

# HIGHWAY SAFETY INFORMATION SYSTEM

## *GUIDEBOOK FOR THE UTAH STATE DATA FILES*

**Volume I:  
SAS FILE FORMATS**

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## INTRODUCTION

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

Utah's basic highway information system is one of the most complete data base management systems found in any of the HSIS States in terms of the number of files included in the system and the flexibility of output. *Since the mid-1980's, the system has either been known as the "Highway Information System" or the "SR/Route and Traffic System." It has been a relational system built on a data base management system named ADABAS. The flexibility of ADABAS allows Utah to "spin off" any number of variables into different file formats. In 2000, the older IBM-based system is being converted to a Client/Server system, run on a UNIX platform, with Informix as the relational database.*

The raw files requested for the HSIS include the following:

Accident data:

Accident subfile

Vehicle subfile

Occupant subfile

Roadlog File (Inventory information)

Horizontal Curve File

Vertical Grade File

The decision to request subfiles rather than one large accident file which would capture all accident, vehicle, and occupant data together was made in order to be consistent with other HSIS State formats. For additional consistency, variables related to drivers which did not originally appear on the Vehicle subfile have been copied from the Occupant subfile into that subfile. For ease of use, the three accident subfiles, the Roadlog File, the Horizontal Curve File, and the Grade File have been converted to SAS files.

Raw file data are provided to the Highway Safety Research Center 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 FHWA offices.

Beginning in 1994, the HSIS system was converted to a relational database for internal use. This database, using a SYBASE system, stores the data received from Utah 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.

As noted above, the accident data are in three separate files. The Accident Subfile (including crashes from **1985-97**), containing basic information on accident type, location, environment, etc. can be linked with the Vehicle Subfile (which contains information on each vehicle in the crash and each driver) and the Occupant Subfile (which contains information on each occupant in each vehicle and non-occupants such as pedestrians, pedalcyclists, etc.) through use of the accident case number, vehicle number, and year. The Accident and other major files can be linked through use of a route-milepoint system and year with the milepoints for a given route beginning at the State line.

The Roadlog File contains yearly characteristics of **14,000** miles of the road system including shoulder and median information, pavement type and width, lane information, etc. Thus, a separate file exists for **1985, 1986, 1988, 1989, and 1991-1994, and 1996-1997** allowing correct roadway information to be linked with accidents occurring during a given year. (*Note that there is no 1995 file due to data linkage problems that will be described later in this narrative.*) This file is composed of homogeneous segments of all state and federal-aid roadways which are classified as collectors and above, with a new segment defined each time any of the recorded variables changes. In addition, unlike some other State data bases which use separate files, this Roadlog file also contains traffic information (AADT).

The Horizontal Curve and Vertical Grade Files were generated to produce information on specifics of curvature. This information contains degree of curve, direction of curve, and percent and direction of grade. While a new section in the Roadlog File is begun each time any variable changes (e.g., pavement

type), new sections in these files begin only at the beginning and end points of curves and grades. These data can be merged with the Roadlog and Accident Files through the same route-milepoint key. *(As described in more detail in the later sections, these files are no longer updated by Utah after 1994.)*

Details of the three Accident subfiles, the Roadlog File, the Horizontal Curve File, and the Grade File are presented in the following section.

## DETAILS OF MAJOR FILES

### The Accident Subfiles

*As with the other states in the HSIS system, the Utah accidents that are captured in the system are only those that can be linked with the Roadlog File (the roadway inventory data). In Utah, approximately 85-90 percent of the total reportable crashes in the state are linkable to the inventory information. Non-linkable crashes primarily consist of crashes on roads not mileposted or inventoried where the crash was given a “zone” location, and crashes which can be located to routes, but not to specific mileposted locations on the routes. Most of these locations (and crashes) are on lower-order county and municipal roads.*

The accident data in the State of Utah are coded and edited by staff at Utah DOT. This group locates each of the accidents based on the inputs provided on the report by the investigating officer. Currently, there are *thirteen* years of accident data in the Utah HSIS files -- *1985-1997*. This data set includes between *35,000 and 50,000* accidents per year *between 1985 and 1997*, *63,000 -95,000* vehicles per year, and *91,000 - 140,000* occupants/pedestrians per year. Unlike certain other HSIS States, the Occupant subfile contains information on each occupant in the crash, whether injured or not.

To insure data quality, coders within the DOT Division of Safety input the data received from police officers in both urban and rural locations. *The same report form is used statewide with a reporting level of \$750 total damage and/or personal injury.* The coders in Utah DOT headquarters correct the information based on what they see on the form, and actually call the police officer back if they have some question on the accident location or other data. Thus, the feeling is that location information and other

variables are approximately 95 percent correct in the rural areas. Re-verification checks for samples of these variables are conducted to check the accuracy. Information provided by the local police is not quite as accurate as that provided by the state police, but it is still considered to be quite accurate.

Based on examination of single- versus multi-vehicle crash percentages and on the fact that city police agencies investigate over 50 percent of the crashes, it appears that the Utah files are slightly weighted toward urban crashes, although not as much as certain other HSIS States.

To investigate data completeness and accuracy, Utah staff was questioned about their experience with files, and a series of single variable tabulations of more than 70 key variables were produced and examined for each year of data in the system. This allows HSIS staff to look for both significant percentages of uncoded or “unknown” data within each variable and for changes in individual variable codes across time. When problems are found, Utah staff is contacted to provide an explanation or to conduct further internal checks. The variables examined ranged from various accident descriptors including accident type, day of week, number of vehicles involved, accident severity, road surface, object struck, and investigating agency; to vehicle-related variables involving travel and impact speed, contributing factors and vehicle type; to occupant variables related to safety equipment use, age, sex, and alcohol use.

The quality control checks indicated some problems with a number of variables. However, the problems identified were generally minor in nature, concerned variables which will not be used very often in FHWA analyses, or were problems which can be overcome to some extent by knowledge of how the data behave.

The problems identified can be categorized into a number of categories including (1) variables which have a relatively high percentage of uncoded data; (2) changes in the 1986 accident report form and thus the coding of accident variables; (3) variables which appear to have inconsistent coding across years (often the result of the officers switching from leaving the variable uncoded to a “no” or “none” code); (4) variables which have problems that could well be related to the nature of the codes available to the investigating officer (e.g., the lack of a “not injured” code in the “Injured Body Area” variable); (5) variables which appear to have problems due to possible errors in computation programs within the Utah system (which have subsequently been corrected); and (6) variables that simply represent poor data. In each of these cases

where a problem is found, a “NOTE” is included under the variable description in the SAS format section which follows. As might be expected, in some cases the data in certain variables improve over time. These instances are noted also.

