HIGHWAY SAFETY
INFORMATION SYSTEM

GUIDEBOOK FOR THE MINNESOTA STATE DATA FILES

Volume I:
SAS FILE FORMATS

March 2000
4th edition
(FHWA-RD-01-037

U.S. Department of Transportation
Federal Highway Administration

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INTRODUCTION

(NOTE: Changes from the previous edition of the Guidebook are shown in italics and bold.)

The Minnesota data system includes the following basic files:

- Accident data:
  - Accident File
  - Vehicle File
  - Occupant File
- Roadlog File
- Reference Post File
- Traffic File
- Intersection File
- Bridge (Structures) File
- RR Grade Crossing File

For ease of use, the three accident subfiles, the Roadlog File, and the Intersection File have been converted to SAS files. The Traffic file (volume data) and data from the Reference Post file (True Mileage) have been merged with the Roadlog file beginning with 1990 data, and no longer exist as separate files within HSIS. The Roadlog file prior to 1990 has only the traffic data merged. Raw file data are provided to the Highway Safety Research Center (HSRC) where they are retained as backup information. The documentation (variable listings, definitions, etc.) for these raw files and for the SAS files that are developed from them are available at Federal Highway Administration (FHWA) offices.

Beginning in 1994, the Highway Safety Information System (HSIS) was converted to a relational database for internal use. This database, using a SYBASE system, stores the data received from Minnesota and other states, and the data files for a given state are linked and manipulated using SQL language. However, this conversion from the original SAS-based system to the newer relational system is somewhat transparent to the end-user of the data since the output files produced by SYBASE for modeling and analysis will be SAS formatted. As in the past, we have continued to produce SAS format libraries for each of the variables in each of the files. Because it is envisioned that the majority of analyses will utilize these SAS files and formats, this Guidebook will concern these SAS files -- their formats, completeness, and quality. Single variable tables for key variables from each file will continue to be published in a separate Volume II document.

The <u>accident data</u> are in three separate subfiles, the first containing the basic accident information on a case-by-case basis, and then separate files containing information on vehicles and occupants (injured occupants in 1985-90, injured plus some uninjured occupants in 1991, and <u>all</u>

occupants beginning in 1992) in each accident case. The vehicle and occupant data (which includes pedestrians and bicyclists) can be linked to the basic accident data for a specific case using the accident report number and vehicle number. Again, please note the change in the file to all occupants for 1992 and later. The accident subfile can be linked to the other major files (e.g., Roadlog, Intersection/Interchange) using three common variables -- route-system, route-number, and reference point. Beginning in 1991 the Minnesota Department of Transportation (MnDOT) made extensive changes in their accident reporting system. These will be described in more detail in the later text.

Unlike an Accident File record which is referenced to a point on the roadway, each record on the Roadlog File contains information on a homogeneous section of roadway (i.e., a stretch of road which is consistent in terms of characteristics), with each new section being defined by a new beginning reference point. Each record on this Roadlog File contains current characteristics of the road system including surface type and width, shoulder and median information, lane information, etc.

The Reference Post (ATrue Mileage@) File received from MN contains "true mileage" information on some of the sections within the Roadlog File, primarily the Interstate and major arterials. This information is used in the calculation of the lengths of homogeneous sections in the Roadlog File where available. For sections where Reference Post File data do not exist, the section length is estimated by subtracting the beginning milepoints for two consecutive sections of roadway. In 1990, HSIS staff conducted comparative analyses to determine whether the lack of Atrue mileage@ information on some lower-order roadway sections significantly affects the section-length data and subsequent crash rate calculations. In summary, the analyses indicated that the use of length estimates based on milepoints (where Atrue mileage@ is absent) does not appear to result in a significant error B i.e., the use of the length estimates based on mileposts appears sufficiently accurate for analyses conducted with HSIS data. (A fuller description of these analyses and findings is available from HSIS staff.) Again, please note that beginning with 1990, pertinent data from the Reference Post File were merged with the Roadlog file and the entire file is no longer available as a separate file on the HSIS system.

The Traffic File contains estimated count information (yearly AADT's) for a series of count stations located on all roadways described in the Roadlog File. It is maintained by the eight different MnDOT District Offices. This AADT information can be linked with the sections on the Roadlog File using the reference point. This file also contains AADT's for heavy commercial vehicles which are defined as vehicles with two axles and six tires or larger. The file is updated on a two-year cycle, and indications are that these traffic count data are excellent for the trunkline system and fairly good for the county state-aid systems. Again, please note that traffic data were merged with the Roadlog File beginning in 1987. The Traffic File also still remains a separate file on the HSIS system for years 1987 thru 1989, but is no longer available as a separate file on the HSIS system after 1989.

The Intersection/Interchange File contains information concerning intersections on major roadways that are maintained by the eight different MnDOT Districts across the state. It contains a number of different variables including approach lane information, entering AADT, intersection control type, and added details for signalized intersections. The file will contain intersections of US/US, US/state, and all interchanges.

Due to established priorities of effort, HSRC staff did not work with the Bridge File or the Railroad Grade-Crossing File. As is the case with most States, the Bridge File data contain information on bridge structures across the State. The data are considered quite accurate since it is based on the federal bridge inventory. It is also noted that the MnDOT Bridge Division that updates this file has a file of pictures of each bridge that is greater than 10 feet in length. In a similar fashion, the Railroad Grade Crossing File is a file containing information on all grade-crossings in the State, and is prepared and maintained according to FHWA requirements.

Details of the Accident, Roadlog, and Intersection/Interchange files and the traffic data are presented in the following section.

DETAILS OF MAJOR FILES

The Accident Files

Minnesota law requires that an accident report be filed by the investigating police officer whenever there is injury in the crash or property damage of greater than $500. The property damage threshold increased to $1,000 in August, 1994. The accident data are controlled by the Department of Public Safety (DPS), where a group of coder/editors not only keys in the data, but also locates each of the accidents based on the inputs provided on the report by the investigating officer and a series of maps showing the route identification and locations of prominent features and intersections. While incorrectly coded locations are identified by MnDOT edit programs and are passed back to the coders for possible correction, DPS staff limitations have prevented correction of all such errors. Thus, from an engineering analysis standpoint, there remain some location errors in the system. However, given the relatively small percentage of location errors identified and the fact that the main result of these errors is to reduce the sample size of available accidents (a problem partially overcome by the large samples available for most HSIS-type analyses), the location information should be of higher quality than in most States. It is also noted that accidents that occur on interchange ramps are located to the center of the interchange. Thus, in bridge-related analyses, if the major route crosses over the minor route, the ramp accidents will be (erroneously?) located to the bridge.

MnDOT send an annual accident file to HSIS each year. Currently, there are ***thirteen*** years of accident data in the linkable Minnesota files obtained for the HSIS -- 1985-***1997***. ***Prior to 1991, the original data set received from Minnesota included approximately 90,000 accidents per year and approximately 170,000 vehicles per year. However, for use in the HSIS system, the "citizen reports" (i.e., code "0" under "Officer Type@) have been deleted due to both missing data and inherent biases in these reports. In addition, the very limited number of crashes which cannot be linked to the roadway file have also been deleted. This process has left approximately 71,000 - 81,000 crashes and 132,000 - 150,000 vehicles in the HSIS files for 1985-97.***

There is no clear pattern in the changes in the number of crashes across the years. Linkable, police-reported crashes were highest in 1989 and 1996. Based on conversations with MnDOT staff, both increases may have been due to increased snow/ice and related increases in crashes. Changes in the numbers of vehicles in the HSIS Vehicle subfiles track the changes in accidents very closely B there are no Aabnormal@ years. Indeed, the ratio of vehicles/crash is between 1.83 and 1.87 for this full thirteen-year span.

Beginning in 1991, the Minnesota Department of Public Safety made extensive changes in their accident reporting system. These changes affect both the coverage and accuracy of the data in the HSIS files. The changes that have had the most effect on the HSIS system are as follows: (1) changed computer platforms from IBM MVS to VAX (March 11, 1991) which changed data coding screens and codes; (2) changed the accident report form in January 1991; (3) initiated a state-wide campaign to promote the use of the new report forms. The effects of these changes are noticeable in both the 1990 and later occupant data. ***(Note that there may also be changes in the overall accident severity distributions beginning in 1995 and later, given that the property-damage-only reporting threshold changed to $1000 in August, 1994.)***

The Vehicle and Occupant subfiles are similar in format to those in other states. The Vehicle Subfile contains variables on both the vehicle (e.g., make, model, type, direction traveling, contributing factors), and on the driver (e.g., age, sex, physical condition). The Vehicle Subfile also contains information on a four-part sequence of events for each vehicle, which provides more detail on vehicle "paths" than do most state files. The Occupant subfile contains information on such descriptors as age, injury, position in vehicle, ejection, etc. for each occupant in the vehicle, including the driver. It is again noted that the occupant records are not total occupant records for years 1985-1989, but simply consist of those occupants who are injured in the crashes. For those earlier years, there are approximately 39,000 occupants in the file each year. While coding of uninjured occupants began in 1990, it appears that complete coding on all occupants is present in 1992 and later years. ***Except of this major change, the only other change in the Occupant Subfile across the time frame was in 1996 and later, when the number of occupants per vehicle increased by approximately 10% over the preceding years. Conversations with MnDOT staff indicate that they began adding additional Aplaceholder@ occupant records in this file so that the total number of records in the Occupant File for a given vehicle matched the Anumber of occupants@ for that vehicle as entered by the investigating officer. The assumption was that the officer would record the Acount@ variable correctly, but might not include data on each uninjured occupant. Based on the pattern in the file, our assumption is that these Aplaceholders@ were added beginning in 1996.***

Information related to data completeness and accuracy in these three subfiles is based on three sources -- conversations with Minnesota staff who use the data, information developed through past use of the data by HSIS staff and other researchers, and comparisons of a series of single-variable tables for key variables in each file with the same variables in all other years. This latter set of quality control checks is conducted each year that a new file is received from MnDOT.

A check of the percent "unknown" for each variable in the files indicated that, once citizen and "unknown-officer" reports are removed, almost all the variables studied show a very low percentage of unknowns or obviously miscoded variables -- usually around 1-3 percent of the total sample in each variable. The 1991 file seems to have a slightly higher percent of unknown codes than the earlier or later years, but the 1992 and later years percent seldom exceeds 4 percent.

In terms of data accuracy, a series of comparisons were made of variables which should have been somewhat similar on the accident file according to their definitions. In general, the variables were found to be internally consistent. For example, a comparison of the number of vehicle records with a count of single and multi-vehicle crashes matched quite accurately. The urban/rural codes matched well with "investigating officer" codes, and the location of pedestrian/bike accidents matched well with accident type. The variable indicating "interchange-related" compared well with the number of interchange elements noted in a separate variable, and counts of traffic control devices in accidents were found to match well with the number of intersection-related crashes.

However, there are two variables whose coding formats may lead to inconsistent or erroneous data. First, (like most other States) the driver-related "physical condition" variable on the vehicle subfile has categories which are clearly not mutually exclusive. For example, while only one code is allowed, a driver could be both "under the influence" and "ill" or "handicapped". Conversations with Minnesota accident officials indicate that the officers are most likely to code alcohol involvement if a choice is present. Second, the variable related to "safety equipment" in the injured-occupant subfile includes a mixture of codes related to occupant restraints, motorcycle helmet and headlight use, and pedestrian clothing colors. As verified by Minnesota, the layout of this variable makes it very difficult to code correctly, and they are planning to modify this variable in the future. For now, the data are suspect.

In addition, inconsistencies were noted in comparisons of three variables related to the type of accident -- "accident diagram", "accident type", and "vehicle movement" in the accident. Conversations with Minnesota accident records officials indicated that the "accident diagram" variable is often recoded (corrected) by coders who review each of the accident reports, while the coding for "accident type" is captured as recorded by the officer. The coding for "vehicle movement" is (subjectively) assigned by the coders to reflect the nature of movement based on the officer's description. (Note that "vehicle movement" was not coded for 1990 and later data.) Since the "accident diagram" variable describes the general nature of the vehicle movements in the crash, it would be expected to be consistent with the vehicle movement prior to accident. However, there were major inconsistencies noted in the comparison of the two variables. There are many more possible categories within the second variable related to vehicle movement, and there were notable inconsistencies between the percentages within accident types that would be expected to match certain vehicle maneuvers. In this case, because it is corrected by the in-house coders, it may be somewhat more accurate to use the accident diagram variable for this application.

In a similar comparison of "accident diagram" with "accident type" (when driver self-reports are deleted), consistency was found for many of the categories which should be related. For example, 90 percent of the accident diagram "ran-off-road left" codes were noted under accident type to be either collisions with fixed objects or rollovers. However, further examination revealed that the accident diagram variable provides the general nature of the crash without reference to what is involved. For example, for those crashes coded as "head-on" in the accident diagram variable (which one might assume means head-on with a second moving vehicle), 18 percent were coded as "collision with fixed objects" and ***7*** percent were coded as "collision with parked vehicle" in the accident type variable. In like fashion, ***13*** percent of "sideswipe - opposite direction" under the accident diagram variable were "collisions with parked vehicle" in the accident-type variable. Clearly, if the analyst is interested in "what" is struck (e.g. another vehicle) in what fashion (e.g. head-on), then some combination of both variables should be used.

Further HSIS analyses using the "accident diagram" variable have also indicated that the "head-on" and "sideswipe opposing" codes reflect the direction of the opposing vehicles immediately prior to impact rather than their initial direction. While this coding procedure is correct, it does affect analyses in which the researcher is attempting to isolate, say, head-on or sideswipe crashes involving opposing vehicles. For example, many of the "head-on" or "sideswipe" crashes on multilane facilities, which one might assume to be cross-median crashes, actually involve vehicles originally traveling in the same direction where one of the vehicle spun around (perhaps due to ice or wet pavement) and struck the other vehicle front-to-front or side-to-side. Again, this does not represent a coding error (since no other alternative is easily proposed), but will affect certain analyses where the type of crash is used to imply something about original direction of travel.

Additional HSIS analysis indicates less than total agreement between two variables which should define whether or not an accident is intersection-related -- "intersection relationship" and certain groups of codes within "vehicle movement". Note that the former is coded by the officer on the scene, and the latter is coded in-house by coders based on the sketch and narrative. Since there is no clear choice between the two, one possibility is to use a combination of the two (requiring both to be coded as "intersection-related"), a procedure which would result in a conservative definition of a crash's relationship to an intersection.

Use of the LOC_TYPE variable concerning "Intersection Relationship" has also indicated some problems with the data related to interchange ramps on divided roadways. A full discussion of the problem is found in the "NOTE" under the variable in the SAS formats.

Finally, the changes in the 1991 accident report system affected the consistency and accuracy of the data in comparison to earlier years. Certain categories in specific variables changed in either frequencies (e.g., "collision with vehicle other roadway" in ACCTYPE increased), and coding (e.g., "not applicable" changed to "no object struck" under the "fixed object struck" variable for 1991, but not for 1992 and later). When questioned about these differences in the data, Minnesota staff indicated that (1) some data entry edits were not in place in the early use of the new system, allowing inclusion of some invalid data values for some variables; (2) the new system has automatic default values for data entry screens, and in initial use of these screens, the data entry personnel may not have replaced the default values with actual codes from the accident report form; (3) wording of the accident report form changed for some variables, which could have led to different interpretations of the appropriate code to check on the new form; and (5) the new accident report form increased the number of "other" and "unknown" categories available for use by the officer. It should also be noted that the code changes for data in 1990 and 1991 made some variables inconsistent with the prior years of data (1985-89). To correct this problem, where possible, 1990 and 1991 data with code changes for existing variables were re-coded to match earlier years.

In summary, analysis of the Minnesota accident files indicated that the files are, in general, quite accurate and internally quite consistent with few exceptions. The 1991 changes did result in some new codes and some inconsistency with prior years= data, particularly for the 1991 data. The 1992 and later data appear to again be consistent with fewer uncoded cases than in 1991. Where high percentages of uncoded data or possible inaccuracies/inconsistencies have been found, a "NOTE" has been included under the variable listing in the later format section of this Guidebook.

<u>The Roadlog File</u>

As noted above, the Roadlog file contains current characteristics of the road system. The 134,000-mile system contains approximately 12,000 miles of the primary Atrunk@ roadway, 33,000 miles of additional state-maintained county and municipal systems, and 89,000 miles of (non-state maintained) county and local roads. The table below provides a breakdown of the 51,200 miles of paved, two-way roadway and 83,000 miles of >other= roadway in the state (i.e., either unpaved or county/local roads without complete inventory information)..

The state maintained portion of the file is basically updated daily based on construction and maintenance plans and input from the local division engineers. Data changes are extracted from these plans and are activated in the system on the date that the project has been completed. An "effective date" is placed on the file at that time to indicate that one or more of the variables for that roadway section have been changed.

Table 1. HSIS roadway mileage by roadway category (1996 data).

Roadway Category	Mileage
Urban freeways	345.49
Urban freeways < 4 Lanes	3.59
Urban multilane divided non-freeways	666.60
Urban multilane undivided non-freeways	519.88
Urban 2 lane highways	11,616.20
Rural freeways	706.10
Rural freeways < 4 lanes	0.00
Rural multilane divided non-freeways	825.16
Rural multilane undivided non-freeways	60.21
Rural 2 lane highways	36,444.34
Other	82,906.66
Total	134,094.22

Again, the DPS makes a frozen copy of the roadlog file annually for submission to HSIS. However, unlike other states, this is not done at the end of the calendar year, but at the time when the accident file is finalized for a preceding year. This is usually between March and July of the following year. The file received by HSIS from MnDOT contains approximately 303,000 records. Approximately 103,000 of these records are "false" records used to signify ends of routes, beginnings of coinciding routes, gaps in sections, and other records needed to allow analysis of the files. These "false" records are flagged by values in the "Remarks" variable, and, thus, any record with blanks in this variable (approximately ***220,000*** "true" records) represents a section of "homogeneous" roadway where characteristics remain constant. ***For the 1994 and later HSIS files, all Afalse@ records are deleted.***

These 220,000 records cover approximately 134,000 miles of roadway. The HSIS system currently contains ***seven*** Roadlog files, ***representing current characteristics in 1989-1992 and 1994-1996. A 1998 file is being processed. (The 1987 file, which was originally in the HSIS***

system, could not be reformatted for consistency in recent file modifications. Thus, it is no longer a part of the system. The 1993 file was omitted from the system due to missing mileage in the raw file. The 1997 file received could not be linked with crash data. The analyst can link the 1997 crash data with either the 1996 or 1998 files.) Because of the complexity of the necessary programming, computer checks for changes in each variable between years were not conducted, but conversations with Minnesota staff indicate that only a very small proportion of the file would be expected to change each year.

Two new variables, RODWYCLS and MVMT, have been created by HSIS staff in the roadway segment file of each of the HSIS states. The RODWYCLS (Roadway Class) variable is based on the combination of rural/urban, access control, number of lanes and median type variables. This variable classifies each roadway segment into one of ten roadway types described in the later AFormat@ section. This variable is also included as an accident-file variable by matching each crash to its corresponding roadway segment. The MVMT variable (Million Vehicle Miles of Travel) is calculated for each segment in the roadway file by multiplying the segment length, AADT and 365 days in a year, and dividing by one million. Both these variables were created in response to inquires from data users, whose most frequent questions have concerned either crash frequencies or rates (per MVMT) for one or more of these roadway classes. Frequencies distributions of selected crash variables by RODWYCLS for the latest year of the data are also included in Volume II of each States= Guidebook.

The accuracy and completeness of the file was again assessed through conversations with Minnesota staff, a series of single-variable tabulations for 30 key variables which are compared across years each time a new file is received, and past HSIS analyses with the data. Minnesota staff feels that, in general, the updating system and the quality of the data are excellent on 12,000 miles of the primary roadway, good on an additional 32,000 miles of state-maintained systems, and adequate or "average" on an additional 89,000 miles of county and local roads.

Single-variable runs were then made for variables related to shoulder type and width, median type and width, access control, surface type and width, divided/undivided designation, functional class, design speed, and urban/rural coding. With few exceptions, the runs indicated very low percentages of "unknown" or "not applicable" codes. Two variables related to "design speed" and "storm sewers" have very high proportions of unknowns. As expected, since they only relate to the approximately two percent of the mileage that is on divided highways, variables related to "Road 2" and those related to medians are characterized by very high proportions of "not applicable." Finally, variables related to left and right shoulder type and width and surface type and width for Road 1 all contain approximately 12 percent of "not applicable" values in the 1990 and earlier files, and approximately 5 percent in the later files. Further conversations with Minnesota staff and computer runs revealed that in most cases, "not applicable" actually means "not coded". However, both information from Minnesota and a cross-tabulation of two of the key variables (shoulder type and surface type) with the variable "road system" in the 1987 file indicated that approximately 92% of these "not applicable (not coded)" sections were on the lower-order township or municipal roadways. All the higher order routes were coded a very high proportion of the time.

With respect to data accuracy, cross checks of the similar variables on the file such as shoulder width and type on different sides of the roadway, pavement type on the divided sections of highway, and others indicated quite consistent data across the variables once the uncoded values were removed. Thus, the file appears accurate, as would be expected from the continuous update procedures in place.

Finally, there is the remaining issue of how to handle the linkage of accidents with divided roadways where the Roadlog information is divided into "roads 1 and 2". Unfortunately, because there is no information on the accident report related to "road 1 or 2", there is no simple way of linking a given crash with the proper piece of pavement. As part of their merging system, Minnesota has attempted to develop some logic for such an assignment based on the direction of travel from the crash form and the mileposting direction from the Roadlog file. However, they are not satisfied that even their best attempt at such logic is accurately assigning the accidents.

We further examined this issue by printing out 200 records related to divided highways in the 1987 file and compared the individual variables for road 1 with road 2 which are related to right shoulder width, right shoulder type, surface width, surface type, left shoulder width, left shoulder type, and the presence or absence of curbs on one or both sides of the roadway. The question being examined here was whether or not there were significant differences between, say, the right shoulder width or type on road 1 versus the same variable for road 2. If little difference is found, it would be possible to simply link any accident occurring on a divided highway section with the characteristics of road 1.

The analysis indicated very little difference between most of the variables on the two roads. Right and left shoulder type, shoulder width, and curb presence on the two roads "disagreed" in only 1 - 4 percent of the cases. The only major area of disagreement was in the variable related to "surface width" for the two roads, where differences were noted in 26 (13%) of the records. Of the

26 disagreements, three surface widths disagreed by two feet, five disagreed by 3-5 feet, 13 disagreed by 10-14 feet (an additional lane), and 5 disagreed by 15 to 20 feet.

Based on these findings, we suggest that two options exist for the analyst in future efforts. First, in all cases where the "divided and one-way code" indicates a "divided rd1 and rd2," programs could be developed to check for differences between road 1 and road 2 values for the variables in question, and records could be dropped from the analysis where differences exist. Or second, for all variables except surface width, the analyst could simply link accidents on divided roadways with "road 1" data. We feel that this second option is quite defensible given the low "disagreement rate" (which would most likely be lower than the error rate related to crash data). With respect to surface width, we suggest that the disagreeing records be dropped from the analysis since there is no good way to accurately link accidents with the appropriate surface width.

Finally, while the basic Roadlog File described above does not contain data on horizontal or vertical alignment, we note that under a separate FHWA contract, alignment data were collected on a sample of approximately 700 miles of two-lane rural paved roads in Minnesota. These data can be made available by the HSIS staff if needed in research projects.

Traffic Data

The Traffic File sent by MnDOT contains information related to AADT data for all roadway sections across the state. For ease of analysis, HSIS programs link these data with the Roadlog file, producing an estimated AADT for each homogeneous section in that file. Details of this linkage process are at the end of this section.

The traffic information is manually derived from sample and continuous counts taken at temporary and permanent count stations throughout the State. It contains total AADT's and AADT's for heavy commercial vehicles which are defined as vehicles with two axles and six tires or larger.

Like other states, Minnesota develops traffic volume estimates based on automatic traffic recorder stations (ATR=s) and short-term (48-hour) Acoverage@ counts. There are approximately 120 ATR=s which count traffic 24 hours per day, 365 days per year across the various roadway types. These are located on all classes of both rural and urban highway, with approximately 55% of the locations being on urban roadways and 45% on rural roadways.

In addition, there are approximately 34,000 coverage (temporary) count locations across the State where 48-hour counts are made. Approximately 12,000 of these locations are covered each year. For the trunk highway system (including Interstate roads), these counts are made on a two-year cycle, as are counts on roads within the Twin Cities Metro Area. For the lower-order County State-Aid Highways and the Municipal State-Aid System outside the Twin Cities Metro Area, the counts are made on a four-year cycle.

The seasonal adjustment factor for a given coverage count is based on counts made at ATR=s which are similar to the coverage count location. Here, ATR=s are grouped into the following classifications:

Outside (i.e., Non-Metropolitan area)

- X Rural, farm to market roads
- X Rural, weekend recreational road
- X Rural, summer peak recreatio nal road
- X Municipal, non-recreational road, under 5000 population
- X Municipal, non-recreational road, over 5000 population
- X Municipal, recreational road, under 5000 population
- X Municipal, recreational road, over 5000 population

Metropolitan Area

- X High commuter route
- X Commuter shopper route
- X Low recreational route

Seasonal adjustment factors, based on the data for the previous three years, are developed for each classification and are applied to all coverage counts collected at locations within that classification.

For the "non-count" years, a growth factor is applied to the previous year's data based on changes in counts at the ATR stations located on the same functional class of roadway. When new data are available at the end of the next count cycle, these data for the interim, non-count years are readjusted to represent the average of prior and subsequent count years (e.g., a 1987 "non-count" year estimate based on the growth factor would be readjusted to represent the average of 1986 and 1988 counts at that location as soon as the 1988 count year is completed).

In developing AADT estimates for each section of roadway, there are sometimes road sections with no historical count data (e.g., lower order local facilities including township roadways and local streets). In these cases, an original Abaseline@ estimate is based on ATR counts on lowest order roadways with the lowest counted volumes. Growth factors for these uncounted sections are also based on this same ATR group.

MnDOT also collects vehicle classification counts at about 300 sites per year. These are 16-hour (e.g., 6 AM to 10 PM) manual classification counts usually over two different days. In addition, portable vehicle classifiers are deployed to collect 48-hour data. Currently, there is no program to seasonally adjust the classification counts. There are an additional 25 Weigh-in-Motion stations statewide that collect classification data. However, these data are used less than the manual classification counts.

The new count data are placed in the Traffic file within the first six months of the subsequent calendar year. While the Traffic File can also be thought of as a "section" file (with a specified AADT at the beginning count station being assumed constant over the entire section), it differs from the Roadlog File to which it will often be merged in that the beginning and end points (termini) are often located at different points on the roadway. The linking variables are again the route system/route number/reference point (milepost).

There are approximately 208,000 records on the file, but these do not represent a one-to-one match with the 220,000 "true" records on the Roadlog file. Often there are Roadlog sections with multiple Traffic File records (i.e., multiple count stations), and often there are Roadlog sections with no Traffic File records (i.e., corresponding count stations) located within the section.

