus direction (milepost numbers decreasing)
- B** = Both directions, with the Plus direction first
- Z** = Both directions, with the Minus direction first

NOTE: For one-way streets, count should be coded with a direction of P. This is because the variable NEGLANES (negative lanes) in TIMS is always zero for one-way streets, regardless of the true direction of travel.

Column 15 -- Blank Space

Column 16 -- Number of Plus direction channels in the count file. For example, if a count has 2 channels of data and the direction code is B, the number of P-direction channels must be 1. A count with a direction code of M must have zero P-direction channels.

Column 17 -- Beginning lane: This identifies the first lane represented by channel one. Lanes are numbered sequentially for each direction from right to left (usually driving lane to passing lane) in the direction of travel. This beginning lane code will almost always be a 1, indicating that the first lane of data in channel one is the rightmost lane. Probably the only time this code will be anything other than a 1 would be for a quad count, where the four count files each contain data for a single lane. In this case, the files will contain either a 1 or a 2 for the beginning lane code.

Column 18 -- Channel configuration code: Indicates the nature of data contained in a channel.

- L = One lane per channel
- D = One direction per channel
- R = One channel represents the entire roadway (Both lanes-Both Directions for an undeveloped roadway with no clear centerline)

The channels in a count file must be numbered across the road, from right to left, while facing in the direction of travel. Channel configuration must be consistent within a count file. For example, in a single count file, if channel one counts exactly 1 lane, all remaining channels must also count only 1 lane each.

Column 19 -- Agency code: Identifies the agency* submitting the count file.

- 1.) **H** NMDOT (NM Department of Transportation)
- 2.) **A** MRCOG (Mid Region Council of Governments, includes RTPO)
- 3.) **L** MVMPO (Mesilla Valley MPO)
- 4.) **S** SAFMPO (Santa Fe MPO)
- 5.) **F** FRMMPO (Farmington MPO)
- 6.) **1** NWRTPO (North West RTPO)
- 7.) **2** NPRPO (Northern Pueblos RTPO)
- 9.) **4** NERTPO (North East RTPO)
- 10.) **5** SWRTPO (South West RTPO)
- 11.) **6** SCRTPO (South Central RTPO)
- 12.) **7** SERTPO (South East RTPO)

- * (MPO = Metropolitan Planning Organization)
- (RTPO = Regional Transportation Planning Organization)

Column 20 – Number of Counts completed within a Traffic Section during the

same count session. This number will almost always be one, unless a special count request is being completed with multiple counts in the same section needed. Then the counts will be numbered in the order that they are completed, with a P and M count being the same number to match the traffic together in TRADAS.

Examples: Traffic count one with B directions will be coded 1.
 Traffic count two with P direction will be coded 2.
 Traffic count three with M direction will be coded 2.
 Traffic count four with B directions will be coded 3.
 Etc.

Complete traffic count identifier, followed by the five configuration codes.

Example: E49 35420B 11DH1

Column 1.... **E** -- Coverage count
Column 2.... **4** -- County FIPS Code
Column 3.... **9** -- County FIPS Code
Column 4.... -- Blank Traffic Section ID
Column 5.... -- Blank Traffic Section ID
Column 6.... -- Blank Traffic Section ID
Column 7.... -- Blank Traffic Section ID
Column 8.... -- Blank Traffic Section ID
Column 9.... **3** -- Traffic Section ID
Column 10.... **5** -- Traffic Section ID
Column 11.... **4** -- Traffic Section ID
Column 12.... **2** -- Traffic Section ID
Column 13.... **0** -- Traffic Section ID
Column 14.... **B** -- Both traffic directions
Column 15.... -- Blank space here
Column 16.... **1** -- Number of Plus direction channels in the count file
Column 17.... **1** -- 1st lane represented by channel 1 (Driving lane, + dir.)
Column 18.... **D** -- # of lanes & directions in a channel (One dir. per channel)
Column 19.... **H** -- Identifies agency submitting the count file
Column 20.... **1** -- Identifies the count number in the Traffic Section

**TRADAS CODES
FOR CHDB TRAFFIC COUNT FILES**

Column 1 -- Code for type of traffic count:

- A** = Continuous Count Stations
- C** = Coverage

Columns 2 thru 7 -- Posted route: this must be a six-digit route number, as defined in the CHDB.