With respect to the second issue, discussions with Utah staff concerning inconsistencies in the data across years brought to light the fact that there were major changes in the accident report form and thus the way certain variables were coded in 1986. For example, within the "Accident Type" variable (and the related “subsequent event” variables), there were no instances of "ran-off-road left or right" in 1985, but a suspiciously large number of instances of "ran-off through median" codes for that year. The explanation was that the code now used for "ran-off through median" (09) represented all ran-off-road crashes prior to 1986. The coding was changed early in 1986 to allow categorizing the ran-off-road accidents into right, left, and through median. In other cases (e.g., “Traffic Control Type”), the variable was expanded in 1986 to include additional variables.

To further investigate the accuracy of the data, comparisons were made of pairs of variables in the file which should have been somewhat similar according to their definitions. In addition, the single-variable tabulations were compared to the other HSIS States to see if large differences existed. The comparisons within the files usually indicated a high degree of consistency between similar variables.

Finally, as noted earlier, the majority of driver-related variables appear both on the Vehicle and Occupant subfiles. However, due to the layout of the original raw files, a limited number of variables (e.g., "Driver License Type," "Years Driving Experience," "Drivers License Restriction") appear only on the Vehicle subfile. It is noted that since there are some vehicles which would not have drivers or driver data (e.g., parked vehicles or hit-and-run vehicles), the totals at the bottom of tables for the driver variables copied from the Occupant subfile will be slightly lower than the totals for the driver variables in the original Vehicle subfile. For the latter Vehicle-subfile variables, there will be slightly more "not coded" or "unknown" driver codes.

In summary, it appears that there are a number of variables in the Utah accident files in which there are potential errors that the analyst must be aware of. Fortunately, the majority of these variables will not be primary variables in much of the analysis done by FHWA. However, the problems must be kept in mind in

any analyses conducted and, as with other Guidebooks, these errors are noted within the format statements for each variable affected.

#### VIN Data

*Supplemental data on a vehicles characteristics (e.g., engine information, air bag presence, wheelbase, etc.) can be developed by decoding the VIN (Vehicle Identification Number) collected on crash forms by police agencies in some states. For Accident/Vehicle Files from 1987- 94, formats for the decoded VIN files were included in the original Guidebooks, and separate VIN files were developed for each year of data for the states of Utah, Illinois, Michigan, and North Carolina. When a vehicle in the Vehicle File had a legitimate VIN, this decoding was done using the VINDICATOR program distributed by the Highway Loss Data Institute of IIHS (the Insurance Institute of Highway Safety). This detailed information could then be linked back with the vehicle file using the Accident Case Number and the Vehicle Number.*

*Because of the very limited use of the VIN data by researchers and difficulties we encountered with the decoding process after 1994, the VIN variable listing found in the original Guidebooks for these states has been removed from this version. However, HSIS continues to capture the VIN, and has the capabilities of decoding the VIN for users. For Utah, decoded VIN information is available for 1987-96, and VINs for later years can be decoded upon request. For more information on this data, contact the HSIS staff.*

#### The Roadlog File

Of the approximately 50,000 miles of highway in Utah, approximately **14,000** are included in the HSIS Roadlog File for roadway inventory and accident linkage purposes. *Annual files exist for 1985, 1986, 1988, 1989, 1991- 1994, and 1996 -1997.* Inventory information on either the 1989 or 1991 files are felt to be suitable for use with 1990 accident data. *There is no 1995 file in HSIS. Utah staff “re-mileposted” crashes for 1995, but did not begin the corresponding Roadlog File re-mileposting until 1996. Thus, the 1995 crashes did not link accurately with the 1995 Roadlog File. Inventory information on the 1996 file is felt to be suitable for linkage with the 1995 crash data. (In some*



*multi-year analyses conducted in the past with HSIS data, multiple years – e.g., three years – of crash data have been linked with one year of inventory data, most often the “middle year.” However, this remileposting means that in such analyses, the researcher should NOT link 1994 and earlier crash data with post-1994 inventory data, or 1995 and later crash data should not be linked with pre-1996 roadway inventory data.)*

As noted below, Utah staff indicates highest confidence in the accuracy of the inventory data on the *8,200 miles of roadway on the Federal Aid system and non-Federal Aid "State" or “Other Federal” system. This includes approximately 950 miles of Interstate roadways, approximately 4,900 miles of other State-system roadways (almost all of which is also on the Federal Aid system), approximately 1,760 miles of non-State, Federal-Aid roadway (primarily Federal-Aid county and municipal roadways) and 640 miles of “other federal” roads (primarily US Forest roads).* Of the *35,000 - 50,000* accidents that occur each year in Utah, it is estimated that approximately 75 percent occur on roads that are on the Federal Aid System or the non-Federal Aid, State system. *The table below provides a categorization of all two-way paved mileage in the system (i.e., unpaved mileage and uncoded mileage is included in the “Other” category).*

*Much of the information of the inventory system in Utah is an outgrowth of effort related to collecting data for the Highway Performance Monitoring System (HPMS) – both the “Universe” and the “Sample” files. The HPMS Sample-file represents approximately 18 percent of the functionally classifiable roadways in the State. This inventory is updated on a three-year cycle. Using the photologging system, some of the variables that are on the HPMS samples are expanded to cover part or all of the universe of roads within the HSIS Roadlog File. This expansion is being done on a year-to-year priority basis, where the priority is based on the importance of a particular variable for use. And as would be expected, variable coding completeness is related to functional classification of roadways, with the lower functional classes (e.g., minor collectors and local roads) exhibiting less complete coding.*

Table 1. HSIS roadway mileage by roadway category (1997 data).