Each raw file record contains up to 30 years of AADT information (with the related year "attached"). Thus, to determine the average AADT for a given year for a series of sections on a given route, (1) the traffic section reference points must be matched with the appropriate Roadlog sections by comparing the reference point with the beginning and ending milepoint on Roadlog sections (with the ending milepoint being "assigned" as being equal to the beginning milepoint on the succeeding section), (2) the appropriate yearly AADT for each contained Traffic file record must be extracted, and (3) the counts must be averaged for sections where multiple Traffic file records exist. If no Traffic file record exists for a given Roadlog section, then the section AADT is assumed to be equal to the AADT at the previous (upstream) traffic section <u>on the same route</u>. (This is the assumption made by Minnesota and by HSRC programs. However, other procedures could be followed in calculating AADT if felt to be more appropriate for a given research question.) Any AADT assignment program developed <u>must not</u> carry over counts from one route to another, a mistake that can easily be made since the Roadlog File is a continuous file in route order. Obviously, averaging traffic over more than one year will require additional programming.

Currently, there are two HSIS SAS-formatted Traffic Files -- one developed for 1987 and earlier data, and one containing data for only 1988 and 1989. Again, please note that traffic data were merged with the Roadlog File for years 1989, 1990-1992, and 1994-1996. The Traffic File still remains a separate file on the HSIS system for years 1987 thru 1989. It is no longer available as a separate file on the HSIS system after 1989.

The first (1987) Traffic File is similar to the raw file in that it contains up to ten years of data with 1987 counts being the most recent data. The second (1988-89) file contains only counts for 1988 and 1989. Each record on the file contains information on traffic counts for one year for a given location. To combine across years for a given counter location, records with the same location information can be merged.

As noted above, to make the AADT information even more easily usable in subsequent analyses, HSRC developed a linking program which links the basic AADT information from the SAS Traffic File with the Roadlog file to produce a separate single "Average AADT" variable for each Roadlog section on each Roadlog file. Where necessary, averaging across traffic sections in a given Roadlog section for a given year, and "carrying down" AADT information from the prior record has been done in this linkage program. The 1988-89 traffic data are linked with the 1989 Roadlog file for use with the 1988-89 accidents. In this case, the AADT variable on the 1989 Roadlog file represents an average AADT over that two-year time period. Different AADT's (say for individual accident years) could be developed by modifying the existing computer program.

Since it is not possible to perform an independent "check" of the accuracy of the AADT information, it is assumed that the procedure in place in Minnesota to monitor count stations and update the file provides adequate information. As indicated above, these are felt to be excellent data for the trunkline system where they are updated on a two-year cycle. There is also fairly good data for the county state-aid systems which are generally updated on a four-year cycle.

<u>The Intersection/Interchange File</u>

As noted above, the Interchange/Intersection File is a file of intersections on major roadways that are maintained by the eight different MnDOT Districts across the state. The file will contain intersections of US/US, US/state, and all interchanges on the Interstate roadways. The files currently available include years 1987 and individual files for years ***1990-96.*** There are individual records in the file for approximately 550 interchanges, 6800 intersections, 800 intersections within interchanges, and 5900 railroad grade crossings.

Conversations with a limited sample of current district traffic engineers and a retired State Traffic Engineer who helped "design" the system indicate that while the criteria for choosing the "original" intersections may have differed slightly from district-to-district (since no criteria were actually defined), the overall purpose for building the file was to allow for subsequent identification of high-accident locations. Thus, originally, all intersections which were to be examined for accident problems were included, which appears to mean all "major" intersections, regardless of past accident problems. Once on the file, an intersection has remained so that it's accident frequency and rate can be examined each subsequent year. (Thus, "low accident sites" for a given year are not dropped from the file.) In summary, while not a "random" sample of major intersections, the original (or subsequent) intersection choice does not seem to greatly bias the file for analysis purposes.

There is no regular system of update, but changes are noted when they are found. One district now seems to have well updated data while the other districts may or may not have data updated on a regular basis. Using this file, accident rates for the intersections can be developed. It is noted that the file is characterized by intersections of one roadway with all of the roads that cross it. Since location information is present for all crossing routes, it is possible to link all routes with the Roadlog file information.

As noted above, there are approximately 550 interchange records within the file. Each interchange will have a primary record, and for some interchange types (primarily diamond interchanges), there will be additional supplemental records on each Aintersection within interchange.@ There are approximately 760 of these supplemental records in the file. These supplemental records will also contain additional information the type of interchange element (e.g., mainline between ramps, exit ramp, intersection at ramp terminal on crossing roadway, etc.) More detail on the coding is provided under ELEM_NBR in the later format section.

Each SAS intersection record in the HSIS file contains three different types of "subrecords": (1) a set of "general" variables describing the entire intersection (e.g., intersection type), (2) a set of "reference" variables for each of six possible incoming routes, referred to as "segment" variables, and (3) a set of variables for up to two "legs" (or approaches) per route (e.g. approach AADT, speed limit).

Because of the complexity of the file, there will be times when the analyst wishes to look at routes rather than on individual intersection Alegs.@ For this reason, HSIS staff have developed programs which will produce a modified file named the Intersection Route File. This file consists of a record for each route of the intersecting routes of an intersection. Many of the variables are still the same as in the basic Intersection File. The major difference in this file is that the variables represent descriptions for each route. The "In" and "Out" descriptors denote the incoming and outgoing routes of each leg. This file format can be produced for the user by HSIS staff on request.

The completeness and accuracy of the data in these files were again assessed through the above-noted conversations with Minnesota system designers and users, examination of single-variable tabulations for key variables, HSIS analyses, and limited cross-checking of data in the files versus videologs of intersections found in the Minnesota videodisk system.

Examination of the single-variable tables indicates that while there is a higher proportion of uncoded data than in other major files, adequate coding exists for most variables. It is noted that there is a significant amount of missing AADT data (10 to 30 percent) in the "segment 2, leg 2" records -- records usually related to the second (opposing) approach of the minor crossing roadway. AADT's are usually present for both legs of the major roadway and for the first leg of the minor roadway. One solution that has been used thus far is to assume that the missing leg 2 AADT is equal to the leg 1 AADT on the same route.

More importantly, we have determined from analyses and conversations with MnDOT staff that the majority of the AADT data in the Intersection/Interchange file are not current -- they do not match the year of the file. The user can determine which year the AADT was collected for each leg from the "AADT Year" variable attached to each leg. However, we have found that the "AADT Year" will very seldom be the current (file) year, and that the year of the AADT count can be different for different legs of the same intersection. For major routes, more recent AADT information can be extracted from the Roadlog File by linking the intersection leg with the appropriate roadway segment in that file. Unfortunately, we cannot suggest a method for "updating" the AADT data to later years for crossing roadways not found on the Roadlog file. Since multiple years data are often shown in the file, the user may be able to develop a "trend-related update", but we cannot assure that the estimates will be correct.

With this AADT exception, the file is complete in that there are few true "missing" or miscoded values. Other variables seem to be updated in a more timely manner. There are large number of "not applicable" codes within many of the variable, but this appears to result from the fact that some of the variables are specific to special types of intersections (e.g., intersections within interchanges, signalized intersections, pedestrian crossings).

The preliminary HSIS analyses have indicated some additional problems with a limited number of variables. As with all files, incomplete coding or apparent inaccuracies are detailed in a ANOTE@ under the pertinent variable in the later SAS format section.

In a final check of accuracy, the descriptive variables for a significant sample of the intersections on the file were manually compared to a videotaped picture of the intersection. The picture was located in the Minnesota videodisk system which covers all major Minnesota routes, and which is available at FHWA for research efforts. In general, it was found that the data on the Intersection File are accurate and reliable for interchanges, signalized intersections, and major unsignalized intersections (e.g., unsignalized intersections with turn lanes on major routes). The comparison pointed out that there are cases in which more than one intersection is located on the File at the same milepoint. The videolog indicated that this usually happens when there are intersections within an interchange, as would be the case with diamond interchanges. This situation can be detected using the TYPE variable.

In general, while not perfect, the Intersection/Interchange File is clearly adequate for analysis purposes. The only major problem is with the timeliness of the AADT data.

Issues Related to Merging Files

According to MnDOT, HSRC was to receive "linkable" accident data. This was true almost all of the time. However, during later merging efforts by HSRC programmers, it was discovered that some route numbers on the accident file did not exist on the Roadlog file. MnDOT confirmed that they had only recently discovered the problem and that it was unlikely that they would be able to restore the correct location of those accidents. This problem represented less than 1% of the total accident file. Minnesota indicated that the "bad" accident routes were likely to have route numbers with the last three or four digits repeating (i.e., 190008888). HSRC runs confirmed this in many, but not all, cases.

As noted above, the accident data are subdivided into three subfiles -- accident, vehicle and occupant. These subfiles can be linked together using the "case number" variable (i.e., CASENO) present in each of the three files. When linking the occupant subfile, the additional linking variable "vehicle number" (i.e., VEHNO) must match so that the occupants are associated with the vehicle in which they were traveling. To link the Vehicle subfile with the Accident alone, first sort both subfiles by case number. To link the Occupant file with the other two subfiles, first sort both the Vehicle subfile and Occupant subfile by case number and vehicle number. Next sort the Accident subfile by case number. Alternatively, the separate subfiles can blinked by specifying an SQL JOIN operation with the constraining condition that case number and vehicle number from each table are equal. SQL processing does not require the data to be presorted and the output will not be in any particular sort order unless ORDER BY is specified.

The Accident subfile can then be linked with the Roadlog File using information related to route system, route number, and milepost on the route. The actual linkage variables on the Accident file which are used in the merging operation are RTSYSNBR (a combination of route system and route number) and MILEPOST. The linkage variables on the Roadlog File are BEGMP, ENDMP, and RTSYSNBR.

To prepare the Accident subfile for linking with the Roadlog File using a SAS data step process, the analyst must sort both the Accident and the Roadway File into location order by RTSYSNBR and MILEPOST on the Accident file and by RTSYSNBR and BEGMP on the Roadlog File. Similar sorts would be done with other files to be merged. For the alternative SQL join, the analyst must specify an exact match on RTSYSNBR from both files and a range match where MILEPOST occurs between BEGMP and ENDMP

To link the Accident File with the Intersection/Interchange File requires similar logic, but somewhat more file manipulation. Again, the basic linkage variables are route system, route number, and milepost.

For the primary route within the Intersection/Interchange File (i.e., the initial reference route identified in the Ageneral@ variables), route system, and route number have already been combined into INT_SYNB and reference point information has been converted to MILEPOST. Thus, the linkage is similar to the Roadlog file linkage. However, matching crashes (or Roadlog information) to the individual Asegment@ variables which define all possible crossing routes is somewhat more complex. Here, the Intersection File does not contain the combined route/system variable (INT_SYNB), so the two individual variables (RTE_SYS, RTE_NBR) must be combined before matching. In addition, the milepost variables must be derived from the AReference Point@ variable (REF_PNT). The REF_PNT variable consists of 10 bytes (i.e., 050+00.900). The first three bytes is the "reference post" and the last three bytes is the offset from the reference post. To develop the milepost variable, bytes 5-6 will need to be removed (i.e., 50.900). Once these new variables are formed, the same linking logic described above can be used. Note that programs to carry out these conversions and file linkages have been developed by HSIS staff and can be obtained from the staff when needed.

Finally, where appropriate and possible, a format which defines categories within a given variable has been developed for HSIS SAS variables. These categories are shown in the pages below. If you are a SAS user and wish to receive a formatting program which includes these SAS formats (with linkage to the pertinent variable name), please request these from the HSIS staff who provides the data file to you.

MINNESOTA CONTACTS

HSIS State Liaison -- Rosario Adiarte (651-297-2888) -- Ms. Adiarte is our main contact within the state of Minnesota when questions arise concerning the Minnesota State Transportation Information System and files. She is the Director of the Transportation Information Management Section of the Minnesota DOT.

Roadway file information -- James B. (Jim) Grones (651-296-1200) is the primary contact person for questions related to the basic roadway inventory data. James Muske, Transportation Data Section Director (651-296-1665) can also be contacted.

Interchange/Intersection information -- Lauren Hill (651-284-3455) -- Mr. Hill the Minnesota Traffic Safety Engineer, is the primary contact for questions concerning the interchange/intersection file data maintenance and Minnesota DOT's highway safety improvement program.

Accident data -- Robert Hoemke (651-296-2045) -- Mr. Hoemke is in charge of key punching and coding for all accident reports in the Department of Public Safety. Thus, he is the main contact for questions related to data in the accident file. Ron Spika (651-284-0070), Director, Accident Records and No Fault Compliance Unit, Department of Public Safety, can also be contacted.

Accident analysis -- Alan Rodgers (651-296-9489) -- Mr. Rodgers (612-297-4516), also of the Department of Public Safety, is the prime contacts for questions regarding analysis of the accident data -- how the accident data are used, and issues related to it=s use.

Traffic data -- Curt Dahlin (651-296-6846) -- Mr. Dahlin is the main contact in the MnDOT office in charge of all traffic counts.

Video Log Data -- Mike Gillen (651-284-3505) and Gaylene Bissonette (651-284-3431) are the contacts for information on the video log/videodisk system in MnDOT Traffic Engineering.

COMPOSITE LIST OF VARIABLES FOR MINNESOTA HSIS FILES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
AADT	CALCULATED AVERAGE AADT	Roadlog	NUM	I-67	II-181
AADT111	SEGMENT 1, LEG 1, YEAR 1 AADT	Intersct-chg	NUM	I-103	
AADT112	SEGMENT 1, LEG 1, YEAR 2 AADT	Intersct-chg	NUM	I-103	
AADT113	SEGMENT 1, LEG 1, YEAR 3 AADT	Intersct-chg	NUM	I-104	
AADT114	SEGMENT 1, LEG 1, YEAR 4 AADT	Intersct-chg	NUM	I-104	
AADT115	SEGMENT 1, LEG 1, YEAR 5 AADT	Intersct-chg	NUM	I-104	
ACC_DATE	DATE ACCIDENT OCCURRED	Accident	CHA(8)	I-29	
ACCDIGM	DIAGRAM OF ACCIDENT CODE	Accident	NUM	I-29	II-3
ACCESS	CONTROL OF ACCESS	Roadlog	NUM	I-67	II-183
ACCTYPE	TYPE OF ACCIDENT	Accident	NUM	I-29	II-5
ACCYR	YEAR ACCIDENT OCCURRED	Accident	CHA(4)	I-30	
ADLN_RD1	ADDITIONAL LANES - ROAD 1	Roadlog	CHA(1)	I-67	II-184
ADLN_RD2	ADDITIONAL LANES - ROAD 2	Roadlog	CHA(1)	I-67	
ADTYR111	SEGMENT 1, LEG 1, YEAR 1	Intersct-chg	CHA(2)	I-103	
ADTYR112	SEGMENT 1, LEG 1, YEAR 2	Intersct-chg	CHA(2)	I-104	
ADTYR113	SEGMENT 1, LEG 1, YEAR 3	Intersct-chg	CHA(2)	I-104	
ADTYR114	SEGMENT 1, LEG 1, YEAR 4	Intersct-chg	NUM	I-104	
ADTYR115	SEGMENT 1, LEG 1, YEAR 5	Intersct-chg	CHA(2)	I-104	
AGE	AGE OF INJURED/KILLED OCCUPANT	Occupant	NUM	I-59	II-165
AMBL_NBR	AMBULANCE NUMBER	Accident	CHA(6)	I-30	
AP_SPD11	SEGMENT 1, LEG 1, APPROACH SPEED LIMIT	Intersct-chg	NUM	I-104	
APCNTL11	SEGMENT 1, LEG 1, APPROACH TRAFFIC CONTROL	Intersct-chg	NUM	I-105	
BAS_TKR1	BASE THICKNESS - ROAD 1	Roadlog	CHA(3)	I-68	
BEGMP	CALCULATED BEGIN MILEPOST	Roadlog	NUM	I-68	
BIRTH_DT	BIRTHDAY	Occupant	CHA(8)	I-59	
BRK_CD	BREAK CODE	Roadlog	NUM	I-68	
CASENO	ACCIDENT NUMBER	Accident	CHA(11)	I-30	
CASENO	ACCIDENT NUMBER	Vehicle	CHA(11)	I-45	
CASENO	ACCIDENT NUMBER	Occupant	CHA(11)	I-59	
CNTL_CAT	CENTRAL OFFICE CATEGORY	Intersct-chg	CHA(2)	I-93	
COLOR1	COLOR OF BODY	Vehicle	CHA(1)	I-45	
COLOR2	COLOR OF ROOF	Vehicle	CHA(1)	I-45	
COMM_ADT	CALCULATED AVERAGE COMMERCIAL AADT	Roadlog	NUM	I-69	II-186
CONTRIB1	FIRST CONTRIBUTING FACTOR	Vehicle	NUM	I-45	II-119
CONTRIB2	SECOND CONTRIBUTING FACTOR	Vehicle	NUM	I-45	II-123
CORN_RPT	CORONER REPORT RECORD	Occupant	CHA(1)	I-59	
COUNTY	COUNTY	Accident	NUM	I-30	
COUNTY	COUNTY	Roadlog	NUM	I-69	
CURB1	CURBS - ROAD 1	Roadlog	CHA(1)	I-69	II-188
CURB2	CURBS - ROAD 2	Roadlog	CHA(1)	I-69	
DAMSEV	VEHICLE DAMAGE SEVERITY	Vehicle	CHA(1)	I-46	II-127
DESC_	INTERSECTION DESCRIPTION	Intersct-chg	NUM	I-88	
DIRECT11	SEGMENT 1, LEG 1 DIRECTION	Intersct-chg	NUM	I-103	
DIST_CAT	CATEGORY ASSIGNED BY DISTRICT	Intersct-chg	CHA(2)	I-93	
DIV_CODE	ROAD DESIGN	Accident	NUM	I-30	II-7
DL_CLASS	DRIVER LICENSE CLASS	Occupant	CHA(1)	I-60	

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COMPOSITE LIST OF VARIABLES FOR MINNESOTA HSIS FILES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
DL_STATE	DRIVER LICENSE STATE	Occupant	CHA(2)	I-60	
DL_WITHD	DRIVER LICENSE WITHDRAWAL	Occupant	CHA(1)	I-60	
DRIV_REC	DRIVER RECOMMENDATION	Occupant	CHA(2)	I-60	
DRV_AGE	AGE OF DRIVER	Vehicle	NUM	I-46	II-128
DRV_INJ	DRIVER INJURY	Vehicle	CHA(1)	I-47	II-131
DRV_SEX	SEX OF DRIVER	Vehicle	CHA(1)	I-47	II-132
EFEC_DTE	DATE OF ACCIDENT GEOCODING	Intersct-chg	NUM	I-94	
EJECT	EJECTION FROM VEHICLE	Occupant	NUM	I-60	II-168
ELEM_NBR	INTERCHANGE ELEMENT CODE	Intersct-chg	CHA(3)	I-88	II-235
ENDMP	CALCULATED ENDING MILEPOST	Roadlog	NUM	I-69	
EVENT1	SEQUENCE OF EVENT -1	Vehicle	CHA(2)	I-48	II-133
EVENT2	SEQUENCE OF EVENT -2	Vehicle	CHA(2)	I-48	II-136
EVENT3	SEQUENCE OF EVENT -3	Vehicle	CHA(2)	I-48	
EVENT4	SEQUENCE OF EVENT -4	Vehicle	CHA(2)	I-48	
FAT_NUM	FATALITY NUMBER	Occupant	CHA(4)	I-60	
FATLDATE	FATALITY DATE	Occupant	NUM	I-61	
FED_AID	FEDERAL AID SYSTEM	Roadlog	CHA(1)	I-69	II-189
FED_SYSD	FEDERAL AID SYSTEM - DESIGNATED	Roadlog	CHA(1)	I-70	II-190
FED_SYSR	FEDERAL AID SYSTEM - REGULAR	Roadlog	CHA(1)	I-70	II-191
FIRE	FIRE IN VEHICLE	Vehicle	CHA(1)	I-48	II-139
FUNC_CLS	FUNCTIONAL CLASS	Roadlog	NUM	I-70	II-192
GEN_ENIV	GENERAL ENVIRONMENT	Intersct-chg	NUM	I-92	II-240
H_COUNT	NUMBER OF COUNT STATIONS PER SECTION	Roadlog	NUM	I-70	
HAZMAT	HAZARDOUS MATERIAL CARRIED	Accident	CHA(1)	I-30	
HAZMTL	VEHICLE CARRYING HAZARDOUS MATERIAL	Vehicle	CHA(1)	I-48	II-140
HIT_RUN	HIT AND RUN	Accident	CHA(1)	I-31	
HOSP	INJURED TAKEN TO HOSPITAL	Occupant	CHA(1)	I-61	II-169
HOSPTRAN	TRANSPORTED TO HOSPITAL METHOD	Occupant	CHA(1)	I-61	
HOUR	HOUR ACCIDENT OCCURRED	Accident	NUM	I-31	II-9
INJ	INJURY SEVERITY	Occupant	CHA(1)	I-61	II-170
INT_SYNB	COMBINED RTE_SYS/RTE_NBR	Intersct-chg	CHA(11)	I-87	
INT_TYPE	INTERSECTION TYPE	Intersct-chg	NUM	I-88	II-241
INTE_CAT	INTERSECTION CATEGORY	Roadlog	NUM	I-71	
INTERCH	INTERCHANGE ELEMENT CODE	Accident	CHA(3)	I-31	II-13
INV_DTE	INVENTORY DATE	Roadlog	CHA(8)	I-71	
LANEWID	LANE WIDTH	Roadlog	NUM	I-71	
LEGNBR11	SEGMENT 1, LEG NUMBER 1	Intersct-chg	NUM	I-103	
LICTYPE	VALID DRIVER LICENSE	Vehicle	CHA(1)	I-49	
LIGHT	LIGHT CONDITIONS	Accident	NUM	I-32	II-67
LIS_RSTR	COMPLIANCE WITH LICENSE RESTRICTIONS	Occupant	CHA(1)	I-61	
LOC_BIKE	LOCATION OF PEDESTRIAN/BIKE ACCIDENT	Accident	NUM	I-32	
LOC_HARM	LOCATION OF FIRST HARMFUL EVENT	Accident	NUM	I-32	II-68
LOC_NARR	LOCATION DESCRIPTION	Accident	CHA(50)	I-32	
LOC_TYPE	RELATION TO INTERSECTION	Accident	NUM	I-33	II-70
LOCN_REL	LOCATION RELIABILITY	Accident	CHA(1)	I-33	

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SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
LOLIMT1	SEGMENT 1 LOWER LIMIT	Intersct-chg	NUM	I-98	
LSHL_TY2	LEFT SHOULDER TYPE - ROAD 2	Roadlog	CHA(2)	I-72	
LSHL_TYP	LEFT SHOULDER TYPE - ROAD 1	Roadlog	CHA(2)	I-72	II-194
LSHL_WD2	LEFT SHOULDER WIDTH - ROAD 2	Roadlog	CHA(2)	I-73	
LSHLDWID	LEFT SHOULDER WIDTH - ROAD 1	Roadlog	CHA(2)	I-73	II-198
MAKE	MAKE OF VEHICLE	Vehicle	CHA(4)	I-49	
MCAXLDN	MOTOR CARRIER AXLES DOWN	Vehicle	CHA(2)	I-49	
MCAXLUUP	MOTOR CARRIER AXLES UP	Vehicle	CHA(2)	I-49	
MCBDYTYP	MOTOR CARRIER BODY TYPE	Vehicle	CHA(2)	I-49	II-141
MCGVWRCD	MOTOR GROSS VEHICLE WEIGHT CODE	Vehicle	CHA(2)	I-50	II-143
MCHZPLAC	MOTOR HAZARDOUS MATERIAL PLACARD FLAG	Vehicle	CHA(1)	I-50	II-145
MCSOURCE	SOURCE OF IDENTIFICATION	Vehicle	CHA(2)	I-50	
MCTRHTCH	MOTOR TRAILER HITCH CODE	Vehicle	CHA(2)	I-51	
MED_TYPE	MEDIAN TYPE	Roadlog	CHA(1)	I-73	II-202
MEDWID	MEDIAN WIDTH (IN FEET)	Roadlog	CHA(2)	I-74	II-204
MILEPOST	MODIFIED REFERENCE POINT	Accident	NUM	I-33	
MILEPOST	MODIFIED REFERENCE POINT LOCATION	Intersct-chg	NUM	I-88	
MISCACT1	ACTION PRIOR TO ACCIDENT	Vehicle	NUM	I-51	II-146
MODEL	MOTOR MODEL	Vehicle	CHA(2)	I-52	
MVCLASS	MOTOR CLASS	Vehicle	CHA(2)	I-52	
MVMT	MILLION VEHICLE MILES TRAVELED	Roadlog	NUM	I-74	
MVTYPE	MOTOR TYPE	Vehicle	CHA(2)	I-52	
NBR_LEG1	NUMBER OF LEGS ON SEGMENT 1	Intersct-chg	NUM	I-99	
NBR_LEGS	NUMBER OF LEGS INTO INTERSECTION	Intersct-chg	NUM	I-94	II-242
NBR_RTES	NUMBER OF ROUTES INTO INTERSECTION	Intersct-chg	NUM	I-94	II-243
NBRVOL	TOTAL NUMBER OF TRAFFIC VOLUME COUNTS	Roadlog	NUM	I-74	
NBRVOLB	NUMBER OF BLANK TRAFFIC VOLUME COUNTS	Roadlog	NUM	I-74	
NBRVOLF	NUMBER OF FULL TRAFFIC VOLUME COUNTS	Roadlog	NUM	I-74	
NO_LANE1	NUMBER THROUGH LANES TOWARDS INCREASING MILEPOINTS	Roadlog	CHA(1)	I-74	
NO_LANE2	NUMBER THROUGH LANES TOWARDS DECREASING MILEPOINTS	Roadlog	CHA(1)	I-74	
NO_LANES	TOTAL NUMBER OF LANES	Roadlog	NUM	I-75	II-206
NUMOCCS	NUMBER OF OCCUPANTS	Vehicle	NUM	I-52	
NUMVEHS	NUMBER OF VEHICLES INVOLVED	Accident	NUM	I-34	II-71
OBJECT1	FIXED OBJECT STRUCK	Accident	NUM	I-34	II-72
OFF_TYPE	TYPE OF INVESTIGATING OFFICER	Accident	NUM	I-34	II-75
ON_BRDG	ACCIDENT OCCURRED ON BRIDGE	Accident	CHA(1)	I-35	
ONEWAY	DIVIDED AND ONE-WAY CODE	Roadlog	CHA(1)	I-75	II-208
PARKING1	PARKING ON ROAD 1	Roadlog	CHA(1)	I-75	II-209
PARKING2	PARKING ON ROAD 2	Roadlog	CHA(1)	I-75	
PHYSCOND	PHYSICAL CONDITION OF DRIVER	Vehicle	NUM	I-53	II-152
PHYSCOND	PHYSICAL CONDITION	Occupant	NUM	I-62	II-171