Examples: US0070, I00025, FL4016, IA2213 (Interstate Ramp),
490084 (Santa Fe County Road 84).

Column 8 -- Code for direction of traffic data:

- P** = Plus direction (milepost numbers increasing)
- M** = Minus direction (milepost numbers decreasing)
- B** = Both directions, with the Plus direction first
- Z** = Both directions, with the Minus direction first

NOTE: For one-way streets, count should be coded with a direction of P. This is because the variable NEGLANES (negative lanes) in CHDB is always zero for one-way streets, regardless of the true direction of travel.

Columns 9 thru 15 -- Cumulative mile-point (for CCS's and MPO's), or milepost number (for coverage and special counts). Format is XXX.XXX (decimal point is necessary).

Examples: 123.821, 313.000, 000.500

Column 16 -- Blank Space

Column 17 -- Number of **Plus** direction channels in the count file. For example, if a count has **2** channels of data and the direction code is **B**, the number of P-direction channels must be **1**. A count with a direction code of **M** must have **zero** P-direction channels.

Column 18 -- Beginning lane: This identifies the first lane represented by channel one. Lanes are numbered sequentially for each direction from right to left (usually driving lane to passing lane) in the direction of travel. This beginning lane code will almost always be a 1, indicating that the first lane of data in channel one is the rightmost lane. Probably the only time this code will be anything other than a 1 would be for a quad count, where the four count files each contain data for a single lane. In this case, the files will contain either a 1 or a 2 for the beginning lane code.

Column 19 -- Channel configuration code: Indicates the nature of data contained in a channel.

- L** = One lane per channel
- D** = One direction per channel
- R** = One channel represents the entire roadway (All lanes-all directions)
- 9** = Count file is configured in a non-standard way, or one of the above assumptions is not valid

The channels in a count file must be numbered across the road, from right to left, while facing in the direction of travel. Channel configuration must be consistent within a count file. For example, in a single count file, if channel one counts exactly 1 lane, all remaining channels must also count only 1 lane each.

Column 20 -- Agency code: Identifies the agency * submitting the count file.

- 1.) **H** NMDOT (NM Dept. of Transportation)
- 2.) **A** MRCOG (Mid Region Council of Governments MPO and RTPO)
- 3.) **L** MVMPO (Mesilla Valley MPO)
- 4.) **S** SAFMPO (Santa Fe MPO)
- 5.) **F** FARMPO (Farmington MPO)
- 6.) **1** NWRTPPO (Northwest RTPO)
- 7.) **2** NPRTPO (Northern Pueblos RTPO)
- 9.) **4** NERTPO (North East RTPO)
- 10.) **5** SWRTPO (South West RTPO)
- 11.) **6** SCRTPO (South Central RTPO)
- 12.) **7** SERTPO (South East RTPO)

*(MPO = Metropolitan Planning Organization)
(RTPO = Regional Transportation Planning Organization)