<b>Roadway Category</b>	<b>Mileage</b>
Urban freeways	175.87
Urban freeways < 4 Lanes	4.01
Urban multilane divided non-freeways	383.27
Urban multilane undivided non-freeways	80.25
Urban 2 lane highways	1222.90
Rural freeways	770.69
Rural freeways < 4 Lns	0.18
Rural multilane divided non-freeways	119.11
Rural multilane undivided non-freeways	194.14
Rural 2 lane highways	6451.80
Other	3880.30
<b>Total</b>	<b>13282.52</b>

*Through examinations of the data across years and by working with the Utah staff, the HSIS staff has attempted to define those variables which do and do not fully cover the entire HSIS system. This is difficult at times, since the expansion is a continuing process and the nature and degree of the expansion differs among variables. In some cases, the expansion may be adding*

*additional miles of coding for a given variable. In other, new variables are added to our files in a certain year (e.g., approximately 30 variables were added in HSIS database in 1991). In addition, there are variables in which uncoded data for some HSIS sections (i.e., variables which are only collected on HPMS-sample sections) have been coded as "0" in the files we receive from Utah. Since "0" is sometimes a legitimate value, this can lead to interpretation problems. Where possible, we have attempted to recode the data based on information concerning the location of HPMS-Sample sections (i.e., replace "0" with blanks). Finally, because the HPMS Sample sections are often longer than the HSIS sections, some variables in the HPMS file would not accurately apply to each HSIS sub-section unless corrected. For example, "Number of Signalized Intersections" for an HPMS sample section which covered three Roadlog sections would not apply accurately to each of the Roadlog sections. Fortunately, for most variables of this type, the Utah staff has corrected the values so that they are accurate for the HSIS subsections.*

*Since this expansion from HPMS data does lead to possible interpretational and use problems with some variables, HSIS staff has examined each variable in the data across all years of the files and has worked with the Utah staff in an attempt to define possible issues. These issues are then documented in a "NOTE" in the variable description found in the later SAS format section.*

*In general, variables which are essentially fully coded for all functional classifications include such key variables as county, section length, rural/urban designation, functional system, AADT, number of through lanes, access control, median type, surface/pavement type, shoulder type, national highway system indicator, and others. Most of the remainder of the variables are available for interstate, primary arterial, major collector, and urban-collector across the years, and have less full coding for minor collectors and local roads. Finally, there is a third set which is coded only for HSIS sections which fall within HPMS Sample sections. Specific information on level of coding is noted in the format section for individual variables.*

As in the other HSIS states, each record on the HSIS Roadlog File represents a homogeneous section defined by a change in any of the variables existing on the file. Thus, for example, if pavement width

changes for one or more sections, new section "beginnings" may be produced or old sections may be combined from one year to the next.

Approximately 70 percent of the computer records (i.e., homogeneous sections) on the file are on the federal-aid system. These federal-aid records represent approximately 56 percent of the total mileage covered in the file. Thus, the sections in the federal-aid system are somewhat shorter than the sections in the non-federal-aid system. This is logical, in that the more detailed inventory (and thus, more "breaks" in homogeneous sections) is found on the federal-aid system. Approximately 85 percent of the mileage in the file is rural in nature. Approximately 85 percent of the 14,000 inventoried miles are two-lane sections, and 12 percent of the mileage have four or more lanes. Approximately half of the roadways on the file are low volume in nature with 51 percent of the roadway mileage having AADT's of 500 or less vehicles per day.

To assess data accuracy and completeness, HSIS staff again relied on past analyses with the data, conversations with Utah staff, and computerized and manual comparisons across years of single-variable tabulations for key variables. As noted above, most of the variables on the 14,000 mile inventory file are coded very completely with very few missing values. However, there are high percentages of unknowns for some variables, particularly those which are only coded for HPMS Sample sections, or some expansion of that coding.

*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 "Format" section. This variable is also included as a 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 inquiries 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.*

Finally, added coverage of information occurs in the 1991 file where a number of new variables were added to the Roadlog File. Some refer to engineering details (e.g., thickness of slab), while others appear to be new information on traffic or other variables (e.g., number of signalized intersections). Where available, details are included in the SAS format description.

With respect to data accuracy, as noted above, the inventoried roadways in Utah are composed of three overlapping systems -- the State-controlled system (approximately 5,800 miles, of which 5,600 are also under the Federal-Aid system), additional Federal-Aid highways not on the State-controlled system (approximately 1,700 additional miles, predominantly urban roadways or secondary roadways under township or county control), and approximately **5,700** miles of inventoried roadway which falls neither on the State system nor the Federal Aid system, and which will be referred to as "non-system" roadways. As indicated earlier, the inventory data for these three types of roadways is either based on inventory efforts tied to the requirements of the HPMS system, or on older files in which data were extracted from design drawings or photologs.

Utah staff has the highest confidence in the inventory data which is based on the HPMS effort or the expansion thereof. Thus, all variables on the Federal Aid system (e.g., Interstate, Federal Aid Primary, Federal Aid Secondary and Federal Aid Urban), and all coded variables on the additional State-system routes are felt to be coded very accurately. The inventory data for the remaining **5,700** miles of "non-system" roadway are also felt to be quite good, but not as accurate as the data on the system roads simply because the inventory is not updated as often.

It is noted that as in most state inventory files, the design of the file may lead to some "gaps" in the data in route-oriented analysis. Because the file is section-based, with each section of pavement being represented only once, analyses of roadway types (e.g., all Interstate mileage, all 2-lane mileage) can be conducted accurately, with appropriate accidents being merged to the appropriate sections. However, for analyses involving a specific route, there may be gaps in the data where the route coincides with a second route. Here, the inventory data will only be captured on one of the routes (usually the higher-order route) to

prevent double-counting of mileage. For example, since some sections of Interstate I-15 and I-80 coincide, it has been found that the inventory data (and linked accidents) only appear on I-15 in the file. Thus, the analysts doing a route-based analysis on I-80 will have to determine the milepoints at which the routes coincide (gaps in the I-80 file segments which can be linked to a map), and pick up the appropriate data from the I-15 file. Even larger problems would be expected to occur if route-based analysis are attempted for lower-order routes (e.g., state routes which may coincide with US routes). Again, the HSIS files were primarily designed for non-route-based analyses, and will be accurate in the majority of runs conducted.

### Traffic Data

As noted earlier, traffic data related to AADT and truck percentages are found on the Roadlog file. These data are based on Utah's traffic count program. In this program, there are 85 permanent Automatic Traffic Recorders (ATR's) on Interstate and Utah State roads in Utah which are in operation 365 days/year. Of these, 53 ATR's capture volume and vehicle classification counts and 32 ATR's count volume only. These ATR's conform with FHWA's HPMS guidelines. In addition, there are approximately 10 additional ATR's on roads inside National Parks in Utah that are operated by the National Park Service.

In addition to these permanent counts, Utah collects 48-hour (or more) coverage counts at approximately **1,300** locations per year. Counts on the State-system roadway are done on a 3 to 5 year cycle. Approximately 100 traffic counting machines are utilized to collect traffic data for 7,100 miles of State-system roads in Utah. In terms of coverage, Utah tends to have a better sample coverage of high volume roads compared to lower functional categories. From a purely statistical perspective, a larger sample might be more appropriate for the lower functional classes of roads. However, Utah believes that limited resources for counting should be devoted to the roads that carry a bulk of the traffic. In addition to these coverage counts, approximately **200-300** short-term vehicle classification counts are conducted each year. Finally, to help develop seasonal factors, additional seasonal counts are captured for a week per month or per season.