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COMPOSITE LIST OF VARIABLES FOR MINNESOTA HSIS FILES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
POP_GRP	URBAN/RURAL POPULATION CODES	Accident	NUM	I-35	II-76
PUBDMG	PUBLIC PROPERTY DAMAGE	Accident	CHA(1)	I-35	
RAIL_NBR	RAILROAD CROSSING NUMBER	Intersct-chg	CHA(8)	I-89	
RD_CHAR1	ROAD CHARACTERISTICS	Accident	NUM	I-35	II-78
RDESC1	ROAD DESCRIPTION	Intersct-chg	NUM	I-98	
RDSURF	ROAD SURFACE CONDITIONS	Accident	NUM	I-36	II-80
RDWORK	ROAD WORK BEING PERFORMED	Accident	NUM	I-36	II-82
RDWY_LGH	ROADWAY LIGHTING	Intersct-chg	NUM	I-92	II-244
REF_PNT	REFERENCE POINT	Intersct-chg	CHA(10)	I-88	
REF_PST	REFERENCE POST	Roadlog	CHA(3)	I-75	
REFPNT1	REFERENCE POINT-ROUTE 1	Intersct-chg	CHA(10)	I-98	
REMARK	REMARKS - TYPE OF RECORD	Roadlog	CHA(2)	I-76	
RES_CNTY	RESIDENCE COUNTY	Occupant	NUM	I-62	
REST1	SAFETY EQUIPMENT USED	Occupant	CHA(1)	I-62	II-173
RODWYCLS	ROADWAY CLASSIFICATION	Accident	CHA(2)	I-36	II-84
RODWYCLS	ROADWAY CLASSIFICATION	Roadlog	CHA(2)	I-76	II-211
ROW	RIGHT OF WAY WIDTH	Roadlog	CHA(3)	I-76	
RSHL_TY2	RIGHT SHOULDER TYPE - ROAD 2	Roadlog	CHA(2)	I-77	
RSHL_TYP	RIGHT SHOULDER TYPE - ROAD 1	Roadlog	CHA(2)	I-77	II-213
RSHL_WD2	RIGHT SHOULDER WIDTH - ROAD 2	Roadlog	CHA(2)	I-78	
RSHLDWID	RIGHT SHOULDER WIDTH - ROAD 1	Roadlog	CHA(2)	I-78	II-217
RTE_NBR	ROUTE NUMBER	Accident	CHA(9)	I-37	
RTE_NBR	ROUTE NUMBER	Roadlog	CHA(9)	I-78	
RTE_NBR	ROUTE NUMBER	Intersct-chg	CHA(9)	I-87	
RTE_SYS	ROUTE SYSTEM	Accident	CHA(2)	I-37	II-86
RTE_SYS	ROUTE SYSTEM	Roadlog	CHA(2)	I-79	II-221
RTE_SYS	ROUTE SYSTEM	Intersct-chg	CHA(2)	I-87	II-245
RTENBR1	ROUTE NUMBER - ROUTE 1	Intersct-chg	CHA(9)	I-97	
RTESYS1	ROUTE SYSTEM - ROUTE 1	Intersct-chg	CHA(2)	I-97	
RTSYSNBR	COMBINED ROUTE SYSTEM/ROUTE NUMBER	Accident	CHA(11)	I-37	
RTSYSNBR	COMBINED ROUTE SYSTEM/ROUTE NUMBER	Roadlog	CHA(11)	I-79	
SCHLBUS	SCHOOL BUS INVOLVED ACCIDENT	Accident	CHA(1)	I-37	
SEATPOS	POSITION IN VEHICLE	Occupant	NUM	I-63	II-175
SEG_LNG	CALCULATED SECTION LENGTH	Roadlog	NUM	I-79	
SERIES	SERIES OF VEHICLE	Vehicle	CHA(3)	I-53	
SEVERITY	ACCIDENT SEVERITY	Accident	CHA(1)	I-38	II-88
SEX	SEX OF INJURED/KILLED OCCUPANT	Occupant	CHA(1)	I-63	II-178
SFTY_CLS	SAFETY IMPROVEMENT CLASSIFICATION	Intersct-chg	CHA(2)	I-94	
SFTY_IMD	SAFETY IMPROVEMENT DISTRICT	Intersct-chg	CHA(1)	I-93	
SFTY_IMY	SAFETY IMPROVEMENT YEAR	Intersct-chg	CHA(2)	I-93	
SFTY_PRJ	SAFETY IMPROVEMENT PROJECT NUMBER	Intersct-chg	CHA(2)	I-93	
SIDE_WLK	SIDEWALKS	Roadlog	CHA(1)	I-79	II-224
SIGN_CON	TRAFFIC SIGNALS CONSTRUCTION	Intersct-chg	NUM	I-91	

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COMPOSITE LIST OF VARIABLES FOR MINNESOTA HSIS FILES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
SIGN_PED	TRAFFIC SIGNALS PEDESTRIAN SIGNALS	Intersct-chg	NUM	I-91	II-247
SIGN_PLA	SIGNAL HEAD PLACEMENT	Intersct-chg	NUM	I-91	
SIGN_PRO	TRAFFIC SIGNALS PROGRESSION	Intersct-chg	NUM	I-90	
SIGN_TIM	TRAFFIC SIGNALS TIMING	Intersct-chg	NUM	I-91	II-248
SPEC_ENV	SPECIFIC ENVIRONMENT	Intersct-chg	NUM	I-93	II-249
SPEED	POSTED SPEED LIMIT	Accident	CHA(2)	I-38	II-89
STM_SEW	STORM SEWERS	Roadlog	CHA(1)	I-80	
SUF_TYP1	SURFACE SPECIFICATION NUMBER - ROAD 1	Roadlog	CHA(4)	I-80	
SUF_TYP2	SURFACE SPECIFICATION NUMBER - ROAD 2	Roadlog	CHA(4)	I-80	
SUR_TKR1	SURFACE THICKNESS - ROAD 1	Roadlog	CHA(3)	I-80	
SURF_TY2	SURFACE TYPE - ROAD 2	Roadlog	CHA(2)	I-80	
SURF_TYP	SURFACE TYPE - ROAD 1	Roadlog	CHA(2)	I-80	II-225
SURF_WD2	SURFACE WIDTH - ROAD 2 (IN FEET)	Roadlog	CHA(2)	I-81	
SURF_WID	SURFACE WIDTH - ROAD 1 (IN FEET)	Roadlog	CHA(2)	I-81	II-228
TOT_INJ	NUMBER OF PERSONS INJURED	Accident	NUM	I-38	
TOT_KILL	NUMBER OF PERSONS KILLED	Accident	NUM	I-38	
TOWAWAY	VEHICLE TOWED	Vehicle	CHA(1)	I-53	II-154
TOWING	TOWING FLAG	Vehicle	CHA(1)	I-53	
TRAF_DEV	TRAFFIC CONTROL DEVICES	Intersct-chg	NUM	I-89	
TRAF_PHS	TRAFFIC SIGNALS NUMBER OF PHASES	Intersct-chg	NUM	I-92	II-251
TRAF_PRE	TRAFFIC SIGNALS PREEMPTION	Intersct-chg	NUM	I-92	
TRAF_TMF	FLASHING SIGNAL TIME OFF	Intersct-chg	CHA(2)	I-91	
TRAF_TMO	FLASHING SIGNAL TIME ON	Intersct-chg	CHA(2)	I-91	
TRF_CNTL	TRAFFIC CONTROL DEVICES	Accident	NUM	I-39	II-91
TRF_CNTL	TRAFFIC CONTROL DEVICES-REVISED	Intersct-chg	NUM	I-90	II-252
TRFCNTLW	TRAFFIC CONTROL WORKING	Accident	NUM	I-39	II-94
TURN_LN	TURNING LANES TOWARD INCREASING MILEPOSTS	Roadlog	CHA(1)	I-81	II-230
TURN_LN2	TURNING LANES TOWARD DECREASING MILEPOSTS	Roadlog	CHA(1)	I-81	
TWNSHIP	TOWNSHIP NUMBER	Accident	NUM	I-39	
TYPEDESC	INTERSECTION DESCRIPTION-REVISED	Intersct-chg	NUM	I-89	II-256
UPDATE_	DATE OF UPDATE	Roadlog	NUM	I-81	
UPLIMT1	SEGMENT 1 UPPER LIMIT	Intersection	NUM	I-99	
URB_MNC	URBAN/MUNICIPAL CODE	Roadlog	NUM	I-82	II-231
V_DAMAGE	VEHICLE DAMAGE AREA	Vehicle	NUM	I-54	II-155
VEH_DIR	DIRECTION VEHICLE WAS TRAVELING	Vehicle	NUM	I-54	
VEH_MOV1	VEHICLE MOVEMENT	Accident	NUM	I-39	
VEHNO	RELATIVE VEHICLE NUMBER	Vehicle	NUM	I-54	
VEHNO	VEHICLE OCCUPIED BY INJURED/KILLED	Occupant	NUM	I-64	
VEHSTATE	STATE OF VEHICLE REGISTRATION	Vehicle	CHA(2)	I-54	
VEHTYPE	TYPE OF VEHICLE	Vehicle	NUM	I-55	II-157
VEHYR	MODEL YEAR OF VEHICLE	Vehicle	CHA(4)	I-55	II-162
VOLGRP	TRAFFIC VOLUME GROUP	Roadlog	CHA(2)	I-82	
VOLTYP	TRAFFIC VOLUME TYPE	Roadlog	CHA(1)	I-82	II-232

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COMPOSITE LIST OF VARIABLES FOR MINNESOTA HSIS FILES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
WAST_MAT	WASTE MATERIAL CARRIED	Accident	CHA(1)	I-41	
WASTE_MT	VEHICLE CARRYING WASTE MATERIAL	Vehicle	CHA(1)	I-56	
WEATHER	WEATHER CONDITIONS	Accident	NUM	I-41	II-95
WEEKDAY	DAY OF WEEK ACCIDENT OCCURRED	Accident	NUM	I-41	II-97
WORK_REL	WORK RELATED ACCIDENT	Occupant	CHA(1)	I-64	
YEAR	YEAR OF TRAFFIC	Roadlog	CHA(4)	I-82	
	2 BY 2 TABLE CODE				
RODWYCLS	BY ACCTYPE	Accident			II-98
RODWYCLS	BY LIGHT	Accident			II-104
RODWYCLS	BY SEVERITY	Accident			II-108
RODWYCLS	BY WEATHER	Accident			II-112

LIST OF VARIABLES FOR MINNESOTA ACCIDENT SUBFILE

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
ACC_DATE	DATE ACCIDENT OCCURRED	Accident	CHA(8)	I-29	
ACCDIGM	DIAGRAM OF ACCIDENT CODE	Accident	NUM	I-29	II-3
ACCTYPE	TYPE OF ACCIDENT	Accident	NUM	I-29	II-5
ACCYR	YEAR ACCIDENT OCCURRED	Accident	CHA(4)	I-30	
AMBL_NBR	AMBULANCE NUMBER	Accident	CHA(6)	I-30	
CASENO	ACCIDENT NUMBER	Accident	CHA(11)	I-30	
COUNTY	COUNTY	Accident	NUM	I-30	
DIV_CODE	ROAD DESIGN	Accident	NUM	I-30	II-7
HAZMAT	HAZARDOUS MATERIAL CARRIED	Accident	CHA(1)	I-30	
HIT_RUN	HIT AND RUN	Accident	CHA(1)	I-31	
HOUR	HOUR ACCIDENT OCCURRED	Accident	NUM	I-31	II-9
INTERCH	INTERCHANGE ELEMENT CODE	Accident	CHA(3)	I-31	II-13
LIGHT	LIGHT CONDITIONS	Accident	NUM	I-32	II-67
LOC_BIKE	LOCATION OF PEDESTRIAN/BIKE ACCIDENT	Accident	NUM	I-32	
LOC_HARM	LOCATION OF FIRST HARMFUL EVENT	Accident	NUM	I-32	II-68
LOC_NARR	LOCATION DESCRIPTION	Accident	CHA(50)	I-32	
LOC_TYPE	RELATION TO INTERSECTION	Accident	NUM	I-33	II-70
LOCN_REL	LOCATION RELIABILITY	Accident	CHA(1)	I-33	
MILEPOST	MODIFIED REFERENCE POINT	Accident	NUM	I-33	
NUMVEHS	NUMBER OF VEHICLES INVOLVED	Accident	NUM	I-34	II-71
OBJECT1	FIXED OBJECT STRUCK	Accident	NUM	I-34	II-72
OFF_TYPE	TYPE OF INVESTIGATING OFFICER	Accident	NUM	I-34	II-75
ON_BRDG	ACCIDENT OCCURRED ON BRIDGE	Accident	CHA(1)	I-35	
POP_GRP	URBAN/RURAL POPULATION CODES	Accident	NUM	I-35	II-76
PUBDMG	PUBLIC PROPERTY DAMAGE	Accident	CHA(1)	I-35	
RD_CHAR1	ROAD CHARACTERISTICS	Accident	NUM	I-35	II-78
RDSURF	ROAD SURFACE CONDITIONS	Accident	NUM	I-36	II-80
RDWORK	ROAD WORK BEING PERFORMED	Accident	NUM	I-36	II-82
RODWYCLS	ROADWAY CLASSIFICATION	Accident	CHA(2)	I-36	II-84
RTE_NBR	ROUTE NUMBER	Accident	CHA(9)	I-37	
RTE_SYS	ROUTE SYSTEM	Accident	CHA(2)	I-37	II-86
RTSYSNBR	COMBINED ROUTE SYSTEM/ROUTE NUMBER	Accident	CHA(11)	I-37	
SCHLBUS	SCHOOL BUS INVOLVED ACCIDENT	Accident	CHA(1)	I-37	
SEVERITY	ACCIDENT SEVERITY	Accident	CHA(1)	I-38	II-88
SPEED	POSTED SPEED LIMIT	Accident	CHA(2)	I-38	II-89
TOT_INJ	NUMBER OF PERSONS INJURED	Accident	NUM	I-38	
TOT_KILL	NUMBER OF PERSONS KILLED	Accident	NUM	I-38	
TRF_CNTL	TRAFFIC CONTROL DEVICES	Accident	NUM	I-39	II-91
TRFCNTLW	TRAFFIC CONTROL WORKING	Accident	NUM	I-39	II-94
TWNSHIP	TOWNSHIP NUMBER	Accident	NUM	I-39	
VEH_MOV1	VEHICLE MOVEMENT	Accident	NUM	I-39	
WAST_MAT	WASTE MATERIAL CARRIED	Accident	CHA(1)	I-41	
WEATHER	WEATHER CONDITIONS	Accident	NUM	I-41	II-95
WEEKDAY	DAY OF WEEK ACCIDENT OCCURRED	Accident	NUM	I-41	II-97

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LIST OF VARIABLES FOR MINNESOTA ACCIDENT SUBFILE

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
	2 BY 2 TABLE CODE				
RODWYCLS	BY ACCTYPE	Accident			II-98
RODWYCLS	BY LIGHT	Accident			II-104
RODWYCLS	BY SEVERITY	Accident			II-108
RODWYCLS	BY WEATHER	Accident			II-112

<u>SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE</u>
<u>MINNESOTA ACCIDENT SUBFILE</u>

NOTE: SAS variable names and explanatory names are shown above each listing. (See Discussion for information on SAS formats.)

ACC_DATE **DATE ACCIDENT OCCURRED**

NON-LABELED VARIABLE -- YYYYMMDD

ACCDIGM **DIAGRAM OF ACCIDENT CODE**

01 = 'REAR END'	Rear end
02 = 'SIDESWIPE PASSNG'	Sideswipe - Passing
03 = 'LEFT TURN'	Left turn into oncoming traffic
04 = 'RAN OFF RD LEFT'	Ran off road - Left side
05 = 'RIGHT ANGLE'	Right angle
06 = 'RIGHT TURN'	Right turn into cross-street traffic
07 = 'RAN OFF RD RGHT'	Ran off road - Right side
08 = 'HEAD ON'	Head on
09 = 'SIDESWIPE OPPOS'	Sideswipe - Opposing
10 = 'OTHER/UNKNOWN'	Other or unknown
98 = 'NOT STATED/APPLC'	Not stated or not applicable
99 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

NOTE: See discussion. This variable does not indicate "what" is struck, only "how" something is struck. In addition, the "head-on" and "sideswipe opposing" codes reflect the direction of the opposing vehicles immediately prior to <u>impact</u> rather than their initial direction. Also, approximate 20% of the records are coded "OTHER/UNKNOWN" prior 1989, and approximate 8% in 1991 and later.

ACCTYPE **TYPE OF ACCIDENT**

01 = 'COLL OTH VEH'	Collision with motor vehicle on same roadway
02 = 'COL VEH OTH RDWY'	Collision with motor vehicle in other roadway
03 = 'COLL PRK VEH'	Collision with parked motor vehicle
04 = 'COLL TRAIN'	Collision with railroad train
05 = 'COL BICYCLIST'	Collision with bicyclist
06 = 'COLL PEDEST'	Collision with pedestrian
07 = 'COLL ANIMAL'	Collision with animal
08 = 'COLL FIXOBJ'	Collision with fixed object
09 = 'COLL OTH OBJ'	Collision with other object
10 = 'OVERTURN'	Overturn
11 = 'FIRE/EXPLOSION'	Fire or explosion
12 = 'SUBMERSION'	Submersion
*13 = 'DEER'	Collision with deer
*14 = 'FALLING OBJECT'	Collision with falling object

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90 = 'OTHER'	Other
99 = 'UNKNOWN'	
OTHER = 'ERROR/OTHER CODE'	

*New codes added in 1991.

ACCYR **YEAR ACCIDENT OCCURRED**

NON-LABELED VARIABLE -- Year of accident - YYYY

AMBL_NBR **AMBULANCE NUMBER**

NON-LABELED VARIABLE -- Ambulance number

NOTE: New variable added in 1991.

CASENO **ACCIDENT NUMBER**

NON-LABELED VARIABLE -- 'YYYYDDDNNNN' where YYYY = YEAR
DDD = Julian day of year
NNNN = 0000-9999 = Unique case number

COUNTY **COUNTY**

NON-LABELED VARIABLE -- 01-87 = County number

DIV_CODE **ROAD DESIGN**

01 = 'FREEWAY'	Freeway (includes ramps)
02 = 'OTH DIV HIWY'	Other divided highway
03 = 'ONE-WAY STREET'	One-way street
04 = '4-6 LN UNDIV 2WY'	4-6 lanes undivided 2-way
05 = '3 LANES UNDIV'	3 lanes undivided
06 = '2-LANE UNDIV 2WY'	2 lanes undivided 2-way
07 = 'ALLEY/DRIVEWAY'	Alley or driveway
*08 = 'PRIVATE'	Private property
90 = 'OTHER'	Other
98 = 'NOT STATED'	Not stated
99 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

*New codes added in 1991.

HAZMAT **HAZARDOUS MATERIAL CARRIED**

'Y' = 'YES'
'N' = 'NO'
OTHER = 'ERROR/OTHER CODE'

NOTE: Only in Accident Subfile through 1989. See HAZMTL in Vehicle subfile.

HIT_RUN **HIT AND RUN**

```
'N' = 'NO'                        No hit and run involved
'Y' = 'YES'                       Hit and run involved
OTHER ='ERROR/OTHER CODE'
```

NOTE: New variable added in 1990.

HOUR **HOUR ACCIDENT OCCURRED**

```
00 = '12 AM - 1259 AM'
01 = ' 1 AM -  159 AM'
02 = ' 2 AM -  259 AM'
03 = ' 3 AM -  359 AM'
04 = ' 4 AM -  459 AM'
05 = ' 5 AM -  559 AM'
06 = ' 6 AM -  659 AM'
07 = ' 7 AM -  759 AM'
08 = ' 8 AM -  859 AM'
09 = ' 9 AM -  959 AM'
10 = '10 AM - 1059 AM'
11 = '11 AM - 1159 AM'
12 = '12NOON- 1259 PM'
13 = ' 1 PM -  159 PM'
14 = ' 2 PM -  259 PM'
15 = ' 3 PM -  359 PM'
16 = ' 4 PM -  459 PM'
17 = ' 5 PM -  559 PM'
18 = ' 6 PM -  659 PM'
19 = ' 7 PM -  759 PM'
20 = ' 8 PM -  859 PM'
21 = ' 9 PM -  959 PM'
22 = '10 PM - 1059 PM'
23 = '11 PM - 1159 PM'
25 = 'UNKNOWN'
26 = 'NOT STATED'
OTHER = 'ERROR/OTHER CODE'
```

INTERCH **INTERCHANGE ELEMENT CODE**

NON-LABELED VARIABLE -- This is a three-character variable giving the code for a certain intersection element where the crash occurred. The coding is either "ANN" or "NNN", where "A" is alpha and "N" is numeric. Three blanks indicate "not in an interchange". Unfortunately, no other detail on the element descriptors is available.

LIGHT **LIGHT CONDITIONS**

01 = 'DAYLIGHT'	Daylight
02 = 'DAWN'	Dawn (morning)
03 = 'DUST'	Dusk (evening)
04 = 'DARK STRT LT ON'	Dark - Street lights on
05 = 'DARK STRT LT OFF'	Dark - Street lights off
06 = 'DARK NO STR LIGH'	Dark - No street lights
90 = 'OTHER'	Other
98 = 'NOT STATED'	Not stated
99 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

LOC_BIKE **LOCATION OF PEDESTRIAN/BIKE ACCIDENT**

0 = 'NOT STATED'	Not stated
1 = 'SCH CROSS'	At school crossing during school hours
2 = 'INTERSECT'	At intersection
3 = 'NOT INTERSEC'	Not at intersection
4 = 'UNKNOWN'	Unknown
5 = 'NOT BIKE/PED'	Not a pedestrian/bicycle accident (equivalent to 0)
OTHER = 'ERROR/OTHER CODE'	

NOTE: LOC_BIKE should not be used to identify pedestrian or bicycle accidents because it does not correctly identify all ped/bike accidents. Other more reliable variables are (ACCTYPE, VEHTYPE, CONTRIB1, CONTRIB2, MISCACT1, VEH_MOV1). Data are only available for 1985-89.

LOC_HARM **LOCATION OF FIRST HARMFUL EVENT**

1 = 'ON RDWAY'	On the roadway (alley, driveway, etc.)
2 = 'OFF RDWAY SHLD'	Off the roadway on the shoulder
3 = 'OFF RDWAY MEDN'	Off the roadway on the median
4 = 'OFF RDWAY RDSID'	Off the roadway on the roadside
5 = 'PARKING LOT'	Parking lot
6 = 'PRIV PROPERTY'	Private property
7 = 'OUTSIDE RGHT/WY'	Outside right-of-way
8 = 'UNKNOWN'	Unknown
9 = 'OTHER'	Other
OTHER = 'ERROR/OTHER CODE'	

LOC_NARR **LOCATION DESCRIPTION**

NON-LABELED VARIABLE -- Description of location

NOTE: New variable added in 1990.

LOC_TYPE **RELATION TO INTERSECTION**

1 = 'INTERCH AREA'	Interchange area
2 = 'INTERSECTION'	Intersection
3 = 'INTER RELAT'	Intersection-related
4 = 'DRV WAY ACCESS'	Alley or driveway access
5 = 'NON-JUNCTION'	Non-junction (pre-1990)
*6 = 'SCHOOL CROSS'	School Crossing
*7 = 'NOT AT INTERS'	Not at an intersection (1990 and later)
8 = 'NOT STATED'	Not stated
9 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

*New codes added in 1990.

NOTE: (1) When the accident and roadlog files are merged and then screened to select intersection accidents on urban freeways that have full access control(LOC_TYPE= 2, RTE_SYS(1, 2, OR 3), ACCESS = 3, AND FUNC_CLS = >11, there should not have been any records satisfying these constraints, as there should only be interchange accidents(LOC_TYPE= 1) on a highway with full access control. There were 192 records found. This raises concerns about using the LOC_TYPE variable. Using the Photolog system to examine this problem indicated the following: (1) In some cases, LOC_TYPE was miscoded as intersection when it should have been coded interchange (usually when accidents occurred on a ramp); and (2) LOC_TYPE was coded correctly as an intersection accident, but was coded on the wrong side of the road. This occurred at intersection of the ramp and the crossroad, which means that is should have been coded onto the crossroad, not the freeway.

(2) The specification of "intersection-related" with this variable does not totally agree with certain codes under VEH_MOV1 (i.e., Vehicle Movement). See discussion.

(3) *New codes added in 1990. (Note that "Non-Junction" became "Not at Intersection" in 1990 and later years.)

LOCN_REL **LOCATION RELIABILITY**

'1' = 'NO LOCAT ERROR'	No location error expected
'2' = 'POSS LOCAT ERROR'	Possible location error
'3' = 'PROBL LOC ERROR'	Probable location error (or non-geocoded)
OTHER = 'ERROR/OTHER CODE'	

NOTE: New variable added in 1990.

MILEPOST **MODIFIED REFERENCE POINT**

NON-LABELED VARIABLE

NOTE: This is a reformatted version of the original "Reference Point" variable in the MN files. The reformatting was done to facilitate computer linkage with other files.

NUMVEHS **NUMBER OF VEHICLES INVOLVED**

NON-LABELED VARIABLE -- NN

OBJECT1 **FIXED OBJECT STRUCK**

00 = 'NO OBJ STRUCK'	No object struck (equivalent to 21)
01 = 'CONSTRU EQUIP'	Construction barricades/equipment/etc.
02 = 'TRAFFIC SIGNAL'	Traffic signal
03 = 'RRD CROSS DEVIC'	Railroad crossing device
04 = 'LIGHT POLE'	Light pole
05 = 'UTILITY POLE'	Utility pole (telephone, electric, etc.)
06 = 'SIGN STRUC/PST'	Sign structure or post
07 = 'MAILBOX'	Mailbox and/or mailbox post
08 = 'OTHER POLE'	Other poles, posts, or supports
09 = 'FIRE HYDR/PK MTR'	Fire hydrant or parking meter
10 = 'TREE/SHRUBBERY'	Tree or shrubbery
11 = 'CRASH CUSHION'	Crash cushion
12 = 'MEDIAN SFTY BARR'	Median safety barrier
13 = 'BRDG PIERS/GDRL'	Bridge piers (includes protection guardrail)
14 = 'OTHER GUARDRAIL'	Other guardrail
15 = 'FENCING NOT BARR'	Fencing (not median barrier)
16 = 'CULVERT/HEADWALL'	Culvert or headwall
17 = 'EMBNK,DITCH/CRB'	Embankment, ditch, or curb
18 = 'BUILDING /WALL'	Building or wall
19 = 'ROCK OUTCROPS'	Rock outcrops
20 = 'UNKNOWN'	Unknown
21 = 'NOT APPLIC'	Not applicable(equivalent to 00)
22 = 'PARKING METER'	Parking Meter (1991+)
90 = 'OTHER FIX OBJ'	Other Fixed object
OTHER = 'ERROR/OTHER CODE'	

NOTE: (1) Code '00' (No object stuck) and code '21' (Not applicable) are equivalent.

(2) In the 1991 data, the number and percent of "NO OBJECT STRUCK" was significantly lower and the number/percent of "UNKNOWN" significantly higher than in other years. The percent of "UNKNOWN" remains slightly higher (i.e., 4 percent) in later years.

OFF_TYPE **TYPE OF INVESTIGATING OFFICER**

1 = 'MN STATE PATROL'	Minnesota State Patrol
2 = 'COUNTY SHERIFF'	County sheriff
3 = 'MUNICIP POLICE'	Municipal police
4 = 'OTHER INVEST OF'	Other investigating officer

NOTE: Records coded as OFF_TYPE = "UNKNOWN" have been removed in 1991 and later years to improve quality of data. See Discussion.

ON_BRDG **ACCIDENT OCCURRED ON BRIDGE**

'Y' = 'YES'
'N' = 'NO'

NOTE: Preliminary analyses have shown this variable to be inaccurate. It appears that uncoded cases default to "NO." In addition, note that in bridge analyses based on matching accident and bridge locations, interchange ramp accidents are located to the center of the interchange, which may be a bridge. This will erroneously increase the number of "bridge accidents" unless accounted for.