Devices that Process Thru TRADAS

DEVMAKE

Peek Traffic
 TransCore
 Peek Traffic

Unk Man Vol

W-Card file

C-Card file

AARB

Microcom

MRWA

TDL

TDL

ITC - PRN Format

WAVETRONICS_SS105

TimeMark

TimeMark

WAVETRONICS_SS125

Roadway Data

Roadway Data

NY TMS

WAVETRONICS_XML

DEVMODEL

South Dakota WIM

San Jose S2000

TAM

7-Card file

4-Card

Unk Man Vol

W-Card file

C-Card file

Culway WIM System

Class Counters

Manual Class

ITC

WAVETRONICS_SS105

VIAS Vehicle

VIAS Volume

WAVETRONICS_SS125

IRD-WIM-REV10

3-Card

Roadrunner

Autoscope

NY TMS

WAVETRONICS_XML

FORMAT SECTION

PEEK Volume Formats

2 Lanes

4Lanes

000000000024 000000000024 01 0000 020399 2400 020399 0015 01 2 100 102 100

0000 0000 0000 0000 0000 0000 0000 0000 0000 00220000

'AFR1037B012.100 11LH'LC12

'Las Cruces Frontage Road Between NM 101

01 02 0001 0002

00 00

00 00

00 00 0 0015 0001 0004

00 00 0 0030 0004 0005

00 00 0 0045 0004 0003

00 00 0 0100 0005 0004

00 00 0 0115 0000 0006

00 00 0 0130 0008 0002

00 00 0 0145 0003 0003

00 00 0 0200 0004 0006

00 00 0 0215 0001 0002

00 00 0 0230 0005 0002

00 00 0 0245 0005 0003

00 00 0 0300 0001 0002

00 00 0 0315 0000 0005

00 00 0 0330 0003 0001

00 00 0 0345 0003 0002

00 00 0 0400 0002 0004

00 00 0 0415 0005 0001

00 00 0 0430 0002 0002

00 00 0 0445 0004 0001

00 00 0 0500 0005 0000

00 00 0 0515 0013 0004

00 00 0 0530 0012 0005

00 00 0 0545 0017 0005

00 00 0 0600 0030 0003

00 00 0 0615 0039 0004

00 00 0 0630 0046 0011

00 00 0 0645 0052 0033

00 00 0 0700 0060 0025

00 00 0 0715 0043 0027

00 00 0 0730 0064 0038

00 00 0 0745 0109 0044

00 00 0 0800 0111 0060

00 00 0 0815 0087 0062

00 00 0 0830 0080 0046

00 00 0 0845 0056 0045

00 00 0 0900 0057 0025

00 00 0 0915 0036 0030

00 00 0 0930 0055 0028

00 00 0 0945 0058 0028

00 00 0 1000 0040 0035

00 00 0 1015 0046 0025

00 00 0 1030 0047 0036

00 00 0 1045 0047 0034

00 00 0 1100 0045 0037

00 00 0 1115 0032 0043

00 00 0 1130 0048 0040

00 00 0 1145 0053 0034

00 00 0 1200 0058 0063

00 00 0 1215 0041 0045

00 00 0 1230 0042 0053

00 00 0 1245 0062 0056

00 00 0 1300 0060 0046

00 00 0 1315 0048 0055

00 00 0 1330 0049 0054

00 00 0 1345 0047 0057

00 00 0 1400 0059 0037

00 00 0 1415 0058 0048

00 00 0 1430 0050 0067

00 00 0 1445 0057 0051

00 00 0 1500 0051 0058

000000000007 000000000007 01 0000 020399 2400 020399 0015 01 4 100 102 100
0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 00220000