Short term counts are expanded to AADT estimates using ATR data for roads with similar characteristics, functional class, and volume group. For a year in which no count is made, the previous

year's count for a section is modified by a "growth factor" which is based on changes in counts in the same area or on changes measured by an "assigned" (similar) ATR station. In this manner, volume assignments are made to each section of State system roadway each year. Finally, Utah staff also develops estimates of truck percentages and equivalent single axle loadings (ESAL's) for "on-system" roadways based on the classification counts, weigh-in-motion data, interaction with trucking companies, and staff knowledge of trucking routes. Traffic information is entered into the Traffic file as it is being collected, but is transferred to the computerized system, and thus to the Roadlog File, at the end of the year.

With respect to the accuracy of the traffic information, Utah staff indicated that the data are currently being corrected such that errors would probably not be greater than  $\pm 10$  percent for almost all of the *State-system* sections. (Counts on "non-system" county and municipal roads would be less accurate.)

#### The Horizontal Curvature File

*The Horizontal Curvature file has been discontinued by the State of Utah after 1994. According to the State DOT staff, the data are no longer being updated due other priorities in some districts. In addition, the staff has some questions about the accuracy of the original data input into the file. They are currently in the process of verifying data based on as-built plans. To date, even though the staff has questions about the accuracy, the verification activity has not indicated major problems with the data. However, given their concerns, and the fact that the verification process is not complete, we have chosen to leave the pre-1994 data in the HSIS files, and to await the development of the verified file. The following narrative describes the earlier files. However, we feel that the data in the existing (1994 and earlier) files should be used with some caution.*

The existing horizontal curvature file contains information on horizontal curves in the State of Utah. ***It contains 12,976 records in 1994.*** This file was expanded to the full State-system in 1986 and contains information on curve and tangent sections. (Note that curve-related information does not exist for all Federal-Aid system roads, since some of these roads fall within urban areas not under State DOT control.) The annual files included in the HSIS are for 1987 and 1991-94. It is noted that the sections on this file are

divided only at the beginning and end of curves, and thus the number of sections will not match the sections on the Roadlog File which are defined by changes in many other variables.

Approximately 87 percent of the **5,900** miles on this file are tangent sections. This file includes information on the degree of curve, the direction of curve, and the type of roadway on which the tangent and curve sections fall. When compared to Washington and other similar State files, the percentage of curve by degree appears logical. *As noted earlier, Utah staff does have some questions concerning the accuracy of these data, and is currently in a data verification process.*

#### The Vertical Grade File

*Like the Horizontal Curve File, the Vertical Grade file has been discontinued by the State of Utah after 1994, due to the same updating and data verification issues. (See discussion above.) Again, the data are currently being verified using as-built plans. We have again chosen to leave the 1994 and earlier files in the HSIS system, but again note to the user that the data should be used with caution. The existing file is described in the following narrative.*

The vertical curvature file contains information on the percent grade and the direction of grade (either plus or minus). Like the Horizontal Curve File, data are only available for the State-system roads -- approximately **5900** miles of roadway. Currently, the HSIS system contains six files -- 1987, 1989, and 1991-94.

As with the horizontal curvature file, the sections on this file are defined only by breaks in grade. Of the **5900** miles of roadway on this file, approximately 18 percent are characterized by zero percent grade and approximately six percent are characterized by grades steeper than five percent, which suggests that the distribution of grade is quite logical. *As noted earlier, Utah staff does have some questions concerning the accuracy of these data, and is currently in a data verification process.*

#### Issues Related to Merging Files

Because the individual Utah files are all extracted from one ADABAS database, all are linkable. 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. This variable includes the accident year. 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 be linked 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 number and milepost on the route. The actual linkage variables on the Accident file which are used in the merging operation are A\_ROUTE (route number) and MILEPOST. The linkage variables on the Roadlog File are BEGMP, ENDMP, and RTE\_NBR.

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 A\_ROUTE and MILEPOST on the Accident file and by RTE\_NBR 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 A\_ROUTE and RTE\_NBR from the Accident and Roadlog files and a range match where MILEPOST occurs between BEGMP and ENDMP.

To link the Horizontal Curvature or Grade File with the Accident File, use exactly the same variables as used in linking the Accident and Roadlog Files. Merging the Curve or Grade Files with the Roadlog File is a slightly more complex section-to-section match.

***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.***

## UTAH CONTACTS

State computer files and accident information -- Rick Julio (801-965-4268) -- Mr. Julio is our main contact within the State of Utah when questions arise concerning both the data files in general and specific information related to the accident and roadway variables. He is the Roadway Geometric Engineer in the Utah DOT, and has oversight responsibilities for roadway and accident files.

Traffic Engineering information – Mack Christensen (801-965-4264) is the Traffic and Safety Studies Engineer with the Utah DOT. He can provide additional information on uses of the Utah data in safety studies, particularly as related to traffic engineering studies.