POP_GRP **URBAN/RURAL POPULATION CODES**

0 = 'UNKNOWN'	Unknown
1 = 'URB 250K-AND OVE'	Urban -- 250,000 and over
2 = 'URB 100K-249,999'	Urban -- 100,000 - 249,999
3 = 'URB 50K-99,999'	Urban -- 50,000 - 99,999
4 = 'URB 25K-49,999'	Urban -- 25,000 - 49,999
5 = 'URB 10K-24,999'	Urban -- 10,000 - 24,999
6 = 'URB 5K- 9,999'	Urban -- 5,000 - 9,999
7 = 'RUR 2500-4,999'	Rural -- 2,500 - 4,999
8 = 'RUR 1000-2,499'	Rural -- 1,000 - 2,499
9 = 'RUR 1- 999'	Rural -- 1 - 999 or nonmunicipal

PUBDMG **PUBLIC PROPERTY DAMAGE**

'Y' = 'YES'
'N' = 'NO'

NOTE: New variable added in 1991.

RD_CHAR1 **ROAD CHARACTERISTICS**

1 = 'STRAIGHT/LEVEL'	Straight and level
2 = 'STRAIGHT/GRADE'	Straight and grade
3 = 'STRAIGHT/HILCRS'	Straight at hillcrest
4 = 'STRAIGHT/SAG'	Straight in sag
5 = 'CURVE AND LEVEL'	Curve and level
6 = 'CURVE AND GRADE'	Curve and grade
7 = 'CURVE/HILCREST'	Curve at hillcrest
8 = 'CURVE/SAG'	Curve in sag
9 = 'UNKNOWN NOT STAT'	Unknown or not stated
OTHER = 'ERROR/OTHER CODE'	

RDSURF **ROAD SURFACE CONDITIONS**

01 = 'DRY'	Dry
02 = 'WET'	Wet
03 = 'SNOW/SLUSH'	Snow or slush
04 = 'ICE/PACK SNOW'	Ice or packed snow
05 = 'MUDDY'	Muddy
06 = 'DEBRIS'	Debris
07 = 'OILY'	Oily
90 = 'OTHER'	Other
98 = 'NOT STATED'	Not stated
99 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

RDWORK **ROAD WORK BEING PERFORMED**

01 = 'NONE'	None
02 = 'MRK CONST ZONE'	Marked construction zone
03 = 'MRK MAINT ZONE'	Marked maintenance zone
04 = 'MRK UTIL WK ZONE'	Marked utility work zone
05 = 'UNMRK CONST ZONE'	Unmarked construction zone
06 = 'UNMRK MAINT ZONE'	Unmarked maintenance zone
07 = 'UNMRK UTIL WK ZN'	Unmarked utility work zone
90 = 'OTHER'	Other
99 = 'UNKNOWN'	Unknown

NOTE: This was a new variable in 1990. However, it appears that new codes were added in 1991 which make the 1990 data inconsistent with later years.

RODWYCLS **ROADWAY CLASSIFICATION**

'01' = 'URB FRWY >= 4 LN'	Urban freeways, four or more lanes
'02' = 'URB FRWY < 4 LN'	Urban freeways, less than 4 lanes
'03' = 'URB 2-LANE ROADS'	Urban two-lane roads
'04' = 'URB ML DV N-FREE'	Urban multi-lane divided, non-freeway
'05' = 'URB ML UND N-FRE'	Urban multilane undivided, non-freeway
'06' = 'RUR FRWY >= 4 LN'	Rural freeways, four or more lanes
'07' = 'RUR FRWY < 4 LN'	Rural freeways, less than 4 lanes
'08' = 'RUR 2-LANE ROADS'	Rural two-lane roads
'09' = 'RUR ML DV N-FREE'	Rural multilane divided, non-freeway
'10' = 'RUR ML UND N-FRE'	Rural Multilane undivided, non-freeway
'99' = 'OTHERS'	Others

NOTE: Created variable added to HSIS accident and roadway inventory files in all states in 1999. See Discussion.

RTE_NBR **ROUTE NUMBER**

NON-LABELED VARIABLE

NOTE: 'NNNNNNNNX' = ROUTE NUMBER (N=0-9, and X is numeric, alpha, or blank. Note that in a few cases with county/township roads, an alpha character will appear in other columns.) This variable is used for file linkage * see RTSYSNBR.

RTE_SYS **ROUTE SYSTEM**

'01' = 'ISTH'	Interstate trunk highway
'02' = 'USTH'	U.S. trunk highway
'03' = 'MNTH'	Minnesota trunk highway
'04' = 'CSAH'	County state-aid highway
'05' = 'MSAS'	Municipal state-aid street
'07' = 'CNTY'	County road
'08' = 'TWNS'	Township road
'09' = 'UTWN'	Unorganized township road
'10' = 'MUN'	City streets
'11' = 'NATP'	National park road
'12' = 'NFD'	National forest development road
'13' = 'IND'	Indian reservation road
'14' = 'SFR'	State forest road
'15' = 'SPRK'	State park road
'16' = 'MIL'	Military road
'17' = 'NATM'	National monument road
'18' = 'NATW'	National wildlife refuge road
'19' = 'FRNT'	Frontage road
'20' = 'SGAM'	State game preserve road
'21' = 'PRV RD PUBLIC'	Private road open to public
'23' = 'ALLEY/CEMTERY'	Alleys and cemeteries

NOTE: See RTSYSNBR

RTSYSNBR **COMBINED ROUTE SYSTEM/ROUTE NUMBER**

NON-LABELED VARIABLE

NOTE: This is a combined version of the RTE_NBR and RTE_SYS variables above. This combining was done to facilitate computer linkage with other files.

SCHLBUS **SCHOOL BUS INVOLVED ACCIDENT**

'Y' = 'YES'
'N' = 'NO'
OTHER = 'ERROR/OTHER CODE'

SEVERITY **ACCIDENT SEVERITY**

'K' = 'FATAL'	Fatal
'A' = 'INCAP INJURY'	Incapacitating injury
'B' = 'NON-INCAP INJ'	Non-incapacitating injury
'C' = 'POSSIBLE INJ'	Possible injury
'D' = 'INJURY UNKNOWN'	Injury severity unknown
'P' = 'PROP. DAMAGE'	Property damage
' ' = 'NOT APPLIC'	

SPEED **POSTED SPEED LIMIT**

'00','99' = 'SPEED LIMIT UNK'	Speed limit unknown
'01'-'05' = '01-05'	Posted speed limit in miles per hour
'06'-'10' = '06-10'	
'11'-'15' = '11-15'	
'16'-'20' = '16-20'	
'21'-'25' = '21-25'	
'26'-'30' = '26-30'	
'31'-'35' = '31-35'	
'36'-'40' = '36-40'	
'41'-'45' = '41-45'	
'46'-'50' = '46-50'	
'51'-'55' = '51-55'	
'56'-'60' = '56-60'	
'61'-'65' = '61-65'	
'66'-'70' = '66-70'	
'71'-'75' = '71-75'	
'76'-'80' = '76-80'	
'81'-'85' = '81-85'	
'86'-'89' = '86-89'	
'90'-'98' = '90-98'	
OTHER = 'ERROR/OTHER CODE'	

TOT_INJ **NUMBER OF PERSONS INJURED**

00 - 04 = '0 TO 4'
05 - 10 = '5 TO 10'
11 - 20 = '11 TO 20'
21 - 50 = '21 TO 50'
51 - high = '51 OR MORE'

TOT_KILL **NUMBER OF PERSONS KILLED**

00 - 04 = '0 TO 4'
05 - 10 = '5 TO 10'
11 - 20 = '11 TO 20'
21 - 50 = '21 TO 50'
51 - high = '51 OR MORE'

TRF_CNTL **TRAFFIC CONTROL DEVICES**

01 = 'NO TRAF CONT DEV'	No traffic control devices (same as 98)
02 = 'TRAFFIC SIGNAL'	Traffic signals
03 = 'OVERHD FLASHERS'	Overhead flashers
04 = 'STOP SGN ALL APP'	Stop sign - All approaches
05 = 'STOP SGN OTHER'	Stop sign - Other
06 = 'YIELD SIGN'	Yield sign
07 = 'OFF/FLGMN/SH PAT'	Officer, flagman, or school patrol
08 = 'SCH BUS STP ARM'	School bus stop arm
09 = 'SCH ZONE SIGN'	School zone sign
10 = 'RR CROS GATES'	Railroad crossing - Gates
11 = 'RR CROS FLAS LGT'	Railroad crossing - Flashing lights
12 = 'RR CROS STOP SGN'	Railroad crossing - Stop signs
13 = 'RR CROS OTHER'	Railroad crossing - Other
14 = 'NO PASSING ZONE'	No passing zone
*16 = 'RRX OVRHD FLAS'	Railroad crossing-overhead flashing
*17 = 'RRX OVRHD FLS GT'	Railroad crossing-flashing and gate
*18 = 'RR CROS CROSSBK'	Railroad crossing-crossbuck (1990+)
90 = 'OTHER'	Other
98 = 'NOT APPLICABLE'	Not applicable (same as 01)
99 = 'UNKNOWN'	Unknown

*New codes added in 1990 or 1991.

NOTE: Beginning in 1990, it appears that code "01" ("No traffic control device") was changed to code "98" ("NOT APPLICABLE"). In 1991 (but not other years), some of these 01/98 codes were coded as "99" ("UNKNOWN").

TRFCNTLW **TRAFFIC CONTROL WORKING**

00 = 'N/A'	Not applicable
01 = 'SGN WRKN PROP'	Signal working properly
02 = 'SGN N/WRKN PROP'	Signal not working properly
03 = 'FLASHING'	Signal flashing
90 = 'OTHER'	Other
99 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

TWNSHIP **TOWNSHIP NUMBER**

NON-LABELED VARIABLE -- 000 = Unknown
001-999 = Township number

VEH_MOV1 **VEHICLE MOVEMENT**

<u>Multi-vehicle accidents at an intersection:</u>

01 = 'ENTER AT ANG'	Entering at angle
02 = 'SAME DIREC STR'	Same direction - Both going straight
03 = 'SIDESWP PASSING'	Sideswipe – Passing

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04 = 'ONE TURN ONE STR'	Same direction - One turning & one straight
05 = 'ONE STOPPED'	Same direction - One stopped
06 = 'SAME DIREC OTHER'	Same direction - Other
07 = 'HEAD ON AT INTEC'	Head on
08 = 'SIDESWIP MEETIN'	Sideswipe - Meeting
09 = 'OPPOSITE DIR'	Opposite direction - One turning left & one straight
10 = 'OPPOSITE OTHER'	Opposite direction - Other
11 = 'BACKED INTO'	Backed into
12 = 'N/S 2 VEH INTESC'	Not stated

Multi-vehicle accidents not at an intersection:

21 = 'HEAD ON NOT INTS'	Head on
22 = 'SME DIR NOT INTS'	Same direction - Both going straight
23 = 'SDSWP PAS NO INT'	Sideswipe - Passing
24 = 'ONE PRK NOT INTS'	One parked
25 = 'ONE STP IN TRF'	One stopped in traffic
26 = 'ONE ENTR PRK POS'	One entering parked position
27 = 'ONE LEAV PRK POS'	One leaving parked position
28 = 'ONE ENTR DRVWY'	One entering driveway access
29 = 'ONE LEAV DRVWY'	One leaving driveway access
30 = 'BACKED INTO'	Backed into
31 = 'OTHER'	Other
32 = 'NOT STATED'	Not stated

Pedestrian accidents:

41 = 'PED VEH STRGHT'	Vehicle going straight
42 = 'PED VEH TRN LEFT'	Vehicle turning left
43 = 'PED VEH TRN RGHT'	Vehicle turning right
44 = 'PED VEH BACKING'	Vehicle backing
45 = 'PED - OTHER'	Other
46 = 'PED NOT STATED'	Not stated

Other accidents at intersection:

51 = 'INTER RR OR VEH'	Railroad train or vehicle in other roadway
52 = 'INTER FIX OBJ'	Fixed object
53 = 'INTER OBJ OR ANI'	Other object or animal
54 = 'INTER OVERTURN'	Overturn
55 = 'INTER OTH NONCOL'	Other noncollision

Other accidents not at intersection:

56 = 'NOT INT RR/VEH'	Railroad train or vehicle in other roadway
57 = 'NOT INT FIX OBJ'	Fixed object
58 = 'NOT INT OBJ/ANI'	Other object or animal
59 = 'NOT INT OVERTN'	Overturn
60 = 'NOT INT NONCOLL'	Other noncollision

All accidents:

99 = 'NOT STATED'	Not stated
OTHER = 'ERROR/OTHER CODE'	

NOTE: (1) The specification of "intersection-related" with this variable does not totally agree with certain codes under LOC_TYPE (i.e., Intersection Relationship). See discussion.

(2) Coding for this variable was discontinued in 1990.

WAST_MAT **WASTE MATERIAL CARRIED**

'Y' = 'YES'
'N' = 'NO'
OTHER = 'ERROR/OTHER CODE'

NOTE: Only in Accident Subfile through 1989.

WEATHER **WEATHER CONDITIONS**

01 = 'CLEAR'	Clear
02 = 'CLOUDY'	Cloudy
03 = 'RAIN'	Rain
04 = 'SNOW'	Snow
05 = 'SLEET/HAIL/FRE'	Sleet, hail, or freezing rain
06 = 'FOG/SMOG/DUST'	Fog, smog, or dust
07 = 'BLOW SND/DUS/SNW'	Blowing sand, dust or snow
08 = 'SEVERE CRS WINDS'	Severe cross winds
90 = 'OTHER'	Other
98 = 'NOT STATED'	Not stated
99 = 'UNKNOWN'	Unknown

WEEKDAY **DAY OF WEEK ACCIDENT OCCURRED**

1 = 'SUNDAY'
2 = 'MONDAY'
3 = 'TUESDAY'
4 = 'WEDNESDAY'
5 = 'THURSDAY'
6 = 'FRIDAY'
7 = 'SATURDAY'
OTHER = 'ERROR/OTHER CODE'

LIST OF VARIABLES FOR MINNESOTA VEHICLE SUBFILE

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
CASENO	ACCIDENT NUMBER	Vehicle	CHA(11)	I-45	
COLOR1	COLOR OF BODY	Vehicle	CHA(1)	I-45	
COLOR2	COLOR OF ROOF	Vehicle	CHA(1)	I-45	
CONTRIB1	FIRST CONTRIBUTING FACTOR	Vehicle	NUM	I-45	II-119
CONTRIB2	SECOND CONTRIBUTING FACTOR	Vehicle	NUM	I-45	II-123
DAMSEV	VEHICLE DAMAGE SEVERITY	Vehicle	CHA(1)	I-46	II-127
DRV_AGE	AGE OF DRIVER	Vehicle	NUM	I-46	II-128
DRV_INJ	DRIVER INJURY	Vehicle	CHA(1)	I-47	II-131
DRV_SEX	SEX OF DRIVER	Vehicle	CHA(1)	I-47	II-132
EVENT1	SEQUENCE OF EVENT -1	Vehicle	CHA(2)	I-48	II-133
EVENT2	SEQUENCE OF EVENT -2	Vehicle	CHA(2)	I-48	II-136
EVENT3	SEQUENCE OF EVENT -3	Vehicle	CHA(2)	I-48	
EVENT4	SEQUENCE OF EVENT -4	Vehicle	CHA(2)	I-48	
FIRE	FIRE IN VEHICLE	Vehicle	CHA(1)	I-48	II-139
HAZMTL	VEHICLE CARRYING HAZARDOUS MATERIAL	Vehicle	CHA(1)	I-48	II-140
LICTYPE	VALID DRIVER LICENSE	Vehicle	CHA(1)	I-49	
MAKE	MAKE OF VEHICLE	Vehicle	CHA(4)	I-49	
MCAXLDN	MOTOR CARRIER AXLES DOWN	Vehicle	CHA(2)	I-49	
MCAXLUUP	MOTOR CARRIER AXLES UP	Vehicle	CHA(2)	I-49	
MCBDYTYP	MOTOR CARRIER BODY TYPE	Vehicle	CHA(2)	I-49	II-141
MCGVWRCD	MOTOR GROSS VEHICLE WEIGHT CODE	Vehicle	CHA(2)	I-50	II-143
MCHZPLAC	MOTOR HAZARDOUS MATERIAL PLACARD FLAG	Vehicle	CHA(1)	I-50	II-145
MCSOURCE	SOURCE OF IDENTIFICATION	Vehicle	CHA(2)	I-50	
MCTRHTCH	MOTOR TRAILER HITCH CODE	Vehicle	CHA(2)	I-51	
MISCACT1	ACTION PRIOR TO ACCIDENT	Vehicle	NUM	I-51	II-146
MODEL	MOTOR MODEL	Vehicle	CHA(2)	I-52	
MVCLASS	MOTOR CLASS	Vehicle	CHA(2)	I-52	
MVTYPE	MOTOR TYPE	Vehicle	CHA(2)	I-52	
NUMOCCS	NUMBER OF OCCUPANTS	Vehicle	NUM	I-52	
PHYSCOND	PHYSICAL CONDITION OF DRIVER	Vehicle	NUM	I-53	II-152
SERIES	SERIES OF VEHICLE	Vehicle	CHA(3)	I-53	
TOWAWAY	VEHICLE TOWED	Vehicle	CHA(1)	I-53	II-154
TOWING	TOWING FLAG	Vehicle	CHA(1)	I-53	
V_DAMAGE	VEHICLE DAMAGE AREA	Vehicle	NUM	I-54	II-155
VEH_DIR	DIRECTION VEHICLE WAS TRAVELING	Vehicle	NUM	I-54	
VEHNO	RELATIVE VEHICLE NUMBER	Vehicle	NUM	I-54	
VEHSTATE	STATE OF VEHICLE REGISTRATION	Vehicle	CHA(2)	I-54	
VEHTYPE	TYPE OF VEHICLE	Vehicle	NUM	I-55	II-157
VEHYR	MODEL YEAR OF VEHICLE	Vehicle	CHA(4)	I-55	II-162
WASTE_MT	VEHICLE CARRYING WASTE MATERIAL	Vehicle	CHA(1)	I-56	

SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE MINNESOTA VEHICLE SUBFILE

NOTE: SAS variable names and explanatory names are shown above each listing. (See Discussion for information on SAS formats.)

CASENO **ACCIDENT NUMBER**

NON-LABELED VARIABLE -- 'YYYYDDDNNNN' WHERE YYYY = YEAR
DDD = JULIAN DAY OF YEAR
NNNN = 0000-9999 = Unique case number

COLOR1 **COLOR OF BODY**
COLOR2 **COLOR OF ROOF**

'A' = 'RED'
'B' = 'BLUE'
'C' = 'GRAY'
'D' = 'BLACK'
'E' = 'BROWN'
'F' = 'WHITE'
'G' = 'GREEN'
'H' = 'TAN'
'I' = 'IVORY'
'J' = 'PINK'
'K' = 'YELLOW'
'L' = 'MAROON'
'M' = 'LAVENDER'
'N' = 'GOLD'
'O' = 'ORANGE'
'P' = 'SILVER'
'Q' = 'UNKNOWN'

NOTE: New variable added in 1990 or 1991.

CONTRIB1 **FIRST CONTRIBUTING FACTOR**
CONTRIB2 **SECOND CONTRIBUTING FACTOR**

01 = 'NO IMPROP DRIV'	No improper driving
02 = 'FAIL TO YIELD'	Failure to yield right of way
03 = 'ILLEG/UNSAFE SPD'	Illegal or unsafe speed
04 = 'FOLLOW TO CLOSE'	Following too closely
05 = 'DISREG TRAF DEV'	Disregard traffic control device
06 = 'DRV LEFT OF CNTR'	Driving left of roadway center - Not passing
07 = 'IMPROP PASSING'	Improper passing or overtaking
08 = 'IMPRO LANE USE'	Improper or unsafe lane use
09 = 'IMPROP/PRK/STRA'	Improper parking, starting, or stopping
10 = 'IMPROPER TURN'	Improper turn
11 = 'UNSAFE BACKING'	Unsafe backing
12 = 'NO SIGNAL/IMPRO'	No signal or improper signal

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```
13 = 'IMPEDING TRAFFIC'        Impeding traffic
14 = 'DRIVER INATTEN'          Driver inattention or distraction
15 = 'DRIVER INEXPER'          Driver inexperience
16 = 'PEDESTRIAN VIOL'         Pedestrian violation or error
17 = 'PHSICAL IMPAR'           Physical impairment
18 = 'VIS OBS WINDSHI'         Vision obscured - Windshield glass
19 = 'VIS OBS SUN/HEAD'        Vision obscured - Sun or headlights
20 = 'VIS OBS OTHER'           Vision obscured - Other
30 = 'OTH HUMAN FACT'          Other human violation or factor
41 = 'DEFECTIVE BRAKS'         Defective brakes
42 = 'DEFEC TIRE'              Defective tire or tire failure
43 = 'DEFECTIVE LIGHTS'        Defective lights
44 = 'INADEQ WINDSHLD'         Inadequate windshield or glass
45 = 'OVERSZE/WEHT/VEH'        Oversize or overweight vehicle
46 = 'SKIDDING'                Skidding
50 = 'OTH VEH DEFECT'          Other vehicle defects or factors
61 = 'WEATHER'                 Weather
62 = 'ROAD DEFECT'             Road defect
*63 = 'FAIL USE LIGHTS'        Fail to use lights
*64 = 'DRV/PHNE/CB/RDO'        Driver on car phone/CB/2-way radio
98 = 'NOT STATED'              Not stated
99 = 'UNKNOWN'                 Unknown
OTHER = 'ERROR/OTHER CODE'
```

*New codes added in 1991.

NOTE: In 1990, approximately 10% of the data are coded as "UNKNOWN". In 1991 file, coding changes mean that the "UNKNOWN" category must be added to the "no improper driving" category. Data appear to be corrected in 1992 and later.

DAMSEV **VEHICLE DAMAGE SEVERITY**

```
'L' = 'LIGHT'
'M' = 'MODERATE'
'N' = 'NOT STATED'
'S' = 'SEVERE'
'6' = 'OTHER'
'5' = 'TOTAL'
'0' = 'N/APPLIC'
'1' = 'NONE'
'9' = 'UNKNOWN'
OTHER = 'ERROR/OTHER CODE'
```

DRV_AGE **AGE OF DRIVER**

```
00-01 = 'INFANT - 1 YR'
02-04 = '02-04 YRS'
05-10 = '05-10 YRS'
11-14 = '11-14 YRS'
15    = '   15 YRS'
16    = '   16 YRS'
17    = '   17 YRS'
18    = '   18 YRS'
```

(CON'T)

```
19    = '   19 YRS'
20    = '   20 YRS'
21-25 = '21-25 YRS'
26-30 = '26-30 YRS'
31-35 = '31-35 YRS'
36-45 = '36-45 YRS'
46-55 = '46-55 YRS'
56-65 = '56-65 YRS'
66-89 = '66-89 YRS'
90-97 = '90-97 YRS'
98    = '98 YRS OR OLDER'
99    = 'UNKNOWN'
```

NOTE: In the 1990 file, only injured driver information is available. Between 5 - 10 percent of the cases are uncoded after 1990.

DRV_INJ **DRIVER INJURY**

```
'K' = 'KILLED'                 Killed
'A' = 'INJ/INCAPACIT'          Injured - Incapacitating
'B' = 'INJ NON/INCAPACI'       Injured - Non-incapacitating
'C' = 'INJ POSSIB INJ'         Injured - Possible injury
' ','N' = 'NO INJURY'          No injury
'X','U' = 'INJ SEVER UNK'      Injured - Severity unknown
OTHER = 'ERROR/OTHER CODE'
```

NOTE: (1) This variable was copied from the Occupant Subfile to this Vehicle Subfile beginning in 1990. Prior driver-injury data can be extracted from the Occupant Subfile.

(2) The "NO INJURY" code is new beginning in 1990. However, full data on all uninjured drivers is probably not available until 1991 or 1992. In addition, the "NO INJURY" code is not used after 1991. MN staff indicate that a blank code also means "NO INJURY", as captured in the format above.

DRV_SEX **SEX OF DRIVER**