'AUS0084B163.222 21LH'SF12 'US 84 IN SANTA FE BETWEEN ZIA AND SIRING

01 04 0001 0002 0003 0004

00 00
00 00
00 00 0 0015 0009 0008 0009 0024
00 00 0 0030 0011 0013 0003 0021
00 00 0 0045 0017 0010 0002 0014
00 00 0 0100 0003 0003 0000 0017
00 00 0 0115 0008 0005 0003 0012
00 00 0 0130 0006 0004 0005 0009
00 00 0 0145 0013 0006 0003 0013
00 00 0 0200 0011 0002 0005 0013
00 00 0 0215 0008 0004 0004 0011
00 00 0 0230 0008 0003 0001 0008
00 00 0 0245 0004 0002 0003 0008
00 00 0 0300 0004 0003 0001 0012
00 00 0 0315 0008 0004 0003 0008
00 00 0 0330 0004 0003 0001 0009
00 00 0 0345 0008 0005 0001 0007
00 00 0 0400 0010 0004 0001 0011
00 00 0 0415 0005 0002 0002 0012
00 00 0 0430 0014 0004 0001 0006
00 00 0 0445 0015 0006 0003 0023
00 00 0 0500 0023 0015 0002 0017
00 00 0 0515 0024 0006 0001 0025
00 00 0 0530 0029 0031 0001 0022
00 00 0 0545 0055 0043 0013 0039
00 00 0 0600 0083 0058 0008 0037
00 00 0 0615 0078 0072 0016 0046
00 00 0 0630 0106 0104 0021 0065
00 00 0 0645 0149 0146 0030 0085
00 00 0 0700 0167 0208 0050 0100
00 00 0 0715 0236 0257 0054 0112
00 00 0 0730 0336 0331 0074 0160
00 00 0 0745 0369 0360 0087 0217
00 00 0 0800 0389 0370 0104 0211
00 00 0 0815 0275 0267 0105 0190
00 00 0 0830 0250 0240 0082 0170
00 00 0 0845 0208 0202 0082 0165
00 00 0 0900 0210 0203 0064 0169
00 00 0 0915 0185 0185 0072 0176
00 00 0 0930 0177 0170 0072 0172
00 00 0 0945 0174 0192 0084 0193
00 00 0 1000 0168 0175 0099 0173
00 00 0 1015 0155 0129 0064 0142
00 00 0 1030 0137 0132 0073 0142
00 00 0 1045 0164 0178 0096 0183
00 00 0 1100 0162 0133 0083 0177
00 00 0 1115 0168 0139 0088 0179
00 00 0 1130 0182 0147 0104 0205
00 00 0 1145 0179 0166 0121 0203
00 00 0 1200 0172 0155 0131 0247
00 00 0 1215 0155 0144 0132 0244
00 00 0 1230 0161 0156 0110 0215
00 00 0 1245 0181 0149 0125 0220
00 00 0 1300 0207 0176 0119 0223
00 00 0 1315 0189 0160 0097 0204
00 00 0 1330 0195 0169 0127 0226
00 00 0 1345 0186 0126 0106 0209
00 00 0 1400 0160 0149 0078 0174
00 00 0 1415 0169 0149 0142 0238
00 00 0 1430 0171 0138 0154 0253
00 00 0 1445 0202 0161 0132 0240
00 00 0 1500 0189 0173 0144 0245

PEEK Classification Format

000000000017 000000000017 01 0000 020399 2400 020399 0060 05 4 100 366 510

0000 0000 0000 0000 0000 0000 0000 0000 0000 00220000

'AI00025B343.390 21LH'LV-S

'I-25 south of the Las Vegas South Intch.