COMPOSITE LIST OF VARIABLES FOR ALL UTAH HGIS FILES

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
A_ROUTE	ACCIDENT ROUTE NUMBER	Accident	CHA(6)	I-25	
A_RTCODE	ROUTE CODE	Accident	CHA(1)	I-25	
AADT	AADT (BOTH DIRECTIONS)	Roadlog	NUM	I-69	II-179
AADTGRP	AADT VOLUME GROUP	Roadlog	CHA(2)	I-69	
ACC_PNTS	NUMBER OF MAJOR ACCESS POINTS	Roadlog	CHA(2)	I-70	
ACCESS	ACCESS CONTROL	Roadlog	CHA(1)	I-70	II-181
ACCTYPE	TYPE OF ACCIDENT (FIRST EVENT)	Accident	CHA(1)	I-25	II-3
ACCYR	ACCIDENT YEAR	Accident	CHA(4)	I-26	
AGE	DRIVER/OCCUPANT AGE	Occupant	NUM	I-61	II-151
AGENCY	INVESTIGATING OFFICER	Accident	CHA(1)	I-26	II-5
ALT_VEH	ALTERED VEHICLE	Vehicle	CHA(1)	I-41	
APP_WD	APPROACH WIDTH	Roadlog	NUM	I-70	
BEGMP	BEGIN MILEPOST	Roadlog	NUM	I-70	
BEGMP	BEGIN MILEPOST	Curve	NUM	I-91	
BEGMP	BEGIN MILEPOST	Grade	NUM	I-95	
CAPACITY	CAPACITY	Grade	NUM	I-95	
CARGO	DESCRIPTION OF CARGO	Vehicle	CHA(1)	I-41	
CARR_ADD	CARRIER ADDRESS	Vehicle	CHA(30)	I-41	
CARR_CTY	CARRIER CITY	Vehicle	CHA(20)	I-42	
CARR_NAM	CARRIER NAME	Vehicle	CHA(54)	I-42	
CARR_STE	CARRIER STATE	Vehicle	CHA(2)	I-42	
CARR_ZIP	CARRIER ZIP CODE	Vehicle	CHA(10)	I-42	
CASENO	ACCIDENT YEAR + CASE NUMBER	Accident	CHA(9)	I-26	
CASENO	ACCIDENT YEAR + CASE NUMBER	Vehicle	CHA(9)	I-42	
CASENO	ACCIDENT YEAR + CASE NUMBER	Occupant	CHA(9)	I-61	
COL_TYPE	COLLISION TYPE BASED ON VEHICLE MOTIONS	Accident	CHA(2)	I-26	II-6
COMM_TRK	COMMERCIAL TRUCK	Vehicle	CHA(1)	I-42	
COMVEH	TRUCK/COMMERCIAL VEHICLE ROUTES	Roadlog	CHA(1)	I-71	II-182
CONTRIB1	FIRST CONTRIBUTING CIRCUMSTANCES	Vehicle	CHA(2)	I-42	II-75
CONTRIB2	SECOND CONTRIBUTING CIRCUMSTANCES	Vehicle	CHA(2)	I-42	II-81
CONTRIB3	THIRD CONTRIBUTING CIRCUMSTANCES	Vehicle	CHA(2)	I-42	
COUNTY	FIPS COUNTY CODE	Roadlog	CHA(3)	I-71	II-183
DAMAGE2	PART DAMAGED #2	Vehicle	CHA(1)	I-44	II-87
DAMAGE3	PART DAMAGED #3	Vehicle	CHA(1)	I-44	
DAMAGE4	PART DAMAGED #4	Vehicle	CHA(1)	I-44	
DAMAGE5	PART DAMAGED #5	Vehicle	CHA(1)	I-44	
DAMAGE6	PART DAMAGED #6	Vehicle	CHA(1)	I-44	
DAMAGE7	PART DAMAGED #7	Vehicle	CHA(1)	I-44	
DAMAGE8	PART DAMAGED #8	Vehicle	CHA(1)	I-44	
DAMAGE9	PART DAMAGED #9	Vehicle	CHA(1)	I-44	
DAYMTH	DAY OF MONTH	Accident	NUM	I-27	

(CON'T)

COMPOSITE LIST OF VARIABLES FOR ALL UTAH HSIS FILES

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
DEG_CURV	DEGREE OF CURVATURE	Curve	NUM	I-91	
DESG_SPD	WEIGHTED DESIGN SPEED	Roadlog	NUM	I-72	
DIR_CURV	DIRECTION OF CURVE	Curve	CHA(1)	I-91	
DIR_FACT	DIRECTIONAL FACTOR	Roadlog	CHA(3)	I-72	
DIR_GRAD	DIRECTION OF GRADE	Grade	CHA(1)	I-95	
DIR_TRVL	DIRECTION OF TRAVEL	Vehicle	CHA(1)	I-44	
DR_BDATE	DRIVER DATE OF BIRTH	Vehicle	CHA(8)	I-44	
DR_EDUC	DRIVER EDUCATION	Vehicle	CHA(1)	I-45	II-89
DR_EJECT	DRIVER EJECTION	Vehicle	CHA(1)	I-45	II-90
DR_INJAR	DRIVER INJURED BODY AREA	Vehicle	CHA(1)	I-45	II-91
DR_INJCS	DRIVER INJURY CAUSE	Vehicle	CHA(1)	I-45	II-93
DRAINAGE	DRAINAGE ADEQUACY	Roadlog	CHA(1)	I-72	
DRV_AGE	DRIVER AGE	Vehicle	NUM	I-46	II-95
DRV_BAC	DRIVER ALCOHOL PERCENT	Vehicle	NUM	I-46	II-98
DRV_INJ	DRIVER INJURY TYPE	Vehicle	CHA(1)	I-46	II-99
DRV_REST	DRIVER SAFETY EQUIPMENT	Vehicle	CHA(1)	I-47	II-100
DRV_SEX	DRIVER SEX	Vehicle	CHA(1)	I-47	II-102
DRV_STAT	DRIVER LICENSE STATE	Vehicle	CHA(2)	I-47	
EJECT	OCCUPANT EJECTION	Occupant	CHA(1)	I-61	II-154
ENDMP	END MILEPOST	Roadlog	NUM	I-72	
ENDMP	END MILEPOST	Curve	NUM	I-91	
ENDMP	END MILEPOST	Grade	NUM	I-95	
EVENT2	FIRST SUBSEQUENT EVENT	Accident	CHA(1)	I-27	II-10
EVENT3	SECOND SUBSEQUENT EVENT	Accident	CHA(1)	I-27	II-12
EVENT4	THIRD SUBSEQUENT EVENT	Accident	CHA(1)	I-27	
FAID_URB	FAID URBAN AREA	Roadlog	CHA(5)	I-72	
FED_AID	FEDERAL-AID SYSTEM	Roadlog	CHA(1)	I-73	II-187
FED_STAS	FEDERAL-AID SYSTEM STATUS	Roadlog	CHA(1)	I-73	
FUNC_CLS	FUNCTIONAL CLASSIFICATION	Roadlog	CHA(2)	I-73	II-188
FUT_ADT	FUTURE ADT	Roadlog	NUM	I-73	
HOR_ACC	HORIZONTAL ALIGNMENT ADEQUACY	Roadlog	CHA(1)	I-74	
HOUR	TIME OF ACCIDENT (HOUR ONLY)	Accident	NUM	I-28	II-14
IMPT_SPD	IMPACT SPEED	Vehicle	NUM	I-48	II-103
INJ	INJURY TYPE	Occupant	CHA(1)	I-62	II-155
INJ_AREA	INJURY BODY AREA	Occupant	CHA(1)	I-62	II-156
INJCAUSE	INJURY CAUSE	Occupant	CHA(1)	I-62	II-158
INSPECT	SAFETY INSPECTION	Vehicle	CHA(1)	I-48	II-106
INT_TYPE	INTERSECTION TYPE	Accident	CHA(1)	I-29	II-18
K_FACTOR	K FACTOR	Roadlog	CHA(2)	I-74	
LANEWID	AVER THROUGH LANE WIDTH	Roadlog	NUM	I-74	II-190
LEVL_CNT	GOVERNMENTAL OWNERSHIP	Roadlog	CHA(2)	I-75	
LICRESTR	DRIVER LICENSE RESTRICTION	Vehicle	CHA(2)	I-48	II-107