```
'M' = 'MALE'
'F' = 'FEMALE'
'N' = 'NS/NOT APPLIC'
OTHER = 'ERROR/OTHER CODE'
```

NOTE: In 1990, only injured driver information is available. "NS/NOT APPLIC" plus other "ERROR/OTHER CODE" represent approximately 10 percent of the cases for all years.

EVENT1 SEQUENCE OF EVENT -1
EVENT2 SEQUENCE OF EVENT -2
EVENT3 SEQUENCE OF EVENT -3
EVENT4 SEQUENCE OF EVENT -4

'01' = 'COL MV ON HWY'	Collision with unit on the same roadway
'02' = 'COL MV ON OTH HW'	Collision with unit on separate roadway
'03' = 'COL PRK VEH'	Collision with parked motor vehicle
'04' = 'COLL WITH TRAIN'	Collision with train
'05' = 'COL BICYCLIST'	Collision with bicyclist
'06' = 'COL PEDESTRIAN'	Collision with pedestrian
'07' = 'COL WITH DEER'	Collision with deer
'08' = 'COL OTHER ANIM'	Collision with other animal
'09' = 'COL WITH FIX OBJ'	Collision with fixed object
'10' = 'COL WITH FAL OBJ'	Collision with falling object
'11' = 'OVERTURN'	Overturn
'12' = 'FIRE /EXPLOSION'	Fire/explosion
'13' = 'SUBMERSION'	Submersion
'14' = 'JACKKNIFE'	Jackknife
'15' = 'CARGO SHIFT'	Cargo shift
'16' = 'LOSS SPIL N/HAZ'	Loss or spillage of non-hazardous material
'17' = 'LOSS SPIL HAZ MT'	Loss or spillage of hazardous material
'18' = 'RAN OFF ROAD'	Ran off the road
'19' = 'UNITS SEPARATED'	Separation of units
'20' = 'DOWNHILL RUNAWAY'	Downhill runaway
'21' = 'UNDERRIDE-REAR'	Underride - rear
'22' = 'UNDERRIDE-SIDE'	Underride - side
'90' = 'OTHER'	Other
'99' = 'UNKNOWN'	Unknown

NOTE: New variable added in 1991. Approximately 14 percent of the cases are "UNKNOWN".

FIRE FIRE IN VEHICLE

'Y' = 'YES'
'N' = 'NO'
OTHER = 'ERROR/OTHER CODE'

HAZMTL VEHICLE CARRYING HAZARDOUS MATERIAL

'Y' = 'YES'
'N' = 'NO'
OTHER = 'ERROR/OTHER CODE'

LICTYPE **VALID DRIVER LICENSE**

'Y' = 'VALID LICENSE'
'N' = 'INVALID LICENSE'
'X' = 'UNKNOWN'
'I' = 'NOT APPLICABLE'
OTHER = 'ERROR/OTHER CODE'

NOTE: Data in Vehicle subfile for 1985-1989 only.

MAKE **MAKE OF VEHICLE**

NON-LABELED VARIABLE

NOTE: New variable added in 1990. This is a four character code indicating the vehicle make. While some codes are obvious (e.g., FORD, BUIC, CHEV), others are not as obvious. Approximately 13% of the data are uncoded.

MCAXLDN **MOTOR CARRIER AXLES DOWN**

NON-LABELED VARIABLE -- Axles down making contact with pavement -- (00-99)

NOTE: New variable added in 1991.

MCAXLUUP **MOTOR CARRIER AXLES UP**

NON-LABELED VARIABLE -- Axles up not making contact with pavement -- (00-99)

NOTE: New variable added in 1991.

MCBDYTYP **MOTOR CARRIER BODY TYPE**

'00' = 'NO/APPLIC'	Not applicable
'01' = 'VAN'	Van
'02' = 'DRY CARGO TANK'	Dry bulk cargo tanker
'03' = 'LIQ CARGO TANK'	Liquid bulk cargo tanker
'04' = 'GAS CARGO TANK'	Gas bulk cargo tanker
'05' = 'FLATBED'	Flatbed or platform
'06' = 'DUMP'	Dump truck
'07' = 'CONCRETE MIXER'	Concrete mixer
'08' = 'AUTO TRANSPRTER'	Auto transporter
'09' = 'GARBAGE OR REFUS'	Garbage or refuse truck
'10' = 'BUS'	Bus
'11' = 'COMBINATION'	Combination
'12' = 'SPEC PERMIT LB'	Special permit load
'90' = 'OTHER'	Other
'99' = 'UNKNOWN'	Unknown

NOTE: New variable added in 1991.

MCGVWRCD **MOTOR GROSS VEHICLE WEIGHT CODE**

'00' = 'NO/APPLIC'	Not applicable
'01' = '< 10,000 LBS'	Less than 10,000 pounds
'02' = '10,000 TO 11,999'	10,000 to 11,999 pounds
'03' = '12,000 TO 25,999'	12,000 TO 25,999 pounds
'04' = '26,000 TO 56,999'	26,000 TO 56,999 pounds
'05' = '57,000 TO 80,000'	57,000 TO 80,000 pounds
'06' = '80,001 TO 105K'	80,001 TO 105,000 pounds
'07' = '105,001 TO 120K'	105,001 TO 120,000 pounds
'08' = '> 120,000'	Greater than 120,000 pounds
'99' = 'UNKNOWN'	Unknown

NOTE: New variable added in 1991.

MCHZPLAC **MOTOR HAZARDOUS MATERIAL PLACARD FLAG**

'Y' = 'YES'
'N' = 'NO'
' ' = 'OTHERWISE'

NOTE: (1) New variable added in 1991.

(2) The formatting above differs from that provided by Minnesota. Their formatting is as follows:

'Y' = 'HAZ MAT W/PLAC'	Hazardous material on-board with placard
'N' = 'HAZ MAT WO/PLAC'	Hazardous material on-board without placard
' ' = 'OTHERWISE'	

However, the data are not coded in this manner. More specifically, while there should be a small proportion of 'N' codes, almost all the data fall into that code, with no observations in the "OTHERWISE" code. Thus, it appears to the HSIS staff that 'N' may represents a combination cases with no hazardous materials and (a limited number of) cases where hazardous material is on-board without a placard. Our guess would be that 'N' more likely defines the former - no hazardous material on board.

MCSOURCE **SOURCE OF IDENTIFICATION**

'01' = 'CAB BOARD'	Cab card
'02' = 'SHIPP PAPERS'	Shipping papers
'03' = 'SIDE VEHICLE'	Side of vehicle
'04' = 'DRIVER'	Driver
'90' = 'OTHER'	Other
OTHER = 'ERROR/OTHER CODE'	

NOTE: New variable added in 1995.

MCTRHTCH **MOTOR TRAILER HITCH CODE**

'00' = 'NOT APPLIC'	Not applicable
'01' = 'TRL W BAL HITCH'	Trailer with ball hitch
'02' = 'TRL W FIFTH WHL'	Trailer with fifth wheel
'03' = 'A-TRAIN W 5TH WH'	A-train hitch (with fifth wheel)
'04' = 'B-TRAIN W 5TH WH'	B-train hitch (with fifth wheel)
'05' = 'C-TRAIN W 5TH WH'	C-train hitch (with fifth wheel)
'06' = 'PINTLE HITCH'	Pintle hitch
'90' = 'OTHER(W/COMB)'	Other (including combinations)
'99' = 'UNKNOWN'	Unknown

NOTE: New variable added in 1991.

MISCACT1 **ACTION PRIOR TO ACCIDENT**

01 = 'GOING STRAIGHT'	Vehicle - Going straight ahead or following roadway
02 = 'WRONG WAY'	Vehicle - Wrong way into opposing traffic
03 = 'RGHT TURN/RED'	Vehicle - Right turn on red
04 = 'LFT TURN/RED'	Vehicle - Left turn on red
05 = 'MAKING RGHT TUR'	Vehicle - Making right turn
06 = 'MAKING LFT TURN'	Vehicle - Making left turn
07 = 'MAKING U TURN'	Vehicle - Making U turn
08 = 'START FROM STOP'	Vehicle - Starting from stopped position
09 = 'START IN TRAFFIC'	Vehicle - Starting in traffic
10 = 'SLOWING IN TRAF'	Vehicle - Slowing in traffic
11 = 'STOPPED IN TRAF'	Vehicle - Stopped in traffic
12 = 'ENTER PRK POSIT'	Vehicle - Entering parked position
13 = 'PARKED LEGALLY'	Vehicle - Parked legally
14 = 'PARK ILLEGALLY'	Vehicle - Parked illegally
15 = 'AVOIDING VEH/PED'	Vehicle - Avoiding vehicle/object/pedestrian in roadway
17 = 'CHANGING LANES'	Vehicle - Changing lanes
18 = 'OVERTAKING PASS'	Vehicle - Overtaking or passing
19 = 'MERGING'	Vehicle - Merging
20 = 'BACKING'	Vehicle - Backing
21 = 'STALLED'	Vehicle - Stalled
30 = 'OTHER ACTION'	Vehicle - Other action
41 = 'PED CRS W/SIG'	Pedestrian - Crossing with signal
42 = 'PED CRS A/SIG'	Pedestrian - Crossing against signal
43 = 'PED CRS WALK'	Pedestrian - Crossing marked crosswalk - No signal
44 = 'PED WLK ROAD'	Pedestrian - Crossing - No signal or marked crosswalk
45 = 'PED WLK W/TRAF'	Pedestrian - Walking in road with traffic
46 = 'PED WLK A/TRAF'	Pedestrian - Walking in road against traffic
47 = 'PED STAND ROAD'	Pedestrian - Standing in road
48 = 'PED FROM CAR'	Pedestrian - Emerging from in front or behind of parked car

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49 = 'CHLD GET OFF BUS'	Pedestrian - Child getting on or off school bus
50 = 'PED GET OUT VEH'	Pedestrian - Getting on or off vehicle
51 = 'PED PUSH/WRK VEH'	Pedestrian - Pushing or working on vehicle
52 = 'PED WORK IN RD'	Pedestrian - Working in road
53 = 'PED PLAY IN RD'	Pedestrian - Playing in road
54 = 'PED NOT IN RD'	Pedestrian - Not in road
60 = 'PED OTH ACTION'	Pedestrian - Other action
71 = 'BIKING W/TRAFF'	Bicyclist - Riding with traffic
72 = 'BIKING A/TRAFF'	Bicyclist - Riding against traffic
73 = 'BIKE RGHT TURN'	Bicyclist - Making right turn
74 = 'BIKE LEFT TURN'	Bicyclist - Making left turn
75 = 'BIKE MKE U TURN'	Bicyclist - Making U turn
76 = 'BIKE CROSS RD'	Bicyclist - Riding across road
77 = 'BIKE STOP IN RD'	Bicyclist - Slowing/stopping/starting in road
80 = 'BIKE OTH/ACTION'	Bicyclist - Other action
98 = 'NOT STATED'	Not stated
99 = 'OTHER ACTION'	
OTHER = 'ERROR/OTHER CODE'	

MODEL **MOTOR MODEL**

NON-LABELED VARIABLE

NOTE: New variable added in 1997, but all codes are currently blanks.

MVCLASS **MOTOR CLASS**

NON-LABELED VARIABLE

NOTE: New variable added in 1997, but all codes are currently blanks.

MVTYPE **MOTOR TYPE**

NON-LABELED VARIABLE

NOTE: New variable added in 1997, but all codes are currently blanks.

NUMOCCS **NUMBER OF OCCUPANTS**

NON-LABELED VARIABLE -- Number of occupants in the vehicle (0-99)

NOTE: New variable added in 1991.

PHYSCOND **PHYSICAL CONDITION OF DRIVER**

01 = 'NORMAL'	Normal - No drugs or drinking
02 = 'UNDER INFLUENCE'	Under the influence
03 = 'HAD BEEN DRINK'	Had been drinking
04 = 'HAD BEEN USE DRG'	Had been using drugs
05 = 'ASLEEP'	Asleep
06 = 'FATIGUED'	Fatigued
07 = 'ILL'	Ill
08 = 'HANDICAPPED'	Handicapped
*10 = 'COM DRV OVR .04'	Commercial Driver over .04 BAC
90 = 'OTHER'	Other
98 = 'NOT APPLIC'	Not applicable
99 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

*New codes added in 1991.

NOTE: Codes are not mutually exclusive. If more than one condition exists, officer is most likely to use alcohol-related codes. In 1990, only injured driver information is available. Approximately, 11 percent of the cases are coded as "UNKNOWN." Be caution to use Code 10 before 1991.

SERIES **SERIES OF VEHICLE**

NON-LABELED VARIABLE

NOTE: New variable added in 1990. This is a three-character code identifying the vehicle series (e.g., 626, 6LE, CIV) within a given vehicle make. While we do not have a listing of all possible formats, it appears that the data can be "decoded" when combined with MAKE. Approximately 20% of the data are uncoded.

TOWAWAY **VEHICLE TOWED**

'Y' = 'YES'
'N' = 'NO'
OTHER = 'ERROR/OTHER CODE'

TOWING **TOWING FLAG**

'Y' = 'NON-TRK TOWING'	Non-truck vehicle towing trailer, boat, etc.
'N' = 'OTHERWISE'	Otherwise

NOTE: New variable added in 1991.

V_DAMAGE **VEHICLE DAMAGE AREA**

01 = 'FRONT'	Front
02 = 'FRONT RIGHT'	Front right
03 = 'RIGHT SIDE'	Right side
04 = 'REAR RIGHT'	Rear right
05 = 'REAR'	Rear
06 = 'REAR LEFT'	Rear left
07 = 'LEFT SIDE/CT'	Left side/center
08 = 'LEFT FRONT'	Left front
09 = 'TOP'	Top
10 = 'UNDER'	Under
11 = 'MULTIPLE AREAS'	Multiple areas
12 = 'FRONT CENTER'	Front center
00 = 'NOT APPLICABLE'	Not applicable
99 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

VEH_DIR **DIRECTION VEHICLE WAS TRAVELING**

1 = 'NORTH'	North
2 = 'NORTHEAST'	Northeast
3 = 'EAST'	East
4 = 'SOUTHEAST'	Southeast
5 = 'SOUTH'	South
6 = 'SOUTHWEST'	Southwest
7 = 'WEST'	West
8 = 'NORTHWEST'	Northwest
99 = 'N/A'	Unknown or not Applicable

NOTE: New variable added in 1990 or 1991.

VEHNO **RELATIVE VEHICLE NUMBER**

NON-LABELED VARIABLE -- Number of vehicle on accident report or relative vehicle number(01-60). Used to link with occupant file.

VEHSTATE **STATE OF VEHICLE REGISTRATION**

NON-LABELED VARIABLE

NOTE: New variable added in 1997. However, all codes are currently blanks.

VEHTYPE **TYPE OF VEHICLE**

10 = 'AUTOMOBILE'	Automobile
11 = 'AUTO+TRAILR(<90)'	Automobile with trailer (pre-1990)
20 = 'TRUCK/TRACTOR<90'	Truck or truck tractor (pre-1990)
21 = 'TRU/TRAT W/SEMI'	Truck tractor with semi trailer
22 = 'TRU/TRAT W/TWIN'	Truck tractor with twin trailer
23 = 'TRU/TRAT W/OTHER'	Truck tractor with other trailer
24 = 'PICKUP TRUCK'	Pickup truck
25 = 'VAN'	Van
30 = 'MOTOCYCLE'	Motorcycle
31 = 'MOTO SCOOTER'	Motor scooter or motor bike
32 = 'MOPED'	Motorized bike or moped
33 = 'ATV'	All terrain vehicle
40 = 'SCHOOL BUS'	School bus
41 = 'OTHER BUS'	Other bus
50 = 'MOTOR HOME/CAMP'	Motor home or camper
51 = 'SNOWMOBILE'	Snowmobile
60 = 'FARM TRAC/EQUIP'	Farm tractor or equipment
61 = 'TAXICAB'	Taxicab
62 = 'HIT&RUN VEH'	Hit-and-run vehicle
70 = 'POLICE VEH'	Police vehicle
71 = 'FIRE DEPT VEH'	Fire department vehicle
72 = 'AMBULANCE'	Ambulance
80 = 'MILITARY VEH'	Military vehicle
81 = 'RD MAIN VEH'	Road maintenance vehicle or equipment
82 = 'OTH PUB OWN VEH'	Other public owned vehicle
83 = 'OTH PRIV OWN VEH'	Other private owned vehicle
90 = 'BICYCLIST'	Bicyclist
91 = 'PEDESTRIAN'	Pedestrian
*92 = '2-AX/SINGLE TRK'	2-axle single truck
*93 = '3-AX SINGLE TRK'	3-axle single truck
*94 = 'SIN TRK W/TRAIL'	Single truck w/trailer
*95 = 'TT WITH N/TRAIL'	Truck tractor with n/trailer
*96 = 'TT W/TRIP TRAIL'	Truck tractor with triple trailer
*97 = 'UNKNOWN HVY TRK'	Unknown heavy truck
*98 = 'NON/SCH BUS'	Non-school bus
*99 = 'UNKNOWN'	Unknown
*100 = 'OTHER'	Other
OTHER = 'ERROR/OTHER CODE'	

*New codes added in 1991 and 1992.

NOTE: There have been changes in the codes and the coding across years. For example, bicyclist seemed to be combined with pedestrians in 1990-91. In addition, code 20 (Truck or truck tractor) disappeared in 1990, code 97 (Unknown heavy truck) was high in 1991, and then truck-related codes 92-96 began in 1992, as did code 98 (Non-school bus), 100 (Other) and 99 (Unknown).

VEHYR **MODEL YEAR OF VEHICLE**

NON-LABELED VARIABLE -- Model year of vehicles (NNNN).

NOTE: This variable was discontinued in 1991.

WASTE_MT **VEHICLE CARRYING WASTE MATERIAL**

'Y' = 'YES'
'N' = 'NO'

NOTE: Only in Vehicle Subfile through 1989.

LIST OF VARIABLES FOR MINNESOTA OCCUPANT SUBFILE

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
AGE	AGE OF INJURED/KILLED OCCUPANT	Occupant	NUM	I-59	II-165
BIRTH_DT	BIRTHDAY	Occupant	CHA(8)	I-59	
CASENO	ACCIDENT NUMBER	Occupant	CHA(11)	I-59	
CORN_RPT	CORONER REPORT RECORD	Occupant	CHA(1)	I-59	
DL_CLASS	DRIVER LICENSE CLASS	Occupant	CHA(1)	I-60	
DL_STATE	DRIVER LICENSE STATE	Occupant	CHA(2)	I-60	
DL_WITHD	DRIVER LICENSE WITHDRAWAL	Occupant	CHA(1)	I-60	
DRIV_REC	DRIVER RECOMMENDATION	Occupant	CHA(2)	I-60	
EJECT	EJECTION FROM VEHICLE	Occupant	NUM	I-60	II-168
FAT_NUM	FATALITY NUMBER	Occupant	CHA(4)	I-60	
FATLDATE	FATALITY DATE	Occupant	NUM	I-61	
HOSP	INJURED TAKEN TO HOSPITAL	Occupant	CHA(1)	I-61	II-169
HOSPTRAN	TRANSPORTED TO HOSPITAL METHOD	Occupant	CHA(1)	I-61	
INJ	INJURY SEVERITY	Occupant	CHA(1)	I-61	II-170
LIS_RSTR	COMPLIANCE WITH LICENSE RESTRICTIONS	Occupant	CHA(1)	I-61	
PHYSCOND	PHYSICAL CONDITION	Occupant	NUM	I-62	II-171
RES_CNTY	RESIDENCE COUNTY	Occupant	NUM	I-62	
REST1	SAFETY EQUIPMENT USED	Occupant	CHA(1)	I-62	II-173
SEATPOS	POSITION IN VEHICLE	Occupant	NUM	I-63	II-175
SEX	SEX OF INJURED/KILLED OCCUPANT	Occupant	CHA(1)	I-63	II-178
VEHNO	VEHICLE OCCUPIED BY INJURED/KILLED	Occupant	NUM	I-64	
WORK_REL	WORK RELATED ACCIDENT	Occupant	CHA(1)	I-64	

NOTE: This file only contains data on the injured occupants in the vehicle for 1985-1990 data. Thus, none of the "successes" (non-injured occupants) are included for these years. Beginning in 1991 and 1992, this file contains data on all occupants. See discussion

SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE MINNESOTA OCCUPANT SUBFILE

NOTE: (1) SAS variable names and explanatory names are shown above each listing. (See Discussion for information on SAS formats.)

(2) This file only contains data on the injured occupants in the vehicle for 1985-1990 data. Thus, none of the "successes" (non-injured occupants) are included for these years. Beginning in 1991, this file contains data on all occupants. See discussion.

AGE **AGE OF INJURED/KILLED OCCUPANT**

```
00-01 = 'INFANT - 1 YR'
02-04 = '02-04 YRS'
05-10 = '05-10 YRS'
11-14 = '11-14 YRS'
15    = '   15 YRS'
16    = '   16 YRS'
17    = '   17 YRS'
18    = '   18 YRS'
19    = '   19 YRS'
20    = '   20 YRS'
21-25 = '21-25 YRS'
26-30 = '26-30 YRS'
31-35 = '31-35 YRS'
36-45 = '36-45 YRS'
46-55 = '46-55 YRS'
56-65 = '56-65 YRS'
66-89 = '66-89 YRS'
90-97 = '90-97 YRS'
98    = '98 YRS OR OLDER'
99    = 'UNKNOWN'
```

BIRTH_DT **BIRTHDAY**

NON-LABELED VARIABLE -- Date of birth (YYYYMMDD)

NOTE: New variable added 1991.

CASENO **ACCIDENT NUMBER**

```
NON-LABELED VARIABLE -- 'YYYYDDDNNNN' WHERE YYYY = YEAR
                        DDD = JULIAN DAY OF YEAR
                        NNNN = 0000-9999 = Unique case number
```

CORN_RPT **CORONER REPORT RECORD**

```
'Y' = 'YES'
'N' = 'NO'
```

NOTE: New variable added in 1991.

DL_CLASS **DRIVER LICENSE CLASS**

NON-LABELED VARIABLE -- one-character -- 'A'-'Z'

NOTE: New variable added in 1991.

DL_STATE **DRIVER LICENSE STATE**

NON-LABELED VARIABLE -- two-character state name (i.e., MN)

NOTE: New variable added in 1991.

DL_WITHD **DRIVER LICENSE WITHDRAWAL**

'Y' = 'SUSPENDED, ETC'	License suspended, revoked, cancelled, or never licensed
'N' = 'OTHERWISE'	Otherwise
OTHER = 'ERROR/OTHER CODE'	

NOTE: New variable added in 1990. Data appear to be consistent in 1991 and later.

DRIV_REC **DRIVER RECOMMENDATION**

'00' = 'NOT APPLIC'	Not applicable
'01' = 'PHYSICAL EXAM'	Physical exam
'02' = 'DRIVERS EXAM'	Driver's exam
'90' = 'OTHER'	Other
'99' = 'UNKNOWN'	Unknown

NOTE: New variable added in 1990. Data appear to be consistent in 1991 and later.

EJECT **EJECTION FROM VEHICLE**

1 = 'TRAPPED/EXTRIC'	Trapped/Extricated
2 = 'PART EJECTED'	Partially ejected
3 = 'EJECTED'	Ejected
4 = 'NOT EJECTED'	Not ejected
8 = 'NOT APPLICABLE'	Not applicable
9 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

NOTES: (1) Approximately 30% of values coded as "UNKNOWN".

(2) Labels above are correct - raw documentation is in error.

FAT_NUM **FATALITY NUMBER**

NON-LABELED VARIABLE -- Internal fatality number assigned by Minnesota

NOTE: Not of use for analysis efforts.

FATLDATE **FATALITY DATE**

NON-LABELED VARIABLE -- Date of fatality (YYYYMMDD)

NOTE: New variable added in 1998.

HOSP **INJURED TAKEN TO HOSPITAL**

'Y' = 'YES'
'N' = 'NO'
OTHER = 'ERROR/OTHER CODE'

HOSPTRAN **TRANSPORTED TO HOSPITAL METHOD**

NON-LABELED VARIABLE -- A = AMBULANCE
O = NOT TRANS/OTHER

NOTE: New variable added in 1991.

INJ **INJURY SEVERITY**

'K' = 'KILLED'	Killed
'A' = 'INJ/INCAPACIT'	Injured - Incapacitating
'B' = 'INJ NON/INCAPACI'	Injured - Non-incapacitating
'C' = 'INJ POSSIB INJ'	Injured - Possible injury
' ','N' = 'NO INJURY'	No injury
'X','U' = 'INJ SEVER UNK'	Injured - Severity unknown
OTHER = 'ERROR/OTHER CODE'	

NOTE: The "NO INJURY" code is new beginning in 1990, since MN did not begin coding uninjured occupants until that year. After 1991, MN staff indicate that a blank code also can mean "NO INJURY" as captured in the format above. However, since additional blank "place holder" occupant records are added to the Occupant File, while not likely the case, there may be some blank codes which represent other injury classes. (See Discussion.)

LIS_RSTR **COMPLIANCE WITH LICENSE RESTRICTIONS**

'Y' = 'YES'
'N' = 'NO'
'I' = 'NOT APPLIC'
'X' = 'UNKNOWN'

NOTE: New variable added in 1991.

PHYSCOND **PHYSICAL CONDITION**

01 = 'NORMAL'	Normal - No drugs or drinking
02 = 'UNDER INFLUENCE'	Under the influence
03 = 'HAD BEEN DRINK'	Had been drinking
04 = 'HAD BEEN USE DRG'	Had been using drugs
05 = 'ASLEEP'	Asleep
06 = 'FATIGUED'	Fatigued
07 = 'ILL'	Ill
08 = 'HANDICAPPED'	Handicapped
*10 = 'COM DRV OVR .04'	Commercial Driver over .04 BAC
90 = 'OTHER'	Other
98 = 'NOT APPLIC'	Not applicable
99 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

*New codes added in 1991.

NOTE: Codes are not mutually exclusive. If more than one condition exists, officer is most likely to use alcohol-related codes. In 1990, only injured driver information is available. Approximately, 35 percent of the cases are coded as "UNKNOWN."

RES_CNTY **RESIDENCE COUNTY**

NON-LABELED VARIABLE -- County of residence (same codes as COUNTY)

NOTE: New variable added in 1991. Valid data are not available for 1997.

REST1 **SAFETY EQUIPMENT USED**

'1' = 'CHILD REST'	Child restraint
'2' = 'REST DEV NOT INS'	Restraining device not installed
'3' = 'REST DEV NOT USE'	Restraining device installed - Not used
'4' = 'REST DEV USED'	Restraining device installed - Used
'5' = 'MOTOCY HELM USED'	Motorcycle - Helmet used
'6' = 'MOTOCY HELM/LGHT'	Motorcycle - Helmet used, lights on
'7' = 'HELM USE LGHT/OF'	Motorcycle - Helmet used, lights off
'8' = 'HELMET NOT USED'	Motorcycle - Helmet not used
'9' = 'NO HLMT/LGHT ON'	Motorcycle - Helmet not used, lights on
'A' = 'NO HLMT/LGHT OFF'	Motorcycle - Helmet not used, lights off
'B' = 'MTRCYCL LGHT ON'	Motorcycle - Lights on
'C' = 'MTRCYCL LGHT OFF'	Motorcycle - Lights off
'D' = 'CLOTHING DARK'	Clothing dark
'E' = 'CLOTHING LT/REFL'	Clothing light or reflective material
'F' = 'SEAT BELT IMP US'	Seat belt improperly used
'G' = 'OTHER'	Other
*'H' = 'PAS BELT INS/USE'	Passive belt installed and used
*'I' = 'PAS BELT INS CIR'	Passive belt installed circumvented

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*'J' = 'AIRBAG + SB USE'	Airbag deployed, seat belt used
*'K' = 'AIRBAG-NO SB USE'	Airbag deployed, seat belt not used
*'L' = 'CRD NOT INSTALL'	Child restraint device not installed
*'M' = 'CRD INSTL/NO USE'	Child restraint device installed not used
*'N' = 'CRD INST/IMPR US'	Child restraint device installed improperly used
*' ','O' = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

*New codes added in 1990 or 1991.

NOTE: This variable has many non-exclusive codes, high percentages of uncoded cases, and is characterized in general by poor data.

SEATPOS **POSITION IN VEHICLE**

00 = 'NOT OCCUP'	Not an occupant of a vehicle
01 = 'DRIVER'	Standard vehicle - Driver
02 = 'FRONT CENTER'	Standard vehicle - Front center
03 = 'FRONT RIGHT'	Standard vehicle - Front right
04 = 'REAR LEFT'	Standard vehicle - Rear left
05 = 'REAR CENTER'	Standard vehicle - Rear center
06 = 'REAR RIGHT'	Standard vehicle - Rear right
07 = 'OTHER PASSNG'	Standard vehicle - Other passenger
08 = 'RDER HANG ON VEH'	Rider hanging on vehicle
09 = 'MO/BIK/SNWBL DRV'	Motorcycle/bicycle/snowmobile - Driver
10 = 'MO/BIK/SNWBL PAS'	Motorcycle/bicycle/snowmobile - Passenger
11 = 'SLED HANG ON'	Sidecar of sled or hanging on vehicle
*14 = '3RD SEAT LEFT'	Third seat left
*15 = '3RD SEAT CENTER'	Third seat center
*16 = '3RD SEAT RIGHT'	Third seat right
*90 = 'OTHER'	Other
98 = 'NOT APPLICABLE'	Not applicable
99 = 'UNKNOWN'	Unknown
OTHER = 'ERROR/OTHER CODE'	

*New codes added in 1990 or 1991.

NOTE: Approximately 18 percent 'UNKNOWN' in 1991 and later.

SEX **SEX OF INJURED/KILLED OCCUPANT**

'M' = 'MALE'
'F' = 'FEMALE'
'N' = 'NS/NOT APPLIC'
OTHER = 'ERROR/OTHER CODE'

VEHNO **VEHICLE OCCUPIED BY INJURED/KILLED**

NON-LABELED VARIABLE -- Vehicle number on accident report. Used to link with vehicle file.

NOTE: Preliminary analyses indicate that pedestrians and bicyclists are often given a VEHNO = '0'.

WORK_REL **WORK RELATED ACCIDENT**

'Y' = 'YES'
'N' = 'NO'

NOTE: New variable added in 1990. Data appear to be consistent in 1991 and later.

LIST OF VARIABLES FOR MINNESOTA ROADLOG FILE

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
AADT	CALCULATED AVERAGE AADT	Roadlog	NUM	I-67	II-181
ACCESS	CONTROL OF ACCESS	Roadlog	NUM	I-67	II-183
ADLN_RD1	ADDITIONAL LANES - ROAD 1	Roadlog	CHA(1)	I-67	II-184
ADLN_RD2	ADDITIONAL LANES - ROAD 2	Roadlog	CHA(1)	I-67	
BAS_TKR1	BASE THICKNESS - ROAD 1	Roadlog	CHA(3)	I-68	
BEGMP	CALCULATED BEGIN MILEPOST	Roadlog	NUM	I-68	
BRK_CD	BREAK CODE	Roadlog	NUM	I-68	
COMM_ADT	CALCULATED AVERAGE COMMERCIAL AADT	Roadlog	NUM	I-69	II-186
COUNTY	COUNTY	Roadlog	NUM	I-69	
CURB1	CURBS - ROAD 1	Roadlog	CHA(1)	I-69	II-188
CURB2	CURBS - ROAD 2	Roadlog	CHA(1)	I-69	
ENDMP	CALCULATED ENDING MILEPOST	Roadlog	NUM	I-69	
FED_AID	FEDERAL AID SYSTEM	Roadlog	CHA(1)	I-69	II-189
FED_SYSD	FEDERAL AID SYSTEM - DESIGNATED	Roadlog	CHA(1)	I-70	II-190
FED_SYSR	FEDERAL AID SYSTEM - REGULAR	Roadlog	CHA(1)	I-70	II-191
FUNC_CLS	FUNCTIONAL CLASS	Roadlog	NUM	I-70	II-192
H_COUNT	NUMBER OF COUNT STATIONS PER SECTION	Roadlog	NUM	I-70	
INTE_CAT	INTERSECTION CATEGORY	Roadlog	NUM	I-71	
INV_DTE	INVENTORY DATE	Roadlog	CHA(8)	I-71	
LANEWID	LANE WIDTH	Roadlog	NUM	I-71	
LSHL_TYP	LEFT SHOULDER TYPE - ROAD 1	Roadlog	CHA(2)	I-72	II-194
LSHL_TY2	LEFT SHOULDER TYPE - ROAD 2	Roadlog	CHA(2)	I-72	
LSHLDWID	LEFT SHOULDER WIDTH - ROAD 1	Roadlog	CHA(2)	I-73	II-198
LSHL_WD2	LEFT SHOULDER WIDTH - ROAD 2	Roadlog	CHA(2)	I-73	
MED_TYPE	MEDIAN TYPE	Roadlog	CHA(1)	I-73	II-202
MEDWID	MEDIAN WIDTH (IN FEET)	Roadlog	CHA(2)	I-74	II-204
MVMT	MILLION VEHICLE MILES TRAVELED	Roadlog	NUM	I-74	
NBRVOL	TOTAL NUMBER OF TRAFFIC VOLUME COUNTS	Roadlog	NUM	I-74	
NBRVOLB	NUMBER OF BLANK TRAFFIC VOLUME COUNTS	Roadlog	NUM	I-74	
NBRVOLF	NUMBER OF FULL TRAFFIC VOLUME COUNTS	Roadlog	NUM	I-74	
NO_LANE1	NUMBER THROUGH LANES TOWARDS INCREASING MILEPOINTS	Roadlog	CHA(1)	I-74	
NO_LANE2	NUMBER THROUGH LANES TOWARDS DECREASING MILEPOINTS	Roadlog	CHA(1)	I-74	
NO_LANES	TOTAL NUMBER OF LANES	Roadlog	NUM	I-75	II-206
ONEWAY	DIVIDED AND ONE-WAY CODE	Roadlog	CHA(1)	I-75	II-208
PARKING1	PARKING ON ROAD 1	Roadlog	CHA(1)	I-75	II-209
PARKING2	PARKING ON ROAD 2	Roadlog	CHA(1)	I-75	
REF_PST	REFERENCE POST	Roadlog	CHA(3)	I-75	
REMARK	REMARKS - TYPE OF RECORD	Roadlog	CHA(2)	I-76	

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LIST OF VARIABLES FOR MINNESOTA ROADLOG FILE

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
RODWYCLS	ROADWAY CLASSIFICATION	Roadlog	CHA(2)	I-76	II-211
ROW	RIGHT OF WAY WIDTH	Roadlog	CHA(3)	I-76	
RSHL_TYP	RIGHT SHOULDER TYPE - ROAD 1	Roadlog	CHA(2)	I-77	II-213
RSHL_TY2	RIGHT SHOULDER TYPE - ROAD 2	Roadlog	CHA(2)	I-77	
RSHLDWID	RIGHT SHOULDER WIDTH - ROAD 1	Roadlog	CHA(2)	I-78	II-217
RSHL_WD2	RIGHT SHOULDER WIDTH - ROAD 2	Roadlog	CHA(2)	I-78	
RTE_NBR	ROUTE NUMBER	Roadlog	CHA(9)	I-78	
RTE_SYS	ROUTE SYSTEM	Roadlog	CHA(2)	I-79	II-221
RTSYSNBR	COMBINED ROUTE SYSTEM/ROUTE NUMBER	Roadlog	CHA(11)	I-79	
SEG_LNG	CALCULATED SECTION LENGTH	Roadlog	NUM	I-79	
SIDE_WLK	SIDEWALKS	Roadlog	CHA(1)	I-79	II-224
STM_SEW	STORM SEWERS	Roadlog	CHA(1)	I-80	
SUF_TYP1	SURFACE SPECIFICATION NUMBER - ROAD 1	Roadlog	CHA(4)	I-80	
SUF_TYP2	SURFACE SPECIFICATION NUMBER - ROAD 2	Roadlog	CHA(4)	I-80	
SUR_TKR1	SURFACE THICKNESS - ROAD 1	Roadlog	CHA(3)	I-80	
SURF_TYP	SURFACE TYPE - ROAD 1	Roadlog	CHA(2)	I-80	II-225
SURF_TY2	SURFACE TYPE - ROAD 2	Roadlog	CHA(2)	I-80	
SURF_WID	SURFACE WIDTH - ROAD 1 (IN FEET)	Roadlog	CHA(2)	I-81	II-228
SURF_WD2	SURFACE WIDTH - ROAD 2 (IN FEET)	Roadlog	CHA(2)	I-81	
TURN_LN	TURNING LANES TOWARD INCREASING MILEPOSTS	Roadlog	CHA(1)	I-81	II-230
TURN_LN2	TURNING LANES TOWARD DECREASING MILEPOSTS	Roadlog	CHA(1)	I-81	
UPDATE_	DATE OF UPDATE	Roadlog	NUM	I-81	
URB_MNC	URBAN/MUNICIPAL CODE	Roadlog	NUM	I-82	II-231
VOLGRP	TRAFFIC VOLUME GROUP	Roadlog	CHA(2)	I-82	
VOLTYP	TRAFFIC VOLUME TYPE	Roadlog	CHA(1)	I-82	II-232
YEAR	YEAR OF TRAFFIC	Roadlog	CHA(4)	I-82	

NOTE: Prior to 1994, approximately one-third of the records on this file are "false records" coded other than 'blank'. These must be taken into account when using this file -- see introductory discussion.

SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE
MINNESOTA ROADLOG FILE

NOTE: SAS variable names and explanatory names are shown above each listing. (See Discussion for information on SAS formats.)

AADT **CALCULATED AVERAGE AADT**