01 04 0001 0002 0003 0004

02 15 0001 0002 0003 0004 0005 0006 0007 0008 0009 0010 0011 0012 0013 0014 0015

00 00

00 01 0 0100 0000 0000 0000 0000

00 02 0 0100 0030 0001 0005 0025

00 03 0 0100 0011 0000 0002 0006

00 04 0 0100 0000 0000 0001 0000

00 05 0 0100 0002 0001 0000 0000

00 06 0 0100 0004 0000 0000 0002

00 07 0 0100 0000 0000 0000 0000

00 08 0 0100 0004 0000 0000 0009

00 09 0 0100 0012 0000 0001 0010

00 10 0 0100 0001 0000 0000 0000

00 11 0 0100 0003 0000 0000 0002

00 12 0 0100 0001 0000 0000 0000

00 13 0 0100 0000 0000 0000 0000

00 14 0 0100 0000 0000 0000 0000

00 15 0 0100 0000 0000 0000 0000

00 01 0 0200 0000 0000 0000 0000

00 02 0 0200 0019 0000 0002 0018

00 03 0 0200 0009 0000 0000 0006

00 04 0 0200 0000 0000 0000 0004

00 05 0 0200 0000 0000 0000 0000

00 06 0 0200 0000 0002 0000 0002

00 07 0 0200 0000 0000 0000 0000

00 08 0 0200 0001 0000 0000 0008

00 09 0 0200 0011 0000 0000 0006

00 10 0 0200 0000 0000 0000 0000

00 11 0 0200 0000 0000 0000 0001

00 12 0 0200 0001 0000 0000 0000

00 13 0 0200 0000 0000 0000 0000

00 14 0 0200 0000 0000 0000 0000

00 15 0 0200 0000 0000 0000 0000

00 01 0 0300 0000 0000 0000 0000

00 02 0 0300 0012 0002 0002 0009

00 03 0 0300 0008 0000 0001 0001

00 04 0 0300 0002 0000 0000 0003

00 05 0 0300 0001 0000 0000 0000

00 06 0 0300 0002 0000 0000 0001

00 07 0 0300 0000 0000 0000 0001

00 08 0 0300 0003 0000 0000 0011

00 09 0 0300 0007 0000 0000 0005

00 10 0 0300 0000 0000 0000 0001

00 11 0 0300 0001 0000 0000 0000

00 12 0 0300 0000 0000 0000 0001

00 13 0 0300 0000 0000 0000 0000

00 14 0 0300 0000 0000 0000 0000

00 15 0 0300 0000 0000 0000 0000

00 01 0 0400 0000 0000 0000 0000

00 02 0 0400 0013 0002 0001 0007

00 03 0 0400 0008 0000 0000 0004

00 04 0 0400 0003 0000 0000 0000

00 05 0 0400 0001 0000 0000 0001

00 06 0 0400 0001 0000 0000 0000

00 07 0 0400 0000 0000 0000 0000

00 08 0 0400 0004 0001 0001 0003

00 09 0 0400 0007 0000 0000 0008

00 10 0 0400 0000 0000 0000 0000

00 11 0 0400 0002 0000 0000 0003

00 12 0 0400 0000 0000 0000 0001

00 13 0 0400 0000 0000 0000 0000

00 14 0 0400 0000 0000 0000 0000

00 15 0 0400 0000 0000 0000 0000

PEEK Speed Formats

2 Lanes

4Lanes

000000000047 000000000047 01 0000 020299 2400 020299 0060 04 2 100 174 400
0000 0000 0000 0000 0000 0000 0000 0000 00220000
'ANM0402B058.300 11LH'K109 'Clayton, Site 9 Apx k
01 02 0001 0002
03 07 0040 0050 0060 0070 0080 0090 0099
00 00
00 01 0 0100 0000 0000
00 02 0 0100 0000 0000
00 03 0 0100 0000 0000
00 04 0 0100 0001 0000
00 05 0 0100 0000 0000
00 06 0 0100 0000 0000
00 07 0 0100 0000 0000
00 01 0 0200 0000 0000
00 02 0 0200 0000 0000
00 03 0 0200 0000 0000
00 04 0 0200 0001 0000
00 05 0 0200 0000 0000
00 06 0 0200 0000 0000
00 07 0 0200 0000 0000
00 01 0 0300 0000 0000
00 02 0 0300 0000 0000
00 03 0 0300 0000 0000
00 04 0 0300 0000 0000
00 05 0 0300 0000 0000
00 06 0 0300 0000 0000
00 07 0 0300 0000 0000
00 01 0 0400 0000 0000
00 02 0 0400 0000 0000
00 03 0 0400 0000 0000
00 04 0 0400 0000 0000
00 05 0 0400 0000 0000
00 06 0 0400 0000 0000
00 07 0 0400 0000 0000
00 01 0 0500 0000 0000
00 02 0 0500 0000 0000
00 03 0 0500 0000 0001
00 04 0 0500 0000 0002
00 05 0 0500 0000 0001
00 06 0 0500 0000 0000
00 07 0 0500 0000 0000
00 01 0 0600 0000 0000
00 02 0 0600 0001 0000
00 03 0 0600 0002 0000
00 04 0 0600 0002 0004
00 05 0 0600 0000 0000
00 06 0 0600 0000 0001
00 07 0 0600 0000 0000
00 01 0 0700 0000 0000
00 02 0 0700 0002 0000
00 03 0 0700 0002 0001
00 04 0 0700 0004 0004
00 05 0 0700 0000 0000
00 06 0 0700 0000 0001
00 07 0 0700 0000 0000
00 01 0 0800 0001 0000
00 02 0 0800 0002 0001
00 03 0 0800 0008 0003
00 04 0 0800 0018 0006
00 05 0 0800 0003 0001
00 06 0 0800 0001 0000
00 07 0 0800 0001 0000
00 01 0 0900 0000 0001
00 02 0 0900 0002 0001
00 03 0 0900 0003 0004
00 04 0 0900 0010 0008