LICTYP            DRIVER LICENSE TYPE                    Vehicle      CHA(1)      I-49            II-110

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COMPOSITE LIST OF VARIABLES FOR ALL UTAH HGIS FILES

SAS VARIABLE NAME	DESCRIPTION	FILE	SAS VARIABLE TYPE	FORMAT PAGE NO.	TABLE PAGE NO.
LIGHT	LIGHT CONDITIONS	Accident	CHA(1)	I-29	II-19
LOCALITY	KIND OF LOCALITY	Accident	CHA(1)	I-29	II-20
LOCATN	LOCATION	Accident	CHA(1)	I-29	II-22
MED_TYPE	TYPE OF MEDIAN	Roadlog	CHA(1)	I-75	II-191
MEDWID	PREDOMINANT MEDIAN WIDTH	Roadlog	NUM	I-76	II-192
MILEPOST	ACCIDENT MILEPOST	Accident	NUM	I-30	
MISCACT1	DRIVER INTENT	Vehicle	CHA(2)	I-49	II-111
MONTH	MONTH	Accident	NUM	I-30	II-24
MVMT	MILLION VEHICLE MILES TRAVELED	Roadlog	NUM	I-76	
NBR_INT	NUM. OF GRADE-SEPARATED INTERCHANGES	Roadlog	NUM	I-76	
NHS_IND	NATIONAL HIGHWAY SYSTEM INDICATOR	Roadlog	CHA(1)	I-76	II-193
NO_LANES	TOTAL NUM OF TRAFFIC LANES	Roadlog	NUM	I-76	II-194
NO_OTR	NUM. INTERSECTION, NO CONTROL	Roadlog	NUM	I-77	
NO_SGNL	NUM. SIGNALIZED INTERSECTIONS	Roadlog	NUM	I-77	
NO_SIGN	NUM. INTERSECTION, STOP SIGN	Roadlog	NUM	I-77	
NOCC_BAC	NON-OCCUPANT ALCOHOL PERCENT	Occupant	NUM	I-63	
NOCC_FAT	TOTAL NON-OCCUPANTS KILLED	Accident	NUM	I-30	
NOCC_INJ	TOTAL NON-OCCUPANTS INJURED	Accident	NUM	I-30	
NOCC_TST	NON-OCCUPANT ALCOHOL TEST TYPE	Occupant	CHA(1)	I-63	II-160
NOCCSEV	SUM OF NON-OCCUPANT SEVERITY	Accident	NUM	I-30	
NUM_OCCS	NUMBER OF OCCUPANTS IN ACCIDENT	Vehicle	NUM	I-50	II-113
NUMVEHS	NUMBER OF VEHICLES IN CRASH	Accident	NUM	I-31	II-26
OBJECT1	OBJECT STRUCK	Accident	CHA(1)	I-31	II-28
OBJECT1	OBJECT STRUCK	Vehicle	CHA(1)	I-50	II-115
OCCSEV	SUM OF OCCUPANT SEVERITY CODES	Accident	NUM	I-32	
ONEWAY	ONE-WAY OR TWO-WAY FACILITY	Roadlog	CHA(1)	I-77	II-196
PAV_SEC	PAVEMENT SECTION	Roadlog	CHA(1)	I-77	II-197
PAV_WDL	PAVED LEFT SHOULDER WIDTH	Roadlog	NUM	I-78	II-198
PAV_WIDR	PAVED RIGHT SHOULDER WIDTH	Roadlog	NUM	I-78	II-199
PAVECOND	PRESENT SERVICE RATING	Roadlog	CHA(2)	I-78	II-200
PCT_GRAD	PERCENT OF GRADIENT	Grade	NUM	I-95	
PCT_GREN	PERCENT GREEN TIME	Roadlog	NUM	I-78	
PCT_TRK	OFF-PEAK PERCENT TRUCKS	Roadlog	NUM	I-79	II-201
PCTSIGHT	PERCENT PASSING SIGHT DISTANCE	Roadlog	NUM	I-79	
PEAK_PRK	PEAK PARKING	Roadlog	CHA(1)	I-79	
PEAK_TRK	PEAK PERCENT TRUCKS	Roadlog	NUM	I-80	II-202
PEAKCAPT	PEAK CAPACITY	Roadlog	CHA(5)	I-80	
PEDACT	PEDESTRIAN/BICYCLIST ACTION	Accident	CHA(2)	I-32	II-31

PEDACT	PEDESTRIAN/BICYCLIST ACTION	Occupant	CHA(2)	I-63	II-162
PROPDAM	TOTAL PROPERTY DAMAGE	Accident	CHA(1)	I-33	
RAMP_NO	RAMP NUMBER	Accident	CHA(2)	I-33	

(CON'T)