```
0            = '0'
1-100        = '     1 -    100'
101-500      = '   101 -    500'
501-1000     = '   501 -  1,000'
1001-2000    = ' 1,001 -  2,000'
2001-5000    = ' 2,001 -  5,000'
5001-10000   = ' 5,001 - 10,000'
10001-15000  = '10,001 - 15,000'
15001-20000  = '15,001 - 20,000'
20001-40000  = '20,001 - 40,000'
40001-999999 = '>= 40,001'
```

NOTE: This is the calculate average AADT (annual average daily traffic) assigned to this section. It is averaged over years (1985-87 in the 1987 File, 1988-89 in the 1989 File), and over counters within the section. If no counters exist, the average is brought forward from the preceding upstream section. See Discussion. Approximately 2%-4% of the sections have AADT which is either uncoded or '0.' While the percentages of uncoded/"0" seem to vary across years, we can see no discernable pattern.

ACCESS **CONTROL OF ACCESS**

0 = 'NOT APPLICABLE'	Not applicable
1 = 'NO CNTRL OF ACC'	No control of access
2 = 'PART CNTL OF AC'	Partial control of access
3 = 'FULL CNTL OF AC'	Full control of access
4 = 'NOT PUBLIC ROAD'	Not a public road

ADLN_RD1 **ADDITIONAL LANES - ROAD 1**
ADLN_RD2 **ADDITIONAL LANES - ROAD 2**

' ' = 'NOT APPLICABLE'	Not applicable
'0' = 'NO ADDITION LNS'	No additional lanes
'1' = 'CLMB LNES LEFT'	Climbing lane(s) on left
'2' = 'CLMB LNES RIGHT'	Climbing lane(s) on right
'3' = 'CLMB LNES BOTH'	Climbing lanes on both sides
'4' = 'ESC LANE ON LFT'	Escape lane on left
'5' = 'ACCEL LNES LEFT'	Acceleration lane(s) on left
'6' = 'ACCEL LNES RIGH'	Acceleration lane(s) on right
'7' = 'ACEL LNES BOTH'	Acceleration lanes on both sides

(CON’T)

'8' = 'ESC LANES RIGHT'   Escape lanes on right
'9' = 'OTHER ADDIT LNS'   Other additional lanes

NOTE: Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See earlier discussion.)

BAS_TKR1 **BASE THICKNESS - ROAD 1**

'   ' = 'NOT APPLICABLE'
'UN ' = 'UNKNOWN'
'010'-'100' = ' 1.0 - 10.0'
'101'-'200' = '10.1 - 20.0'
'201'-'300' = '20.1 - 30.0'
'301'-'400' = '30.1 - 40.0'
'401'-'600' = '40.1 - 60.0'
'601'-'900' = '60.1 - 90.0'
'901'-'999' = ' >= 90.1'
OTHER ='ERROR/OTHER CODE'

NOTE: This is the thickness of the pavement base to the nearest tenth of an inch (e.g., 094 = 9.4 inches). Over 99% of the data are coded as "Not Applicable", which probably means that a blank also means "Not Coded".

BEGMP **CALCULATED BEGIN MILEPOST**

NON-LABELED VARIABLE -- Calculated beginning milepost -- See Discussion

BRK_CD **BREAK CODE**

1 = 'RDLOG REPT'	Roadlog reports
2 = 'CNTRL SECT BK'	Control section book
3 = 'LOGPOINT LISTNG'	Logpoint listings
4 = 'LOGPT&CNTRL SEC'	Logpoint listings & control section book
5 = 'RDLG RPT & CNTL'	Roadlog report and control section book
6 = 'RDLG RPT & LGPT'	Roadlog reports and logpoint listings
7 = 'RDLG LGPT & CNTL'	Roadlog reports & logpoint listings & control section book

COMM_ADT **CALCULATED AVERAGE COMMERCIAL AADT**