000000000001 000000000001 01 0000 020399 2400 020399 0060 04 4 100
0000 0000 0000 0000 0000 0000 0000 0000 00220000
'AUS0070B153.527 21LH'K203 'US 70 2.8 MI. E OF I-25

174 410

01 04 0001 0002 0003 0004
03 07 0040 0050 0060 0070 0080 0090 0147
00 00

00 01 0 0100 0000 0000 0000 0001
00 02 0 0100 0027 0004 0000 0008
00 03 0 0100 0084 0034 0011 0048
00 04 0 0100 0019 0024 0013 0024
00 05 0 0100 0000 0001 0002 0001
00 06 0 0100 0000 0001 0001 0000
00 07 0 0100 0000 0000 0000 0000
00 01 0 0200 0000 0000 0000 0000
00 02 0 0200 0019 0001 0002 0004
00 03 0 0200 0041 0011 0004 0030
00 04 0 0200 0013 0014 0006 0018
00 05 0 0200 0000 0000 0003 0000
00 06 0 0200 0000 0001 0000 0000
00 07 0 0200 0000 0000 0000 0000
00 01 0 0300 0001 0000 0000 0000
00 02 0 0300 0003 0001 0000 0004
00 03 0 0300 0035 0006 0000 0014
00 04 0 0300 0006 0005 0003 0006
00 05 0 0300 0001 0000 0000 0001
00 06 0 0300 0000 0000 0000 0000
00 07 0 0300 0000 0000 0000 0000
00 01 0 0400 0000 0000 0000 0000
00 02 0 0400 0007 0000 0000 0007
00 03 0 0400 0035 0006 0004 0010
00 04 0 0400 0005 0005 0002 0008
00 05 0 0400 0000 0000 0000 0001
00 06 0 0400 0000 0000 0000 0000
00 07 0 0400 0000 0000 0001 0000
00 01 0 0500 0000 0001 0000 0000
00 02 0 0500 0010 0000 0000 0001
00 03 0 0500 0028 0008 0002 0020
00 04 0 0500 0004 0006 0002 0006
00 05 0 0500 0000 0000 0001 0000
00 06 0 0500 0000 0000 0000 0001
00 07 0 0500 0000 0000 0000 0000
00 01 0 0600 0002 0000 0000 0001
00 02 0 0600 0008 0003 0001 0006
00 03 0 0600 0043 0004 0004 0035
00 04 0 0600 0013 0006 0005 0014
00 05 0 0600 0000 0001 0001 0001
00 06 0 0600 0000 0000 0001 0000
00 07 0 0600 0000 0000 0000 0000
00 01 0 0700 0000 0000 0001 0003
00 02 0 0700 0048 0003 0000 0012
00 03 0 0700 0252 0058 0019 0107
00 04 0 0700 0031 0092 0042 0066
00 05 0 0700 0000 0001 0005 0001
00 06 0 0700 0000 0000 0001 0002
00 07 0 0700 0000 0000 0000 0000
00 01 0 0800 0025 0000 0000 0024
00 02 0 0800 0111 0013 0002 0038
00 03 0 0800 0462 0261 0092 0286
00 04 0 0800 0069 0376 0221 0127
00 05 0 0800 0000 0014 0025 0005
00 06 0 0800 0000 0001 0001 0001
00 07 0 0800 0000 0000 0000 0000
00 01 0 0900 0002 0003 0000 0035
00 02 0 0900 0065 0019 0016 0092
00 03 0 0900 0351 0150 0408 0475
00 04 0 0900 0094 0230 0364 0134

PEEK Classification & Speed Formats