COMPOSITE LIST OF VARIABLES FOR ALL UTAH HGIS FILES

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
RD_CHAR1	ROAD CHARACTER	Accident	CHA(1)	I-33	II-34
RD_DEF	ROAD DEFECT/CONDITION	Accident	CHA(1)	I-33	II-36
RDSURF	ROAD SURFACE CONDITIONS	Accident	CHA(1)	I-34	II-38
RESIDLOC	RESIDENCE OF DRIVER	Vehicle	CHA(1)	I-51	
REST1	SAFETY EQUIPMENT	Occupant	CHA(1)	I-64	II-166
RODWYCLS	ROADWAY CLASSIFICATION	Accident	CHA(2)	I-34	II-39
RODWYCLS	ROADWAY CLASSIFICATION	Roadlog	CHA(2)	I-80	II-203
ROW	RIGHT OF WAY WIDTH	Roadlog	NUM	I-80	
RSHL_TYP	SHOULDER TYPE (RIGHT SIDE)	Roadlog	CHA(1)	I-81	II-205
RTE_ID	TRAFFIC ROUTE ID	Roadlog	CHA(5)	I-81	
RTE_NBR	UNIQUE ROUTE/BLOC DESIGN	Roadlog	CHA(6)	I-82	
RTE_NBR	UNIQUE ROUTE/BLOC DESIGN	Curve	CHA(6)	I-91	
RTE_NBR	UNIQUE ROUTE/BLOC DESIGN	Grade	CHA(6)	I-95	
RTE_TYPE	ROUTE TYPE	Roadlog	CHA(1)	I-82	II-206
RTTYP_AC	ROUTE TYPE - ACCIDENT	Accident	CHA(1)	I-35	II-41
RURURB	RURAL/URBAN DESIGNATION	Roadlog	CHA(1)	I-82	II-207
SAM_SUB	HPMS SAMPLE SUBDIVISION	Roadlog	CHA(1)	I-83	
SAMP_NB	HPMS SAMPLE NUMBER	Roadlog	CHA(12)	I-83	
SEATPOS	OCCUPANT PLACEMENT	Occupant	CHA(3)	I-65	II-168
SEG_LNG	SECTION LENGTH IN MILES	Roadlog	NUM	I-83	
SEG_LNG	SECTION LENGTH IN MILES	Curve	NUM	I-91	
SEG_LNG	SECTION LENGTH IN MILES	Grade	NUM	I-95	
SEVERITY	SEVERITY	Accident	CHA(1)	I-35	II-42
SEX	DRIVER/OCCUPANT SEX	Occupant	CHA(1)	I-66	II-172
SIGNAL	PREVAILING SIGNAL TYPE	Roadlog	CHA(1)	I-83	II-208
SLAB_THK	STRUCT-NO-OR-SLAB THICKNESS	Roadlog	CHA(2)	I-83	
SOB_TEST	DRIVER ALCOHOL TEST TYPE	Vehicle	CHA(1)	I-52	II-119
SPD_LIMT	POSTED DAYLIGHT SPEED LIMIT	Roadlog	NUM	I-84	II-209
SPDLIMIT	POSTED SPEED LIMIT	Vehicle	NUM	I-52	II-121
SURF_TYP	PAVEMENT TYPE	Roadlog	CHA(2)	I-84	II-211
TAKEBY	INJURED TAKEN BY	Accident	CHA(1)	I-35	II-43
TERRAIN	PREDOMINANT TERRAIN TYPE	Roadlog	CHA(1)	I-85	II-213
TIME	TIME OF ACCIDENT	Accident	CHA(4)	I-35	
TIMEARR	TIME OF ARRIVAL ON SCENE	Accident	CHA(4)	I-35	
TIMECALL	TIME OF CALL	Accident	CHA(5)	I-36	
TIMENOTE	TIME WHEN DISPATCH WAS NOTIFIED	Accident	CHA(4)	I-36	
TOLL	TOLL	Roadlog	CHA(1)	I-85	II-214
TOT_INJ	TOTAL OCCUPANTS INJURED	Accident	NUM	I-36	II-44

TOT_KILL	TOTAL OCCUPANTS KILLED	Accident	NUM	I-36	II-46
TOT_OCC	TOTAL NUMBER OF PEOPLE IN ACCIDENT	Accident	NUM	I-36	II-47
TREATBY	FIRST AID GIVEN BY	Accident	CHA(2)	I-36	II-49
TRF_CNTL	TRAFFIC CONTROL TYPE	Accident	CHA(1)	I-37	II-51

(CON'T)

COMPOSITE LIST OF VARIABLES FOR ALL UTAH HGIS FILES

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
TRVL_SPD	TRAVEL SPEED	Vehicle	NUM	I-53	II-124
TYPE_DEV	TYPE DEVELOPMENT	Roadlog	CHA(1)	I-85	
TYPE_IMP	TYPE IMPROVEMENT	Roadlog	CHA(2)	I-85	II-215
URB_LOC	URBAN LOCATION	Roadlog	CHA(1)	I-86	II-217
USE_FLG	USE FLAG	Roadlog	CHA(1)	I-86	
V_DAMAGE	VEHICLE DAMAGE	Vehicle	CHA(1)	I-53	II-127
VEHNO	VEHICLE NUMBER	Vehicle	NUM	I-53	II-129
VEHNO	VEHICLE NUMBER	Occupant	NUM	I-66	II-173
VEHTYPE	BODY STYLE/VEHICLE TYPE	Vehicle	CHA(2)	I-54	II-133
VEHYR	VEHICLE MODEL YEAR	Vehicle	CHA(4)	I-55	II-140
VER_CODE	VERIFICATION CODE	Accident	CHA(1)	I-37	
VERT_ALN	VERTICAL ALIGNMENT ADEQUACY	Roadlog	CHA(1)	I-87	
VIN	VEH IDENTIFICATION NUMBER	Vehicle	CHA(17)	I-56	
VIOL	VIOLATION CODE	Vehicle	CHA(3)	I-56	II-142
VISION	DRIVER VISION OBSCURED	Vehicle	CHA(2)	I-56	II-145
WD_FEAS	WIDENING FEASIBILITY	Roadlog	CHA(1)	I-87	
WEATHER	WEATHER	Accident	CHA(1)	I-37	II-53
WEEKDAY	DAY OF WEEK	Accident	NUM	I-38	II-55
XSECT	INTERSECTION CODE	Accident	CHA(3)	I-38	
YR	YEAR (4 DIGITS)	Roadlog	CHA(4)	I-87	
YR	YEAR (4 DIGITS)	Curve	CHA(4)	I-92	
YR	YEAR (4 DIGITS)	Grade	CHA(4)	I-96	
YRS_DRV	YEARS DRIVING EXPERIENCE	Vehicle	NUM	I-57	II-147
2 BY 2 TABLE CODE					
RODWYCLS	BY ACCTYPE	Accident			II-56
RODWYCLS	BY LIGHT	Accident			II-62
RODWYCLS	BY SEVERITY	Accident			II-66
RODWYCLS	BY WEATHER	Accident			II-68