```
0            = '0'
1-100        = '     1 -    100'
101-500      = '   101 -    500'
501-1000     = '   501 -  1,000'
1001-2000    = ' 1,001 -  2,000'
2001-5000    = ' 2,001 -  5,000'
5001-10000   = ' 5,001 - 10,000'
10001-15000  = '10,001 - 15,000'
15001-20000  = '15,001 - 20,000'
20001-40000  = '20,001 - 40,000'
40001-999999 = '>= 40,001'
```

COUNTY **COUNTY**

NON-LABELED VARIABLE -- 01-87 = COUNTY NUMBER

CURB1 **CURBS - ROAD 1**
CURB2 **CURBS - ROAD 2**

' ' = 'NOT APPLICABLE'	Not applicable
'N' = 'NO CURBS'	No curbs
'L' = 'CURBS ON LEFT'	Curbs on left side
'R' = 'CURBS ON RIGHT'	Curbs on right side
'B' = 'CURBS ON BOTH'	Curbs on both sides
'U' = 'UNKNOWN'	Unknown

NOTE: Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and because of the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See discussion.)

ENDMP **CALCULATED ENDING MILEPOST**

NON-LABELED VARIABLE -- Calculated ending milepost -- See Discussion.

FED_AID **FEDERAL AID SYSTEM**

' ' = 'NOT APPLICABLE'	Not applicable
'N' = 'NOT FED AID SYS'	Not on federal aid system
'I' = 'FED AID INTERST'	Federal aid interstate
'P' = 'FED AID PRIMARY'	Federal aid primary
'S' = 'FED AID SECONDA'	Federal aid secondary
'U' = 'FED AID URBAN'	Federal aid urban

FED_SYSD FEDERAL AID SYSTEM - DESIGNATED

' ' = 'NO TRAVELLED WAY'	No travelled way or projected way involved
'D' = 'PROJECTED WAY'	Projected way
'T' = 'TRAVELLED WAY'	Travelled way

FED_SYSR FEDERAL AID SYSTEM - REGULAR

' ' = 'NO TRAV WAY INV'	No travelled way involved
'I' = 'TRAV WY INTERST'	Travelled way of interstate system
'P' = 'TRAV WY PRIMARY'	Travelled way of primary system
'S' = 'TRAV WY SECONDA'	Travelled way of secondary system
'U' = 'TRAV WY URB SYS'	Travelled way of urban system
'N' = 'TRAV WY NON FED'	Travelled way of non-federal system

FUNC_CLS FUNCTIONAL CLASS

00 = 'NOT APPLICABLE'	Not applicable
Rural	
01 = 'RUR INTERSTATE'	Principal arterial - Interstate
02 = 'RURAL PRIN ARTE'	Principal arterial - Other
06 = 'RUR MINOR ARTE'	Minor arterial
07 = 'RUR MAJ ARTIAL'	Major collector
08 = 'RUR MIN COLLECT'	Minor collector
09 = 'RUR LOCAL SYSTM'	Local systems
Urban	
11 = 'URBAN INTERSTAT'	Principal arterial - Interstate
12 = 'URB CONNEC FREW'	Principal arterial - Other freeway - connecting
13 = 'URB FRW NOT CNT'	Principal arterial - Other freeway - Non-connecting
14 = 'URB OTH CON LNK'	Principal arterial - Other connecting link
15 = 'URB OTH NON LNK'	principal arterial - Other non-connecting link
16 = 'URB MIN ARTERIA'	Minor arterial
17 = 'URBAN COLLECTOR'	Collector
19 = 'URB LOCAL SYSTM'	Local systems

NOTE: Beginning with 1990 data, codes 13 and 15 are no longer valid. Code 13 was changed to 12 and 15 was changed to 14. This explains why there are 'zeros' in the Guidebook tables cells for these codes.

H_COUNT NUMBER OF COUNT STATIONS PER SECTION

NON-LABELED VARIABLE -- Number of traffic count stations per section

INTE_CAT **INTERSECTION CATEGORY**

00 = 'NO INTERSECTION'	No intersection
01 = 'ISTH'	Interstate trunk highway
02 = 'USTH'	U.S. trunk highway
03 = 'MNTH'	Minnesota trunk highway
04 = 'CSAH'	County state-aid highway
05 = 'MSAS'	Municipal state-aid street
07 = 'CNTY'	County road
08 = 'TWNS'	Township road
09 = 'UTWN'	Unorganized township road
10 = 'MUN'	City streets
11 = 'NATP'	National park road
12 = 'NFD'	National forest development road
13 = 'IND'	Indian reservation road
14 = 'SFR'	State forest road
15 = 'SPRK'	State park road
16 = 'MIL'	Military road
17 = 'NATM'	National monument road
18 = 'NATW'	National wildlife refuge road
19 = 'FRNT'	Frontage road
20 = 'SGAM'	State game preserve road
21 = 'LEG'	Leg
22 = 'RAMP'	Ramp
23 = 'PRIV'	Private jurisdiction road

NOTE: This is a "point" variable describing the intersection at the beginning of the segment.

INV_DTE **INVENTORY DATE**

NON-LABELED VARIABLE -- 00000000 = DATE OF INVENTORY UNKNOWN
YYYYMMDD = DATE OF MOST RECENT INVENTORY

LANEWID **LANE WIDTH**

NON-LABELED VARIABLE -- Calculated lane width

NOTE: Lane width (in feet) is not provided in the raw data file from Minnesota. Instead, this variable is calculated using the following method suggested by Minnesota staff:

(1) If roadway is undivided (i.e., ONEWAY not equal to 'D'), and if a curb is not present (CURB1 = 'N'), then: LANEWID = SURF_WID/NO_LANES. If a curb is present (CURB1 = 'L', 'R', or 'B'), then LANEWID = 12;

(2) If roadway is divided (i.e., ONEWAY = 'D')and if a curb is not present (CURB1 = 'N'), then: LANEWID = (SURF_WID + SURF_WD2)/NO_LANES. If a curb is present (CURB1 = 'L', 'R', or 'B'), then LANEWID = 12.

LSHL_TYP LEFT SHOULDER TYPE - ROAD 1
LSHL_TY2 LEFT SHOULDER TYPE - ROAD 2

' ' = 'NOT APPLICABLE'	Not applicable
'A ' = 'PRIMITIVE'	Primitive
'B ' = 'UNIMPROVED'	Unimproved
'C ' = 'GRADED/DRAINED'	Graded and drained
'D ' = 'SOIL-SURFACED'	Soil-surfaced
'E ' = 'GRAVEL OR STONE'	Gravel or stone
'F ' = 'BITUM SURF TRAVE'	Bituminous surface - traveled
'G ' = 'MIX BITM TYP UNK'	Mixed bituminous road - type unknown
'G1' = 'MIX BITM LOW TYP'	Mixed bituminous road - low-type
'G2' = 'MIX BITM HGH TYP'	Mixed bituminous road - high-type
'G3' = 'MIX BITM RESURF'	Mixed bituminous surface - resurfacing
'G4' = 'MIX BITM NEW CON'	Mixed bituminous surface - new construction
'I ' = 'BITM CONCRET/ASP'	Bituminous concrete or asphalt road
'I3' = 'BITM CONCRET RES'	Bituminous concrete or asphalt resurfacing
'I4' = 'BITM CON NEW CON'	Bituminous concrete or asphalt new construction
'J ' = 'PORT CEMT CONCR'	Portland cement concrete road
'J3' = 'PORT CEMT RESURF'	Portland cement concrete resurfacing
'J4' = 'PORT CEMT NW CON'	Portland cement concrete new construction
'K ' = 'BRICK'	Brick
'L ' = 'BLOCK'	Block
'M1' = 'COMP 1 FT BITUMI'	Composite shoulder - 1 ft bituminous
'M2' = 'COMP 2 FT BITUMI'	Composite shoulder - 2 ft bituminous
'M3' = 'COMP 3 FT BITUMI'	Composite shoulder - 3 ft bituminous
'M4' = 'COMP 4 FT BITUMI'	Composite shoulder - 4 ft bituminous
'M5' = 'COMP 5 FT BITUMI'	Composite shoulder - 5 ft bituminous
'M6' = 'COMP 6 FT BITUMI'	Composite shoulder - 6 ft bituminous
'M7' = 'COMP 7 FT BITUMI'	Composite shoulder - 7 ft bituminous
'M8' = 'COMP 8 FT BITUMI'	Composite shoulder - 8 ft bituminous
'M9' = 'COMP 9 FT BITUMI'	Composite shoulder - 9 ft bituminous
'N1' = 'COMP 1 FT B-CONC'	Composite shoulder - 1 ft bituminous composite concrete
'N2' = 'COMP 2 FT B-CONC'	Composite shoulder - 2 ft bituminous composite concrete
'N3' = 'COMP 3 FT B-CONC'	Composite shoulder - 3 ft bituminous composite concrete
'N4' = 'COMP 4 FT B-CONC'	Composite shoulder - 4 ft bituminous composite concrete
'N5' = 'COMP 5 FT B-CONC'	Composite shoulder - 5 ft bituminous composite concrete
'N6' = 'COMP 6 FT B-CONC'	Composite shoulder - 6 ft bituminous composite concrete
'N7' = 'COMP 7 FT B-CONC'	Composite shoulder - 7 ft bituminous composite concrete
'N8' = 'COMP 8 FT B-CONC'	Composite shoulder - 8 ft bituminous composite concrete
'N9' = 'COMP 9 FT B-CONC'	Composite shoulder - 9 ft bituminous composite concrete
'S ' = 'SOD SHOULDER'	Sod shoulder

(CON’T)

'00' = 'NO SHOULDER'	No shoulder
OTHER = 'ERROR/OTHER CODE'	

NOTE: (1) Composite shoulders (i.e., part paved, part unpaved) are coded as "Mn" or "Nn" in the above format. The "n" or numeric part of these codes defines the width of the paved part of the shoulder. The shoulder width variables (e.g., LSHLDWID, RSHLWID) will provide the total shoulder width in these composite cases.

(2) Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and because of the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See earlier discussion.)

LSHLDWID LEFT SHOULDER WIDTH - ROAD 1
LSHL_WD2 LEFT SHOULDER WIDTH - ROAD 2

This is the actual left shoulder width in feet. A blank means "not applicable"; a "UN" means "unknown"; and a "00" means "no shoulder".

NOTE: (1) Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and because of the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See earlier discussion.)

(2) When Mn/DOT codes shoulder width, it is total shoulder width. For sod/gravel, it is from edge of lane to ditch, quardrail, or taper to ditch. When there is partial paved and partial sod/gravel, the shoulder type should be coded as "composite." In the composite codes under shoulder type, the shoulder type codes gives the feet of paved shoulder within the measurement. The total measure for shoulder width presented here is the width of the total composite shoulder -- from edge of lane to ditch. When the shoulder is "paved", the width is total width of the paved shoulder. There may be some cases where the coding is slightly in error. For example, a paved width may have some added sod/gravel which is unmeasured. However, if there is a wide area of sod/gravel, the shoulder type will be "composite" and the total width will be measured. There are also some cases where composite shoulders may be coded in error; however, it can be assumed that the total width is for all types of shoulders.

MED_TYPE MEDIAN TYPE

' ' = 'NOT APPLICABLE'	Not applicable
'0' = 'MEDIAN TYPE UNK'	Median type unknown
'1' = 'RAISED MEDIAN'	No median barrier, raise median
'2' = 'DEPRESSED MEDIAN'	No median barrier, depressed median
'3' = 'PLATE BEAM BARR'	Plate beam barrier
'4' = 'ONE-WAY COUPLET'	City block (one-way couplet)
'6' = 'CONCRETE BARRIER'	Concrete barrier

(CON’T)

'5' = 'BOX BEAM BARRIER'	Box beam barrier
'7' = 'RAIS MD CHAN/LNK'	Chain link barrier, raise median
'8' = 'DEPR MED CHAN/LK'	Chain link barrier, Depressed median

MEDWID **MEDIAN WIDTH (IN FEET)**

' ' = 'NOT APPLICABLE'
'UN' = 'UNKNOWN'
'VR' = 'VARIES'
'01'-'10' = '01 - 10'
'11'-'20' = '11 - 20'
'21'-'30' = '21 - 30'
'31'-'40' = '31 - 40'
'41'-'60' = '41 - 60'
'61'-'90' = '61 - 90'
'91'-'99' = ' >= 91'

MVMT **MILLION VEHICLE MILES TRAVELED**

NON-LABELED VARIABLE -- Million Vehicle Miles Traveled on road segment

NOTE: Created variable added in 1999 for all HSIS roadway-inventory files. See Discussion.

NBRVOL **TOTAL NUMBER OF TRAFFIC VOLUME COUNTS**

NON-LABELED VARIABLE -- The number of total (full plus blank) volume fields in the record containing AADT values.

NBRVOLB **NUMBER OF BLANK TRAFFIC VOLUME COUNTS**

NON-LABELED VARIABLE -- The number of blank (unused) volume fields in the record.

NBRVOLF **NUMBER OF FULL TRAFFIC VOLUME COUNTS**

NON-LABELED VARIABLE -- Number of volume fields in the record containing AADT values.

NO_LANE1 **NUMBER THROUGH LANES TOWARDS INCREASING MILEPOINTS**
NO_LANE2 **NUMBER THROUGH LANES TOWARDS DECREASING MILEPOINTS**

' ' = 'NO LANES'	Not applicable (no lanes)
'1' = 'ONE LANE'	One through lane
'2' = 'TWO LANES'	Two through lanes
'3' = 'THREE LANES'	Three through lanes
'4' = 'FOUR LANES'	Four through lanes
'5' = 'FIVE LANES'	Five through lanes

NOTE: This variable and NO_LANE1 must be summed to obtain the total number of lanes on a section of roadway, even for 2-lane, 2-way roadways. This has been done under NO_LANES.

NO_LANES **TOTAL NUMBER OF LANES**

. = 'NO LANES'
1 = 'ONE LANE'
2 = 'TWO LANES'
3 = 'THREE LANES'
4 = 'FOUR LANES'
5 = 'FIVE LANES'
6 = 'SIX LANES'
7 = 'SEVEN LANES'
8 = 'EIGHT LANES'
9-20 = '> EIGHT LANES'

NOTE: This is the sum of NO_LANE1 + NO_LANE2, and is the total number of lanes on a section of roadway.

ONEWAY **DIVIDED AND ONE-WAY CODE**

' ' = 'NOT APPLICABLE'	Not applicable
'D' = 'DIV RD1 & RD2'	Divided roadway - Road-1 & road-2 present
'0' = 'ONE-WY RD1 & RD2'	One-way couplet - Road-1 & road-2 present
'U' = 'UNDIV 2WAY RD1'	Undivided 2-way - road-1 present
'X' = 'ONE WY TWD DECR'	One-way street towards decreasing reference posts - Road-2 present
'Z' = 'ONE WY TWD INC'	One-way street towards increasing reference posts - Road-1 present

PARKING1 **PARKING ON ROAD 1**
PARKING2 **PARKING ON ROAD 2**

' ' = 'NOT APPLICABLE'	Not applicable
'0' = 'UNKNOWN'	Unknown
'1' = 'NONE RGHT OR LFT'	Left-none Right-none
'2' = 'LFT NONE RGH PAR'	Left-none Right-parallel
'3' = 'LFT NONE RGH DIA'	Left-none Right-diagonal
'4' = 'LFT PAR RGH NON'	Left-parallel Right-none
'5' = 'LFT PAR RGH PARL'	Left-parallel Right-parallel
'6' = 'LFT PAR RGH DIAG'	Left-parallel Right-diagonal
'7' = 'LFT DIAG RGH NON'	Left-diagonal Right-none
'8' = 'LFT DIAG RGH PAR'	Left-diagonal Right-parallel
'9' = 'LFT DIAG RGH DIA'	Left-diagonal Right-diagonal

NOTE: Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and because of the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See earlier discussion.)

REF_PST **REFERENCE POST**

NON-LABELED VARIABLE -- Reference post number ('000'-'999')

NOTE: New variable added in 1996.

REMARK **REMARKS - TYPE OF RECORD**

' ' = 'M-REC NORM SECT'	Mileage record - Normal section (roadlog file)
'NE' = 'M-REC NO SECT'	Mileage record - Non-existent section (roadlog file)
'CO' = 'D-REC COINCIDEN'	Descriptor record - Coincident (roadlog file)
'EN' = 'D-REC END OF RT'	Descriptor record - End-of-route record (roadlog file)
'GP' = 'D-REC GAP'	Descriptor record - Gap (roadlog file)
'DS' = 'D-REC INTERSECT'	Descriptor record - Intersection description (logpoint file)

NOTE: Prior to 1994, approximately one-third of the records on this file are "false records" coded other than 'blank'. These must be taken into account when using this file -- see introductory discussion. These false records are deleted from the files for 1994 and later years.

RODWYCLS **ROADWAY CLASSIFICATION**

'01' = 'URB FRWY >= 4 LN'	Urban freeways, four or more lanes
'02' = 'URB FRWY < 4 LN'	Urban freeways, less than 4 lanes
'03' = 'URB 2-LANE ROADS'	Urban two-lane roads
'04' = 'URB ML DV N-FREE'	Urban multi-lane divided, non-freeway
'05' = 'URB ML UND N-FRE'	Urban multilane undivided, non-freeway
'06' = 'RUR FRWY >= 4 LN'	Rural freeways, four or more lanes
'07' = 'RUR FRWY < 4 LN'	Rural freeways, less than 4 lanes
'08' = 'RUR 2-LANE ROADS'	Rural two-lane roads
'09' = 'RUR ML DV N-FREE'	Rural multilane divided, non-freeway
'10' = 'RUR ML UND N-FRE'	Rural Multilane undivided, non-freeway
'99' = 'OTHERS'	Others

NOTE: Created variable added to HSIS accident and roadway inventory files in all states in 1999. See Discussion.

ROW **RIGHT OF WAY WIDTH**

NON-LABELED VARIABLE -- Average right of way width in feet.

NOTE: New variable added in 1994.

RSHL_TYP RIGHT SHOULDER TYPE - ROAD 1
RSHL_TY2 RIGHT SHOULDER TYPE - ROAD 2

' ' = 'NOT APPLICABLE'		Not applicable
'A ' = 'PRIMITIVE'		Primitive
'B ' = 'UNIMPROVED'		Unimproved
'C ' = 'GRADED/DRAINED'		Graded and drained
'D ' = 'SOIL-SURFACED'		Soil-surfaced
'E ' = 'GRAVEL OR STONE'		Gravel or stone
'F ' = 'BITUM SURF TRAVE'		Bituminous surface - traveled
'G ' = 'MIX BITM TYP UNK'		Mixed bituminous road - type unknown
'G1' = 'MIX BITM LOW TYP'		Mixed bituminous road - low-type
'G2' = 'MIX BITM HGH TYP'		Mixed bituminous road - high-type
'G3' = 'MIX BITM RESURF'		Mixed bituminous surface - resurfacing
'G4' = 'MIX BITM NEW CON'		Mixed bituminous surface - new construction
'I ' = 'BITM CONCRET/ASP'		Bituminous concrete or asphalt road
'I3' = 'BITM CONCRET RES'		Bituminous concrete or asphalt resurfacing
'I4' = 'BITM CON NEW CON'		Bituminous concrete or asphalt new construction
'J ' = 'PORT CEMT CONCR'		Portland cement concrete road
'J3' = 'PORT CEMT RESURF'		Portland cement concrete resurfacing
'J4' = 'PORT CEMT NW CON'		Portland cement concrete new construction
'K ' = 'BRICK'		Brick
'L ' = 'BLOCK'		Block
'M1' = 'COMP 1 FT BITUMI'		Composite shoulder - 1 ft bituminous
'M2' = 'COMP 2 FT BITUMI'		Composite shoulder - 2 ft bituminous
'M3' = 'COMP 3 FT BITUMI'		Composite shoulder - 3 ft bituminous
'M4' = 'COMP 4 FT BITUMI'		Composite shoulder - 4 ft bituminous
'M5' = 'COMP 5 FT BITUMI'		Composite shoulder - 5 ft bituminous
'M6' = 'COMP 6 FT BITUMI'		Composite shoulder - 6 ft bituminous
'M7' = 'COMP 7 FT BITUMI'		Composite shoulder - 7 ft bituminous
'M8' = 'COMP 8 FT BITUMI'		Composite shoulder - 8 ft bituminous
'M9' = 'COMP 9 FT BITUMI'		Composite shoulder - 9 ft bituminous
'N1' = 'COMP 1 FT B-CONC'		Composite shoulder - 1 ft bituminous composite concrete
'N2' = 'COMP 2 FT B-CONC'		Composite shoulder - 2 ft bituminous composite concrete
'N3' = 'COMP 3 FT B-CONC'		Composite shoulder - 3 ft bituminous composite concrete
'N4' = 'COMP 4 FT B-CONC'		Composite shoulder - 4 ft bituminous composite concrete
'N5' = 'COMP 5 FT B-CONC'		Composite shoulder - 5 ft bituminous composite concrete
'N6' = 'COMP 6 FT B-CONC'		Composite shoulder - 6 ft bituminous composite concrete
'N7' = 'COMP 7 FT B-CONC'		Composite shoulder - 7 ft bituminous composite concrete
'N8' = 'COMP 8 FT B-CONC'		Composite shoulder - 8 ft bituminous composite concrete
'N9' = 'COMP 9 FT B-CONC'		Composite shoulder - 9 ft bituminous composite concrete

(CON'T)

'S ' = 'SOD SHOULDER'   Sod shoulder
'00' = 'NO SHOULDER'   No shoulder
OTHER = 'ERROR/OTHER CODE'

NOTE: (1) Composite shoulders (i.e., part paved, part unpaved) are coded as "Mn" or "Nn" in the above format. The "n" or numeric part of these codes defines the width of the paved part of the shoulder. The shoulder width variables (e.g., LSHLDWID, RSHLWID) will provide the total shoulder width in these composite cases.

(2) Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and because of the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See earlier discussion.)

RSHLDWID   RIGHT SHOULDER WIDTH - ROAD 1
RSHL_WD2   RIGHT SHOULDER WIDTH - ROAD 2

This is the actual right shoulder width in feet. A blank means "not applicable"; a "UN" means "unknown"; and a "00" means "no shoulder".

NOTE: (1) Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and because of the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See earlier discussion.)

(2) When Mn/DOT codes shoulder width, it is total shoulder width. For sod/gravel, it is from edge of lane to ditch, quardrail, or taper to ditch. When there is partial paved and partial sod/gravel, the shoulder type should be coded as "composite." In the composite codes under shoulder type, the shoulder type codes gives the feet of paved shoulder within the measurement. The total measure for shoulder width presented here is the width of the total composite shoulder -- from edge of lane to ditch. When the shoulder is "paved", the width is total width of the paved shoulder. There may be some cases where the coding is slightly in error. For example, a paved width may have some added sod/gravel which is unmeasured. However, if there is a wide area of sod/gravel, the shoulder type will be "composite" and the total width will be measured. There are also some cases where composite shoulders may be coded in error; however, it can be assumed that the total width is for all types of shoulders.

RTE_NBR   ROUTE NUMBER

NON-LABELED VARIABLE

NOTE: 'NNNNNNNNX' = ROUTE NUMBER (N=0-9, and X is numeric, alpha, or blank. Note that in a few cases with county/township roads, an alpha character will appear in other columns.) This variable is used for file linkage * see RTSYSNBR.

RTE_SYS **ROUTE SYSTEM**

'01' = 'ISTH'	Interstate trunk highway
'02' = 'USTH'	U.S. trunk highway
'03' = 'MNTH'	Minnesota trunk highway
'04' = 'CSAH'	County state-aid highway
'05' = 'MSAS'	Municipal state-aid highway
'07' = 'CNTY'	County road
'08' = 'TWNS'	Township road
'09' = 'UTWN'	Unorganized township road
'10' = 'MUN'	City streets
'11' = 'NATP'	National park road
'12' = 'NFD'	National forest development road
'13' = 'IND'	Indian reservation road
'14' = 'SFR'	State forest road
'15' = 'SPRK'	State park road
'16' = 'MIL'	Military road
'17' = 'NATM'	National monument road
'18' = 'NATW'	National wildlife refuge road
'19' = 'FRNT'	Frontage road
'20' = 'SGAM'	State game preserve road
'21' = 'PRV RD PUBLIC'	Private road open to public
'23' = 'ALLEY/CEMTERY'	Alleys and cemeteries

NOTE: See RTESYSNBR.

RTSYSNBR **COMBINED ROUTE SYSTEM/ROUTE NUMBER**

NON-LABELED VARIABLE

NOTE: This is a combined version of the RTE_NBR and RTE_SYS variables above. This combining was done to facilitate computer linkage with other files.

SEG_LNG **CALCULATED SECTION LENGTH**

NON-LABELED VARIABLE

NOTE: For 1990 and later files, the calculated section length is based on <u>true</u> beginning and ending mileposts where available from the Reference Post File. Prior to 1990, it was based on the difference between the standard beginning and ending mileposts. See discussion.

SIDE_WLK **SIDEWALKS**

' ' = 'NOT APPLICABLE'	Not applicable
'N' = 'NO SIDEWALKS'	No sidewalks
'L' = 'SIDWLK LEFT SIDE'	Sidewalks on left side
'R' = 'SIDWLK RIGH SIDE'	Sidewalks on right side
'B' = 'SIDWLK BOTH SIDE'	Sidewalks on both sides
'C' = 'COMBINATION'	Combination (divided roadways and one-way couplets only)
'U' = 'UNKNOWN'	Unknown

STM_SEW **STORM SEWERS**

' ' = 'NOT APPLICABLE'	Not applicable or not stated
'Y' = 'STORM SEWERS'	Yes - Storm sewers present
'N' = 'NO STORM SEWERS'	No - Storm sewers not present
'U' = 'UNKNOWN'	Unknown

NOTE: High percentage of "UNKNOWN" codes.

SUF_TYP1 **SURFACE SPECIFICATION NUMBER - ROAD 1**
SUF_TYP2 **SURFACE SPECIFICATION NUMBER - ROAD 2**

' ' = 'NOT APPLICABLE'	Not applicable or not stated
'0000' = 'GRAVL/AGGRG SURF'	Gravel (aggregate) surface
'2301' = 'CONCRETE PAVEMNT'	Concrete pavement
'2321' = 'RD-MIX BITM SURF'	Road-mixed bituminous surface
'2331' = 'PLT-MIX BTM PAVE'	Plant-mixed bituminous pavement
'2341' = 'PLT-MIX BTM SURF'	Plant-mixed bituminous surface
'2351' = 'ASPHL CONCR SURF'	Asphaltic concrete surface
'2361' = 'ASPHL CONCR FINE'	Asphaltic concrete surface (fine mix)

NOTE: Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and because of the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See earlier discussion.)

SUR_TKR1 **SURFACE THICKNESS - ROAD 1**

NON-LABELED VARIABLE -- Surface thickness to the nearest tenth of an inch (e.g., 094 = 9.4 inches). Here, a blank means "not applicable" and a "UN" means "unknown".

SURF_TYP **SURFACE TYPE - ROAD 1**
SURF_TY2 **SURFACE TYPE - ROAD 2**

' ' = 'NOT APPLICABLE'	Not applicable
'A ' = 'PRIMITIVE'	Primitive
'B ' = 'UNIMPROVED'	Unimproved
'C ' = 'GRADED/DRAINED'	Graded and drained
'D ' = 'SOIL-SURFACED'	Soil-surfaced
'E ' = 'GRAVEL OR STONE'	Gravel or stone
'F ' = 'BITUM SURF TRAVE'	Bituminous surface - traveled
'G ' = 'MIX BITM TYP UNK'	Mixed bituminous road - type unknown
'G1' = 'MIX BITM LOW TYP'	Mixed bituminous road - low-type
'G2' = 'MIX BITM HGH TYP'	Mixed bituminous road - high-type
'G3' = 'MIX BITM RESURF'	Mixed bituminous surface - resurfacing
'G4' = 'MIX BITM NEW CON'	Mixed bituminous surface - new construction
'I ' = 'BITM CONCRET/ASP'	Bituminous concrete or asphalt road
'I3' = 'BITM CONCRET RES'	Bituminous concrete or asphalt resurfacing

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'I4' = 'BITM CON NEW CON'	Bituminous concrete or asphalt new construction
'J ' = 'PORT CEMT CONCR'	Portland cement concrete road
'J3' = 'PORT CEMT RESURF'	Portland cement concrete resurfacing
'J4' = 'PORT CEMT NW CON'	Portland cement concrete new construction
'K ' = 'BRICK'	Brick
'L ' = 'BLOCK'	Block

NOTE: Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and because of the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See earlier discussion.)

SURF_WID SURFACE WIDTH - ROAD 1 (IN FEET)
SURF_WD2 SURFACE WIDTH - ROAD 2 (IN FEET)

' ' = 'NOT APPLICABLE'
'UN' = 'UNKNOWN'
'VR' = 'VARIES'
'01'-'15' = '01 - 05'
'16'-'18' = '16 - 18'
'19'-'22' = '19 - 22'
'23'-'25' = '23 - 25'
'26'-'30' = '26 - 30'
'31'-'40' = '31 - 40'
'41'-'50' = '41 - 50'
'51'-'60' = '51 - 60'
'61'-'80' = '61 - 80'
'81'-'99' = ' >= 81'

NOTE: Road 2 data only exist for divided roadways. In addition, since there is no accurate way of linking a given accident with the proper road, and because of the low number of "disagreements" between Road 1 and Road 2 data, it is suggested that accidents always be linked with Road 1 data for ease of handling. (See earlier discussion.)

TURN_LN TURNING LANES TOWARD INCREASING MILEPOSTS
TURN_LN2 TURNING LANES TOWARD DECREASING MILEPOSTS

' ' = 'NOT APPLICABLE'	Not applicable
'N' = 'NO TURNING LANE'	No turning lanes
'L' = 'TRN LNE LFT SDE'	Turning lanes on left sides
'R' = 'TRN LNE RGH SDE'	Turning lanes on right side
'B' = 'TRN LNE BTH SDE'	Turning lanes on both sides

UPDATE_ DATE OF UPDATE

NON-LABELED VARIABLE -- Most recent date on which record was modified (YYYYMMDD).

NOTE: New variable added in 1994.

URB_MNC **URBAN/MUNICIPAL CODE**

0 = 'NOT APPLICABLE'	Not applicable
1 = 'NONMUNIC RURAL'	Nonmunicipal - rural
2 = 'NONMUNIC URBAN'	Nonmunicipal - urban
3 = 'MUNICIPAL RURAL'	Municipal - rural
4 = 'MUNICIPAL URBAN'	Municipal - urban

VOLGRP **TRAFFIC VOLUME GROUP**

' ' = 'GROUP UNK/UNASSG'	Group unknown or unassigned
'01' = 'RUR-FARM TO MRKT'	Outstate rural - blue (farm to market)
'02' = 'RUR-SOME RECREAT'	Outstate rural - green (some recreational)
'03' = 'RUR-MODR RECREAT'	Outstate rural - red (moderate recreational)
'04' = 'RUR-HIGH RECREAT'	Outstate rural - yellow (high recreational)
'05' = 'MUNIC-REC >5000'	Outstate municipal - recreational over 5000
'06' = 'MUNIC-NREC >5000'	Outstate municipal - non-recreational over 5000
'07' = 'MUNIC-REC <5000'	Outstate municipal - recreational under 5000
'08' = 'MUNIC-NREC <5000'	Outstate municipal - non-recreational under 5000
'09' = 'METRO-URB COMMUT'	Metro - urban commuter
'10' = 'METRO-URB/SUB MX'	Metro - urban-suburban mix
'11' = 'METRO-SUB COMMUT'	Metro - suburban commuter
'12' = 'METRO-OUTLY COMM'	Metro - outlying commuter
'13' = 'METRO-OUTLY MIX'	Metro - outlying mix
'14' = 'METRO-OUTLY REC'	Metro - outlying recreational
'15' = 'MTRO/URB/SUB SHP'	Metro - urban-suburban shopping
'16' = 'METRO - URB MIX'	Metro - urban mix
'17' = 'METRO-SUBUR MIX'	Metro - suburban mix
OTHER = 'ERROR/OTHER CODE'	

NOTE: New variable added in 1989.

VOLTYP **TRAFFIC VOLUME TYPE**

'A' = 'ACTUAL'	Actual
'C' = 'COMPTR GENERATED'	Computer generated
'E' = 'ESTIMATED'	Estimated

YEAR **YEAR OF TRAFFIC**

NON-LABELED VARIABLE -- Denotes year of volume count

LIST OF VARIABLES FOR MINNESOTA INTERSECTION/INTERCHANGE FILE

NOTE: The Intersection File consists of variable length records ranging from 228-1204 bytes each, depending on the number of intersecting routes and legs. Each record consists of a fixed-length "general" portion with variables describing the entire intersection (e.g.,"General Environment", "Traffic Control Device"), and a variable length portion which describes up to six segments (routes), and up to two legs (approaches) for each segment. Variables for segments include such variables as "Route Number" and "Number of Legs", and variables for each leg include multiple years of AADT information and "Number of Approach Thru Lanes." This variable-length record has been converted into a SAS-formatted, fixed length record for ease of use. In this conversion, each variable for every possible leg on each route had to be given a separate SAS variable name. The listing below includes the SAS names for all "general" variables and example names for the route-specific and leg-specific variables. Unlike the other file descriptions, for clarity, the variables are primarily listed in raw-file order rather than alphabetical order.

"GENERAL" VARIABLES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
RTE_SYS	ROUTE SYSTEM	Intersct-chg	CHA(2)	I-87	II-245
RTE_NBR	ROUTE NUMBER	Intersct-chg	CHA(9)	I-87	
INT_SYNB	COMBINED RTE_SYS/RTE_NBR	Intersct-chg	CHA(11)	I-87	
MILEPOST	MODIFIED REFERENCE POINT LOCATION	Intersct-chg	NUM	I-88	
REF_PNT	REFERENCE POINT	Intersct-chg	CHA(10)	I-88	
ELEM_NBR	INTERCHANGE ELEMENT CODE	Intersct-chg	CHA(3)	I-88	II-235
INT_TYPE	INTERSECTION TYPE	Intersct-chg	NUM	I-88	II-241
DESC_	INTERSECTION DESCRIPTION	Intersct-chg	NUM	I-88	
TYPEDESC	INTERSECTION DESCRIPTION-REVISED	Intersct-chg	NUM	I-89	II-256
RAIL_NBR	RAILROAD CROSSING NUMBER	Intersct-chg	CHA(8)	I-89	
TRAF_DEV	TRAFFIC CONTROL DEVICES	Intersct-chg	NUM	I-89	
TRF_CNTL	TRAFFIC CONTROL DEVICES-REVISED	Intersct-chg	NUM	I-90	II-252
SIGN_PRO	TRAFFIC SIGNALS PROGRESSION	Intersct-chg	NUM	I-90	
SIGN_TIM	TRAFFIC SIGNALS TIMING	Intersct-chg	NUM	I-91	II-248
SIGN_CON	TRAFFIC SIGNALS CONSTRUCTION	Intersct-chg	NUM	I-91	
SIGN_PLA	SIGNAL HEAD PLACEMENT	Intersct-chg	NUM	I-91	
SIGN_PED	TRAFFIC SIGNALS PEDESTRIAN SIGNALS	Intersct-chg	NUM	I-91	II-247
TRAF_TMO	FLASHING SIGNAL TIME ON	Intersct-chg	CHA(2)	I-91	
TRAF_TMF	FLASHING SIGNAL TIME OFF	Intersct-chg	CHA(2)	I-91	
TRAF_PHS	TRAFFIC SIGNALS NUMBER OF PHASES	Intersct-chg	NUM	I-92	II-251
TRAF_PRE	TRAFFIC SIGNALS PREEMPTION	Intersct-chg	NUM	I-92	
RDWY_LGH	ROADWAY LIGHTING	Intersct-chg	NUM	I-92	II-244
GEN_ENIV	GENERAL ENVIRONMENT	Intersct-chg	NUM	I-92	II-240
SPEC_ENV	SPECIFIC ENVIRONMENT	Intersct-chg	NUM	I-93	II-249
DIST_CAT	CATEGORY ASSIGNED BY DISTRICT	Intersct-chg	CHA(2)	I-93	
CNTL_CAT	CENTRAL OFFICE CATEGORY	Intersct-chg	CHA(2)	I-93	
SFTY_IMY	SAFETY IMPROVEMENT YEAR	Intersct-chg	CHA(2)	I-93	
SFTY_IMD	SAFETY IMPROVEMENT DISTRICT	Intersct-chg	CHA(1)	I-93	
SFTY_PRJ	SAFETY IMPROVEMENT PROJECT NUMBER	Intersct-chg	CHA(2)	I-93	

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"GENERAL" VARIABLES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
SFTY_CLS	SAFETY IMPROVEMENT CLASSIFICATION	Intersct-chg	CHA(2)	I-94	
EFEC_DTE	DATE OF ACCIDENT GEOCODING	Intersct-chg	NUM	I-94	
NBR_RTES	NUMBER OF ROUTES INTO INTERSECTION	Intersct-chg	NUM	I-94	II-243
NBR_LEGS	NUMBER OF LEGS INTO INTERSECTION	Intersct-chg	NUM	I-94	II-242

SEGMENT (ROUTE) SPECIFIC VARIABLES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
RTESYS1	ROUTE SYSTEM - ROUTE 1	Intersct-chg	CHA(2)	I-97	
RTENBR1	ROUTE NUMBER - ROUTE 1	Intersct-chg	CHA(9)	I-97	
REFPNT1	REFERENCE POINT-ROUTE 1	Intersct-chg	CHA(10)	I-98	
RDESC1	ROAD DESCRIPTION	Intersct-chg	NUM	I-98	
LOLIMT1	SEGMENT 1 LOWER LIMIT	Intersct-chg	NUM	I-98	
UPLIMT1	SEGMENT 1 UPPER LIMIT	Intersection	NUM	I-99	
NBR_LEG1	NUMBER OF LEGS ON SEGMENT 1	Intersct-chg	NUM	I-99	

NOTE: Variables for Segments 2-6 would be identical, with last character denoting the Segment number (e.g., RTESYS2, RTESYS3, etc.)

LEG (APPROACH) SPECIFIC VARIABLES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
LEGNBR11	SEGMENT 1, LEG NUMBER 1	Intersct-chg	NUM	I-103	
DIRECT11	SEGMENT 1, LEG 1 DIRECTION	Intersct-chg	NUM	I-103	
AADT111	SEGMENT 1, LEG 1, YEAR 1 AADT	Intersct-chg	NUM	I-103	
ADTYR111	SEGMENT 1, LEG 1, YEAR 1	Intersct-chg	CHA(2)	I-103	
AADT112	SEGMENT 1, LEG 1, YEAR 2 AADT	Intersct-chg	NUM	I-103	
ADTYR112	SEGMENT 1, LEG 1, YEAR 2	Intersct-chg	CHA(2)	I-104	
AADT113	SEGMENT 1, LEG 1, YEAR 3 AADT	Intersct-chg	NUM	I-104	
ADTYR113	SEGMENT 1, LEG 1, YEAR 3	Intersct-chg	CHA(2)	I-104	
AADT114	SEGMENT 1, LEG 1, YEAR 4 AADT	Intersct-chg	NUM	I-104	
ADTYR114	SEGMENT 1, LEG 1, YEAR 4	Intersct-chg	NUM	I-104	
AADT115	SEGMENT 1, LEG 1, YEAR 5 AADT	Intersct-chg	NUM	I-104	
ADTYR115	SEGMENT 1, LEG 1, YEAR 5	Intersct-chg	CHA(2)	I-104	
AP_SPD11	SEGMENT 1, LEG 1, APPROACH SPEED LIMIT	Intersct-chg	NUM	I-104	
APCNTL11	SEGMENT 1, LEG 1, APPROACH TRAFFIC CONTROL	Intersct-chg	NUM	I-105	

NOTE: Variables for all other Legs would be identical. The first numerical character at the end of each variable denotes the segment number, the second numerical character denotes the leg number, and the third numerical character (if present) denotes the year of the data. For example, DIRECT21 would denote the direction variable for segment 2, leg 1. In like fashion, AADT223 would denote the AADT for segment 2, leg 2, year 3.

"GENERAL" VARIABLES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
RTE_SYS	ROUTE SYSTEM	Intersct-chg	CHA(2)	I-87	II-245
RTE_NBR	ROUTE NUMBER	Intersct-chg	CHA(9)	I-87	
INT_SYNB	COMBINED RTE_SYS/RTE_NBR	Intersct-chg	CHA(11)	I-87	
MILEPOST	MODIFIED REFERENCE POINT LOCATION	Intersct-chg	NUM	I-88	
REF_PNT	REFERENCE POINT	Intersct-chg	CHA(10)	I-88	
ELEM_NBR	INTERCHANGE ELEMENT CODE	Intersct-chg	CHA(3)	I-88	II-235
INT_TYPE	INTERSECTION TYPE	Intersct-chg	NUM	I-88	II-241
DESC_	INTERSECTION DESCRIPTION	Intersct-chg	NUM	I-88	
TYPEDESC	INTERSECTION DESCRIPTION-REVISED	Intersct-chg	NUM	I-89	II-256
RAIL_NBR	RAILROAD CROSSING NUMBER	Intersct-chg	CHA(8)	I-89	
TRAF_DEV	TRAFFIC CONTROL DEVICES	Intersct-chg	NUM	I-89	
TRF_CNTL	TRAFFIC CONTROL DEVICES-REVISED	Intersct-chg	NUM	I-90	II-252
SIGN_PRO	TRAFFIC SIGNALS PROGRESSION	Intersct-chg	NUM	I-90	
SIGN_TIM	TRAFFIC SIGNALS TIMING	Intersct-chg	NUM	I-91	II-248
SIGN_CON	TRAFFIC SIGNALS CONSTRUCTION	Intersct-chg	NUM	I-91	
SIGN_PLA	SIGNAL HEAD PLACEMENT	Intersct-chg	NUM	I-91	
SIGN_PED	TRAFFIC SIGNALS PEDESTRIAN SIGNALS	Intersct-chg	NUM	I-91	II-247
TRAF_TMO	FLASHING SIGNAL TIME ON	Intersct-chg	CHA(2)	I-91	
TRAF_TMF	FLASHING SIGNAL TIME OFF	Intersct-chg	CHA(2)	I-91	
TRAF_PHS	TRAFFIC SIGNALS NUMBER OF PHASES	Intersct-chg	NUM	I-92	II-251
TRAF_PRE	TRAFFIC SIGNALS PREEMPTION	Intersct-chg	NUM	I-92	
RDWY_LGH	ROADWAY LIGHTING	Intersct-chg	NUM	I-92	II-244
GEN_ENIV	GENERAL ENVIRONMENT	Intersct-chg	NUM	I-92	II-240
SPEC_ENV	SPECIFIC ENVIRONMENT	Intersct-chg	NUM	I-93	II-249
DIST_CAT	CATEGORY ASSIGNED BY DISTRICT	Intersct-chg	CHA(2)	I-93	
CNTL_CAT	CENTRAL OFFICE CATEGORY	Intersct-chg	CHA(2)	I-93	
SFTY_IMY	SAFETY IMPROVEMENT YEAR	Intersct-chg	CHA(2)	I-93	
SFTY_IMD	SAFETY IMPROVEMENT DISTRICT	Intersct-chg	CHA(1)	I-93	
SFTY_PRJ	SAFETY IMPROVEMENT PROJECT NUMBER	Intersct-chg	CHA(2)	I-93	
SFTY_CLS	SAFETY IMPROVEMENT CLASSIFICATION	Intersct-chg	CHA(2)	I-94	
EFEC_DTE	DATE OF ACCIDENT GEOCODING	Intersct-chg	NUM	I-94	
NBR_RTES	NUMBER OF ROUTES INTO INTERSECTION	Intersct-chg	NUM	I-94	II-243
NBR_LEGS	NUMBER OF LEGS INTO INTERSECTION	Intersct-chg	NUM	I-94	II-242

SAS FORMAT DEFINITIONS FOR "GENERAL" VARIABLES FROM THE MINNESOTA INTERSECTION/INTERCHANGE FILE

NOTE: SAS variable names and explanatory names are shown above each listing. (See Discussion for information on SAS formats.)

RTE_SYS **ROUTE SYSTEM**

'01' = 'ISTH'	Interstate trunk highway
'02' = 'USTH'	U.S. trunk highway
'03' = 'MNTH'	Minnesota trunk highway
'04' = 'CSAH'	County state-aid highway
'05' = 'MSAS'	Municipal state-aid street
'07' = 'CNTY'	County road
'08' = 'TWNS'	Township road
'09' = 'UTWN'	Unorganized township road
'10' = 'MUN'	City streets
'11' = 'NATP'	National park road
'12' = 'NFD'	National forest development road
'13' = 'IND'	Indian reservation road
'14' = 'SFR'	State forest road
'15' = 'SPRK'	State park road
'16' = 'MIL'	Military road
'17' = 'NATM'	National monument road
'18' = 'NATW'	National wildlife refuge road
'19' = 'FRNT'	Frontage road
'20' = 'SGAM'	State game preserve road
'21' = 'PRV RD PUBLIC'	Private road open to public
'23' = 'ALLEY/CEMTERY'	Alleys and cemeteries

RTE_NBR **ROUTE NUMBER**

NON-LABELED VARIABLE

NOTE: 'NNNNNNNNX' = ROUTE NUMBER (N=0-9, and X is numeric, alpha, or blank. Note that in a few cases with county/township roads, an alpha character will appear in other columns.) This variable is used for file linkage * see INT_SYNB.

INT_SYNB **COMBINED RTE_SYS/RTE_NBR**

NON-LABELED VARIABLE

NOTE: This is a combined version of the RTE_NBR and RTE_SYS variables above. This combining was done to facilitate computer linkage with other files.

MILEPOST MODIFIED REFERENCE POINT LOCATION

NON-LABELED VARIABLE

NOTE: This is a reformatted version of the original "Reference Point" variable in the MN files. The reformatting was done to facilitate computer linkage with other files.

REF_PNT REFERENCE POINT

NON-LABELED VARIABLE -- Reference point location - Reformatted to MILEPOST for linkage.

ELEM_NBR INTERCHANGE ELEMENT CODE

NON-LABELED VARIABLE -- The reader should first see the Note under INT_TYPE below. ELEM_NBR is a three-character variable giving the code for interchange elements (e.g., mainline between ramps, exit ramp, intersection at ramp terminal on crossing roadway, etc.) These codes are only present for a subset of interchanges in the file - primarily diamond interchanges - and denote that this record is a supplemental record for this interchange. They are retained in the file to assist in linking accidents to specific interchange elements within these diamond interchanges -- the same code is found in the Accident File. The coding is either "ANN" or "NNN", where "A" is alpha and "N" is numeric. The formats for the possible codes (i.e., possible interchange element types) is very complex. It is not presented here, but can be obtained from HSIS staff.

INT_TYPE INTERSECTION TYPE

1 = 'INTERCHANGE'	Interchange
2 = 'INTSEC WITHN INT'	Intersection within interchange
3 = 'INTERSECTION'	Intersection
4 = 'MD BLOCK PED CRO'	Mid-Block pedestrian crossing
5 = 'RR CROSSING'	Railroad crossing
6 = 'RECREATION CROS'	Recreational crossing

NOTE: As detailed in the earlier Discussion, basic intersections (i.e., those not part of an interchange) are coded as "3". Each interchange will have a record in the file coded as INT_TYPE = "1". In addition, some interchanges (primarily diamond interchanges) will have supplemental records in the file which will have the same milepost as the type "1" record (and the same general descriptors), but which will be coded as type "2" -- intersections within an interchange. These type "2" supplemental records will also have an Interchange Element Code as a further identifier. See ELEM_NBR above.

DESC_ INTERSECTION DESCRIPTION

NON-LABELED VARIABLE

NOTE: Due to its complexity in the Minnesota raw files, this variable was reformatted into TYPEDESC (see below).

TYPEDESC **INTERSECTION DESCRIPTION-REVISED**

10 = 'OTHER INTERCHANG'	Other Interchange
11 = 'DIAM INTERCHANGE'	Diamond Interchange
12 = 'HALF DIAM INTERC'	Half Diamond Interchange
13 = 'FLD DIAM INTERCH'	Folded Diamond Interchange
14 = 'OTH DIAM INTERCH'	Other Diamond Interchange
15 = 'TRUMPET INTERCHA'	Trumpet Interchange
16 = 'CLOVERLEAF INTER'	Cloverleaf Interchange
17 = 'PART DIR INTERCH'	Partial Directional Interchange
18 = 'FULL DIR INTERCH'	Full directional Interchange
19 = 'COMPLEX INTERCH'	Complex Interchange
20 = 'OTHER INTERSECT'	Other Intersection
21 = 'DIAM INTERSECT'	Diamond Intersection
22 = 'HALF DIAM INTERS'	Half Diamond Intersection
23 = 'FLD DIAM INTERSE'	Folded Diamond Intersection
24 = 'OTH DIAM INTERSE'	Other Diamond Intersection
25 = 'TRUMPET INTERSEC'	Trumpet Intersection
26 = 'CLVERLEA INTERSE'	Cloverleaf Intersection
27 = 'PART DIR INTERSE'	Partial Directional Intersection
28 = 'FULL DIR INTERSE'	Full directional Intersection
29 = 'COMPLEX INTERSEC'	Complex Intersection
31 = 'TEE INTERSECTION'	Tee Intersection
32 = 'WYEE INTERSECTON'	Wyee Intersection
33 = 'CRX RGHT/AN INTE'	Crossing at Right Angles Intersection
34 = 'CRX SKEW INTERSE'	Crossing Skewed Intersection
35 = '> 4 LEG INTERSEC'	Greater than four leg Intersection
41 = 'SCH CRX PED CROS'	School or Pedestrian Crossing
42 = 'BUS DIST CROSSIN'	Central Business District Crossing
43 = 'OTHER CROSSING'	Other Crossing
51 = 'S/TRK R/ANG RRX'	Single Track, Right Angle Railroad Crossing
52 = 'S/TRK SKEWED RRX'	Single Track, Skewed Railroad Crossing
53 = 'M/TRK R/ANG RRX'	Multi-Track, Right Angle Railroad Crossing
54 = 'M/TRK SKEWED RRX'	Multi-Track, Skewed Railroad Crossing
60 = 'REC AREA N/A'	Recreational Crossing-Not Applicable

NOTE: In some cases, intersection types denoted by codes 20-34 will not match exactly with information on number of legs in the NBR_LEGS variable. The Minnesota Department of Transportation has been notified of this problem and it should be corrected in data in future years.

RAIL_NBR **RAILROAD CROSSING NUMBER**

NON-LABELED VARIABLE -- '   ' = 'NOT STATED'
'NNNNNNNA' = Railroad crossing number

TRAF_DEV **TRAFFIC CONTROL DEVICES**

NON-LABELED VARIABLE

NOTE: Due to its complexity in the Minnesota raw files, this variable was reformatted into TRF_CNTL (see below).

TRF_CNTL TRAFFIC CONTROL DEVICES-REVISED

10 = 'NOT APPLICABLE'	Not applicable
11 = 'UNSIG RAMP TERM'	Unsignalized Ramp Terminals
12 = 'SIGNAL RAMP TERM'	Signalized Ramp Terminals
21 = 'NONE INTERCHANGE'	No Interchange
22 = 'THRU YIELD INCHG'	Thru/Yield Interchange
23 = 'THRU STOP INCHG'	Thru/Stop Interchange
24 = 'ALL STOP INCHG'	All Stop Interchange
25 = 'FLS AMB/RD INCHG'	Flashers - Amber/Red Interchange
26 = 'FLS RED/RED INCH'	Flashers - Red/Red Interchange
27 = 'SIGNALS INCHG'	Signalized Interchange
28 = 'OTHER INCHG'	Other Interchange
31 = 'NONE INTERSECTON'	No Intersection
32 = 'THRU YIELD INTER'	Thru/Yield Intersection
33 = 'THRU STOP INTER'	Thru/Stop Intersection
34 = 'ALL STOP INTER'	All Stop Intersection
35 = 'FLS AMB/RD INTER'	Flashers - Amber/Red Intersection
36 = 'FLS RED/RED INTE'	Flashers - Red/Red Intersection
37 = 'SIGNALS INTER'	signalized Intersection
38 = 'OTHER INTER'	Other Intersection
41 = 'MDBK PED-MRK/SGN'	Mid-block pedestrian crossing - Pavement marking and signing
42 = 'MDBK PED-PST FLS'	Mid-block pedestrian crossing - Flasher - pedestal mount
43 = 'MDBK PED-OVH FLS'	Mid-block pedestrian crossing - Flasher - overhead
44 = 'MDBK PED-SIGNAL'	Mid-block pedestrian crossing - Signal
51 = 'RR XBUCK+RRX'	Crossbuck plus RXR
52 = 'RR XBUCK+RXR+WRN'	Crossbuck plus RXR plus other warning signs
53 = 'RR XBUCK+STOPSGN'	Crossbuck plus stop sign
54 = 'RR SIG ONLY PDST'	Railroad crossing signal w/o gates - Pedestal mount
55 = 'RR SIG ONLY CANT'	Railroad crossing signal w/o gates - Cantilever
56 = 'RR SIG/GATE PDST'	Railroad crossing signal w/gates - Pedestal mount
57 = 'RR SIG/GATE CANT'	Railroad crossing signal w/gates - Cantilever
58 = 'RR OTHER/NONE'	Other or None
60 = 'REC CRS NOT APPL'	Recreational Crossing Not Applicable

SIGN_PRO TRAFFIC SIGNALS PROGRESSION

0 = 'NOT APPLICABLE'	Not applicable
1 = 'NOT IN PROG SYS'	Not in progression system
2 = 'IN PROGR SYSTEM'	In progression system

SIGN_TIM **TRAFFIC SIGNALS TIMING**

0 = 'NOT APPLICABLE'	Not applicable
1 = 'FIXED TIME'	Fixed time
2 = 'ACTUATED'	Actuated

SIGN_CON **TRAFFIC SIGNALS CONSTRUCTION**

0 = 'NOT APPLICABLE'	Not applicable
1 = 'TEMPORARY'	Temporary (includes wood poles)
2 = 'PERMANENT'	Permanent

SIGN_PLA **SIGNAL HEAD PLACEMENT**

0 = 'NOT APPLICABLE'	Not applicable
1 = 'PEDEST MOUNT ONL'	Pedestrian mount only
2 = 'OVERHEAD'	Overhead

SIGN_PED **TRAFFIC SIGNALS PEDESTRIAN SIGNALS**

0 = 'NOT APPLICABLE'	Not applicable
1 = 'NO PEDEST SIGNAL'	No pedestrian signals
2 = 'PED SIG NOT ACTU'	Pedestrian signals - Not pedestrian actuated
3 = 'PED ACT WLK GREE'	Pedestrian signals - Pedestrian actuated - Walk with green
4 = 'PED ACT SCAM SYS'	Pedestrian signals - Pedestrian actuated - Scramble system

TRAF_TMO **FLASHING SIGNAL TIME ON**

' ' = 'NOT APPLICABLE'	Not applicable
'00' = 'NO P/TIME FLAS'	Not on parttime flash system
'01'-'24' = Time parttime flash system begins	Time parttime flash system terminates/begins

TRAF_TMF **FLASHING SIGNAL TIME OFF**

' ' = 'NOT APPLICABLE'	Not applicable
'00' = 'NO P/TIME FLAS'	Not on parttime flash system
'01'-'24' = Time parttime flash system terminates	Time parttime flash system terminates/begins

TRAF_PHS **TRAFFIC SIGNALS NUMBER OF PHASES**

0 = 'NOT APPLICABLE'	Not applicable
2 = 'TWO PHASES'	Number of phases
3 = 'THREE PHASES'	
4 = 'FOUR PHASES'	
5 = 'FIVE PHASES'	
6 = 'SIX PHASES'	
7 = 'SEVEN PHASES'	
8 = 'EIGHT PHASES'	

TRAF_PRE **TRAFFIC SIGNALS PREEMPTION**

0 = 'NOT APPLICABLE'	Not applicable
1 = 'NO PREEMPTION'	No preemption
2 = 'RAILROAD ONLY'	Railroad only
3 = 'EMERGEN VEH ONLY'	Emergency vehicle only - Vehicle actuated
4 = 'EMERGEN VEH HARD'	Emergency vehicle only - Hard wire
5 = 'BUS ONLY'	Bus only
6 = 'RR/EMERGENCY VEH'	Railroad and emergency vehicle
7 = 'RR AND BUS'	Railroad and bus
8 = 'EMERG VEH + BUS'	Emergency vehicle and bus
9 = 'RR+EMER VEH+BUS'	Railroad & emergency vehicle & bus

RDWY_LGH **ROADWAY LIGHTING**

1 = 'NONE'	None
2 = 'PARTIAL'	Partial
3 = 'FULL'	Full
4 = 'CONTINUOUS'	Continuous
5 = 'PART ENERGY CON'	Partial (energy conservation program)
6 = 'FULL ENERGY CON'	Full (energy conservation program)
7 = 'CONT ENERGY CON'	Continuous (energy conservation program)
8 = 'POINT LIGHTING'	Point lighting

GEN_ENIV **GENERAL ENVIRONMENT**

1 = 'URBAN'	Urban
2 = 'SUBURBAN'	Suburban
3 = 'CITY BYPASS'	City bypass (not for interstate system)
4 = 'RURAL'	Rural

SPEC_ENV **SPECIFIC ENVIRONMENT**

01 = 'CNTRL BUS DIST'	Central business district
02 = 'STRIP COMMR AREA'	Strip commercial area
03 = 'SHOPPING CENTER'	Shopping center
04 = 'INDUST AREA'	Industrial area
05 = 'RESIDENT AREA'	Residential area
06 = 'SCH/SCH CROSSING'	School or school crossing
07 = 'AGR/ISOL BUS/SCH'	Agriculture and isolated business/school
08 = 'AGRICULTURE'	Agriculture
09 = 'EMERGENCY SERVIC'	Emergency service (hospital, fire station, or police)
10 = 'FOREST'	Forest
11 = 'PARK/CAMPGROUND'	Park or campground
12 = 'OTHER REC AREA'	Other recreational area (e.g., golf course)
13 = 'ELDERLY/HANDI'	Elderly or handicapped
14 = 'OTHER'	Other

DIST_CAT **CATEGORY ASSIGNED BY DISTRICT**

NON-LABELED VARIABLE –- Intersection/interchange category assigned by individual districts only limited use, and no format available.

CNTL_CAT **CENTRAL OFFICE CATEGORY**

NON-LABELED VARIABLE -- ' ' = No category assigned by central office
'01' - '99' = Category assigned by central office

SFTY_IMY **SAFETY IMPROVEMENT YEAR**

NON-LABELED VARIABLE -- Safety improvement year where
' ' = No safety improvement
'70' - 'XX' = Year of improvement

SFTY_IMD **SAFETY IMPROVEMENT DISTRICT**

NON-LABELED VARIABLE -- ' ' = 'NO SAFETY IMPROV'
'1' - '9' = District responsible for improvement

SFTY_PRJ **SAFETY IMPROVEMENT PROJECT NUMBER**

NON-LABELED VARIABLE -- ' ' = 'NO SAFETY IMPROV'
'01' - '99' = Project number assigned

SFTY_CLS SAFETY IMPROVEMENT CLASSIFICATION

NON-LABELED VARIABLE -- ' ' = 'NO SAFETY IMPROV'
'01' - '99' = Safety improvement code

EFEC_DTE DATE OF ACCIDENT GEOCODING

NON-LABELED VARIABLE -- 0=Accident data coded since system startup
YYMMDD=Date from which accident data are geocoded to intersection

NBR_RTES NUMBER OF ROUTES INTO INTERSECTION

NON-LABELED VARIABLE –- 1-9 = Number of routes involved

NBR_LEGS NUMBER OF LEGS INTO INTERSECTION

NON-LABELED VARIABLE –- 1-9 = Number of legs in intersection

SEGMENT (ROUTE) SPECIFIC VARIABLES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
RTESYS1	ROUTE SYSTEM - ROUTE 1	Intersct-chg	CHA(2)	I-97	
RTENBR1	ROUTE NUMBER - ROUTE 1	Intersct-chg	CHA(9)	I-97	
REFPNT1	REFERENCE POINT-ROUTE 1	Intersct-chg	CHA(10)	I-98	
RDESC1	ROAD DESCRIPTION	Intersct-chg	NUM	I-98	
LOLIMT1	SEGMENT 1 LOWER LIMIT	Intersct-chg	NUM	I-98	
UPLIMT1	SEGMENT 1 UPPER LIMIT	Intersection	NUM	I-99	
NBR_LEG1	NUMBER OF LEGS ON SEGMENT 1	Intersct-chg	NUM	I-99	

NOTE: Variables for Segments 2-6 would be identical, with last character denoting the Segment number (e.g., RTESYS2, RTESYS3, etc.)

SAS FORMAT DEFINITIONS FOR SEGMENT-RELATED VARIABLES FROM THE MINNESOTA INTERSECTION/INTERCHANGE FILE

NOTE: SAS variable names and explanatory names are shown above each listing. (See Discussion for information on SAS formats.)

RTESYS1 ROUTE SYSTEM - ROUTE 1

'01' = 'ISTH'	Interstate trunk highway
'02' = 'USTH'	U.S. trunk highway
'03' = 'MNTH'	Minnesota trunk highway
'04' = 'CSAH'	County state-aid highway
'05' = 'MSAS'	Municipal state-aid street
'07' = 'CNTY'	County road
'08' = 'TWNS'	Township road
'09' = 'UTWN'	Unorganized township road
'10' = 'MUN'	City streets
'11' = 'NATP'	National park road
'12' = 'NFD'	National forest development road
'13' = 'IND'	Indian reservation road
'14' = 'SFR'	State forest road
'15' = 'SPRK'	State park road
'16' = 'MIL'	Military road
'17' = 'NATM'	National monument road
'18' = 'NATW'	National wildlife refuge road
'19' = 'FRNT'	Frontage road
'20' = 'SGAM'	State game preserve road
'21' = 'PRV RD PUBLIC'	Private road open to public
'23' = 'ALLEY/CEMTERY'	Alleys and cemeteries

NOTE: This variable is used in linkage to other files. See Note under REFPNT1 below.

RTENBR1 ROUTE NUMBER - ROUTE 1

NON-LABELED VARIABLE

NOTE: 'NNNNNNNNX' = ROUTE NUMBER (N=0-9, and X is numeric, alpha, or blank. Note that in a few cases with county/township roads, an alpha character will appear in other columns.) This variable is used for file linkage. See REFPNT1.

REFPNT1 **REFERENCE POINT-ROUTE 1**

NON-LABELED VARIABLE -- Reference point location on Route number 1.

NOTE: In over 97% of the cases, Route 1 is usually the "primary" route used for general intersection location. Thus, RTESYS1 and RTENBR1 is usually the same as RTE_SYS and RTE_NBR, and REFPNT1 is the same as REF_PNT. For the crossing roads, RTESYS2, RTENBR2 and REFPNT2 will be used for the first crossing route, RTESYS3, etc. for the second crossing route, etc. While the original REF_PNT was converted to MILEPOST for ease of computer linkage, REFPNT1-X has not been converted. However, HSIS staff has developed a computer program to allow linkage of these crossing routes with other files. The user can request the program or variables from the linked files from our staff.

RDESC1 **ROAD DESCRIPTION**

1 = '2 LANE 2 WAY'	2 lanes 2-way
2 = '3/5 LN UND-2W,LT'	3/5 lanes undivided (2-way with left turn lane)
3 = '4/6 LN UND-NLTL'	4/6 lanes undivided (no left turn lanes)
4 = '4/6 LN UND-LTL'	4/6 Lanes undivided (with left turn lanes)
5 = '4/6 LN DIV-NLTL'	4/6 lanes divided (no left turn lanes)
6 = '4/6 LN DIV-LTL'	4/6 lanes divided (with left turn lanes)
7 = 'ONE-WAY'	One-way
8 = 'FREEWAY'	Freeway
9 = 'OTHER'	Other

NOTE: Coding for this variable is somewhat questionable since two identical intersections may be coded into different categories. Specifically, it appears that the number of lanes shown at the first of each category (e.g., "3/5," or "4/6") could be interpreted by the district coders as either the total number of lanes (counting left-turn lanes) or the total number of through lanes. The main problem appears to be in categories "2" and "4." Here, for example, an undivided four-lane roadway with opposing left-turn lanes at the intersection might be coded as a category "2" or a category "4." It also appears that category "6" is a rather broad category. Here, all divided roadway with a median continuing up to the intersection proper which have four or more through lanes and either single or double left-turn lanes would be coded as a "6."

LOLIMT1 **SEGMENT 1 LOWER LIMIT**

NON-LABELED VARIABLE –- Lower reference point limit:
0000-9999 = Dist. in ft from intersection towards beginning of route used as lower search limit for accident occurrences

UPLIMT1 SEGMENT 1 UPPER LIMIT

NON-LABELED VARIABLE –- Upper reference point limit:
0000-9999 = Dist. in ft from intersection towards end of route used as upper search limit for accident occurrences

NBR_LEG1 NUMBER OF LEGS ON SEGMENT 1

NON-LABELED VARIABLE –- Number of legs described in this record:
1-2 = Number of legs

LEG (APPROACH) SPECIFIC VARIABLES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
LEGNBR11	SEGMENT 1, LEG NUMBER 1	Intersct-chg	NUM	I-103	
DIRECT11	SEGMENT 1, LEG 1 DIRECTION	Intersct-chg	NUM	I-103	
AADT111	SEGMENT 1, LEG 1, YEAR 1 AADT	Intersct-chg	NUM	I-103	
ADTYR111	SEGMENT 1, LEG 1, YEAR 1	Intersct-chg	CHA(2)	I-103	
AADT112	SEGMENT 1, LEG 1, YEAR 2 AADT	Intersct-chg	NUM	I-103	
ADTYR112	SEGMENT 1, LEG 1, YEAR 2	Intersct-chg	CHA(2)	I-104	
AADT113	SEGMENT 1, LEG 1, YEAR 3 AADT	Intersct-chg	NUM	I-104	
ADTYR113	SEGMENT 1, LEG 1, YEAR 3	Intersct-chg	CHA(2)	I-104	
AADT114	SEGMENT 1, LEG 1, YEAR 4 AADT	Intersct-chg	NUM	I-104	
ADTYR114	SEGMENT 1, LEG 1, YEAR 4	Intersct-chg	NUM	I-104	
AADT115	SEGMENT 1, LEG 1, YEAR 5 AADT	Intersct-chg	NUM	I-104	
ADTYR115	SEGMENT 1, LEG 1, YEAR 5	Intersct-chg	CHA(2)	I-104	
AP_SPD11	SEGMENT 1, LEG 1, APPROACH SPEED LIMIT	Intersct-chg	NUM	I-104	
APCNTL11	SEGMENT 1, LEG 1, APPROACH TRAFFIC CONTROL	Intersct-chg	NUM	I-105	

NOTE: Variables for all other Legs would be identical. The first numerical character at the end of each variable denotes the segment number, the second numerical character denotes the leg number, and the third numerical character (if present) denotes the year of the data. For example, DIRECT21 would denote the direction variable for segment 2, leg 1. In like fashion, AADT223 would denote the AADT for segment 2, leg 2, year 3.

SAS FORMAT DEFINITIONS FOR LEG-RELATED VARIABLES FROM THE MINNESOTA INTERSECTION/INTERCHANGE FILE

NOTE: SAS variable names and explanatory names are shown above each listing. (See Discussion for information on SAS formats.)

LEGNBR11 SEGMENT 1, LEG NUMBER 1

NON-LABELED VARIABLE -- Leg number of first leg:
0 = 'NOT APPLICABLE'
1-12 = Number assigned

DIRECT11 SEGMENT 1, LEG 1 DIRECTION

0 = 'NOT APPLICABLE'
1 = 'NORTH'
2 = 'NORTHEAST'
3 = 'EAST'
4 = 'SOUTHEAST'
5 = 'SOUTH'
6 = 'SOUTHWEST'
7 = 'WEST'
8 = 'NORTHWEST'

AADT111 SEGMENT 1, LEG 1, YEAR 1 AADT

NON-LABELED VARIABLE -- 000000 = Not applicable or no traffic
000001-999999 = 2-way volume on leg, most recent available year

NOTE: Most AADT's are probably not current. The user can determine which year the AADT was collected for each leg from the "AADT Year" variable attached to each leg. However, we have found that the "AADT Year" will seldom be the current (file) year, and that the year of the AADT count can be different for different legs of the same intersection. Unfortunately, we cannot suggest a method for "updating" the AADT data to later years. Since multiple years data are often shown in the file, the user may be able to develop a "trend-related update", but we cannot assure that the estimates will be correct.

ADTYR111 SEGMENT 1, LEG 1, YEAR 1

NON-LABELED VARIABLE –- Year AADT111 was collected:
'YY' or YY = Last two digits of year
' ',' 0','00', 0, or blank = No AADT available

NOTE: This variable can either be a numeric or a character variable.

AADT112 SEGMENT 1, LEG 1, YEAR 2 AADT

NON-LABELED VARIABLE –- See AADT111 above.

ADTYR112 **SEGMENT 1, LEG 1, YEAR 2**

NON-LABELED VARIABLE –- See AADT111 above.

AADT113 **SEGMENT 1, LEG 1, YEAR 3 AADT**

NON-LABELED VARIABLE –- See AADT111 above.

ADTYR113 **SEGMENT 1, LEG 1, YEAR 3**

NON-LABELED VARIABLE –- See AADT111 above.

AADT114 **SEGMENT 1, LEG 1, YEAR 4 AADT**

NON-LABELED VARIABLE –- See AADT111 above.

ADTYR114 **SEGMENT 1, LEG 1, YEAR 4**

NON-LABELED VARIABLE –- See AADT111 above.

AADT115 **SEGMENT 1, LEG 1, YEAR 5 AADT**

NON-LABELED VARIABLE –- See AADT111 above.

ADTYR115 **SEGMENT 1, LEG 1, YEAR 5**

NON-LABELED VARIABLE –- See AADT111 above.

AP_SPD11 **SEGMENT 1, LEG 1, APPROACH SPEED LIMIT**

NON-LABELED VARIABLE –- 00 = 'UNKNOWN'
01-70 = Approach speed in mph

APCNTL11 SEGMENT 1, LEG 1, APPROACH TRAFFIC CONTROL

If INT_TYPE (intersection type) is anything except a Railroad grade crossing (i.e., INT_TYPE ne 5):

0 = 'NOT APPLICABLE'	
1 = 'THRU OR ONE-WAY'	Through or one-way leaving intersection
2 = 'YIELD SIGN'	
3 = 'STOP SIGN'	
4 = 'FLASHER - AMBER'	
5 = 'FLASHER - RED'	
6 = 'SIGNAL'	

If INT_TYPE is railroad grade crossing (i.e., INT_TYPE = 5):

0 = 'RR NOT APPLCABLE'	
1 = 'XBUCK + RXR SIGN'	Crossbuck plus RXR sign
2 = 'XBUCK+RXR+WARNNG'	Crossbuck plus RXR plus other warning sign
3 = 'XBUCK + STOP SGN'	Crossbuck plus stop sign
4 = 'RR SIG ONLY PDST'	Crossing signal w/o gates - Pedestal mount
5 = 'RR SIG ONLY CANT'	Crossing signal w/o gates - Cantilever
6 = 'RR SIG/GATE PDST'	Railroad crossing signal w/gates - Pedestal mount
7 = 'RR SIG/GATE CANT'	Railroad crossing signal w/gates - Cantilever
8 = 'RR OTHER OR NONE'	Railroad crossing other or no protection