LIST OF VARIABLES FOR UTAH ACCIDENT SUBFILE

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
A_ROUTE	ACCIDENT ROUTE NUMBER	Accident	CHA(6)	I-25	
A_RTCODE	ROUTE CODE	Accident	CHA(1)	I-25	
ACCTYPE	TYPE OF ACCIDENT (FIRST EVENT)	Accident	CHA(1)	I-25	II-3
ACCYR	ACCIDENT YEAR	Accident	CHA(4)	I-26	
AGENCY	INVESTIGATING OFFICER	Accident	CHA(1)	I-26	II-5
CASENO	ACCIDENT YEAR + CASE NUMBER	Accident	CHA(9)	I-26	
COL_TYPE	COLLISION TYPE BASED ON VEHICLE MOTIONS	Accident	CHA(2)	I-26	II-6
DAYMTH	DAY OF MONTH	Accident	NUM	I-27	
EVENT2	FIRST SUBSEQUENT EVENT	Accident	CHA(1)	I-27	II-10
EVENT3	SECOND SUBSEQUENT EVENT	Accident	CHA(1)	I-27	II-12
EVENT4	THIRD SUBSEQUENT EVENT	Accident	CHA(1)	I-27	
HOUR	TIME OF ACCIDENT (HOUR ONLY)	Accident	NUM	I-28	II-14
INT_TYPE	INTERSECTION TYPE	Accident	CHA(1)	I-29	II-18
LIGHT	LIGHT CONDITIONS	Accident	CHA(1)	I-29	II-19
LOCALITY	KIND OF LOCALITY	Accident	CHA(1)	I-29	II-20
LOCATN	LOCATION	Accident	CHA(1)	I-29	II-22
MILEPOST	ACCIDENT MILEPOST	Accident	NUM	I-30	
MONTH	MONTH	Accident	NUM	I-30	II-24
NOCC_FAT	TOTAL NON-OCCUPANTS KILLED	Accident	NUM	I-30	
NOCC_INJ	TOTAL NON-OCCUPANTS INJURED	Accident	NUM	I-30	
NOCCSEV	SUM OF NON-OCCUPANT SEVERITY	Accident	NUM	I-30	
NUMVEHS	NUMBER OF VEHICLES IN CRASH	Accident	NUM	I-31	II-26
OBJECT1	OBJECT STRUCK	Accident	CHA(1)	I-31	II-28
OCCSEV	SUM OF OCCUPANT SEVERITY CODES	Accident	NUM	I-32	
PEDACT	PEDESTRIAN/BICYCLIST ACTION	Accident	CHA(2)	I-32	II-31
PROPDAM	TOTAL PROPERTY DAMAGE	Accident	CHA(1)	I-33	
RAMP_NO	RAMP NUMBER	Accident	CHA(2)	I-33	
RD_CHAR1	ROAD CHARACTER	Accident	CHA(1)	I-33	II-34
RD_DEF	ROAD DEFECT/CONDITION	Accident	CHA(1)	I-33	II-36
RDSURF	ROAD SURFACE CONDITIONS	Accident	CHA(1)	I-34	II-38
RODWYCLS	ROADWAY CLASSIFICATION	Accident	CHA(2)	I-34	II-39
RTTYP_AC	ROUTE TYPE - ACCIDENT	Accident	CHA(1)	I-35	II-41
SEVERITY	SEVERITY	Accident	CHA(1)	I-35	II-42
TAKEBY	INJURED TAKEN BY	Accident	CHA(1)	I-35	II-43
TIME	TIME OF ACCIDENT	Accident	CHA(4)	I-35	
TIMEARR	TIME OF ARRIVAL ON SCENE	Accident	CHA(4)	I-35	
TIMECALL	TIME OF CALL	Accident	CHA(5)	I-36	
TIMENOTE	TIME WHEN DISPATCH WAS NOTIFIED	Accident	CHA(4)	I-36	
TOT_INJ	TOTAL OCCUPANTS INJURED	Accident	NUM	I-36	II-44
TOT_KILL	TOTAL OCCUPANTS KILLED	Accident	NUM	I-36	II-46
TOT_OCC	TOTAL NUMBER OF PEOPLE IN ACCIDENT	Accident	NUM	I-36	II-47

(CON'T)

LIST OF VARIABLES FOR UTAH ACCIDENT SUBFILE

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
TREATBY	FIRST AID GIVEN BY	Accident	CHA(2)	I-36	II-49
TRF_CNTL	TRAFFIC CONTROL TYPE	Accident	CHA(1)	I-37	II-51
VER_CODE	VERIFICATION CODE	Accident	CHA(1)	I-37	
WEATHER	WEATHER	Accident	CHA(1)	I-37	II-53
WEEKDAY	DAY OF WEEK	Accident	NUM	I-38	II-55
XSECT	INTERSECTION CODE	Accident	CHA(3)	I-38	
2 BY 2 TABLE CODE					
RODWYCLS	BY ACCTYPE	Accident			II-56
RODWYCLS	BY LIGHT	Accident			II-62
RODWYCLS	BY SEVERITY	Accident			II-66
RODWYCLS	BY WEATHER	Accident			II-68

SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE  
UTAH ACCIDENT SUBFILE

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

**A\_ROUTE      ACCIDENT ROUTE NUMBER**

NON-LABELED VARIABLE -- Used in file linkage.

**A\_RTCODE      ROUTE CODE**

NON-LABELED VARIABLE -- First character of A\_ROUTE. An 'A' designates a State-controlled route.

**ACCTYPE      TYPE OF ACCIDENT (FIRST EVENT)**

'1'	=	'MV--PEDESTRIAN'	Motor vehicle -- Pedestrian
'2'	=	'MV--MV'	Motor vehicle -- Motor vehicle
'3'	=	'MV--TRAIN'	Motor vehicle -- Train
'4'	=	'MV--BICYCLE'	Motor vehicle -- Bicycle
'5'	=	'MV--WILD ANIMAL'	Motor vehicle -- Animal (wild)
'6'	=	'MV--FIXED OBJ'	Motor vehicle -- Fixed object (mountains, snowbank)
'7'	=	'MV--OTR OBJECT'	Motor vehicle -- Other object (boulders, trailers)
'8'	=	'OVERTURN IN ROAD'	Overturned in roadway
'9'	=	'RAN OFF THRU MED'	Ran off roadway -- thru median
'R'	=	'RAN OFF - RIGHT'	Ran off road -- right
'L'	=	'RAN OFF - LEFT'	Ran off road -- left
'A', '0'	=	'OTHER NON-COLL'	Other non-collision
'D'	=	'MV--ANIMAL, DOMES'	Motor vehicle -- animal (domestic)
' '	=	'NOT CODED'	
OTHER	=	'ERROR/OTHER CODE'	

**NOTE:** (1) This variable represents the first event in the crash sequence. For subsequent events see also EVENT2 (first subsequent event), EVENT3 (second subsequent event), and EVENT4 (third subsequent event). It is noted that EVENT3 (second subsequent event) contains little information - 90% - 100% of the data are 'NOT CODED'. For similar reasons, EVENT4 was deleted after 1994.

(2) Coding for this variable changed early in 1986, when the "letter" codes were added. Thus, the 1985/early 1986 data for code '9' (RAN OFF THRU MED) are in error. In 1985 and part of 1986, this code represents the total number of ran-off-road crashes.

**ACCYR ACCIDENT YEAR**

NON-LABELED VARIABLE -- Year of accident - YYYY

**AGENCY INVESTIGATING OFFICER**

'1' = 'UT HWY PATROL' Utah Highway Patrol (insert badge number)  
'2' = 'CITY POLICE' City police  
'3' = 'SHERIFF' Sheriff  
'4' = 'SECURITY FORCE' University, forest, security forces  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**CASENO ACCIDENT YEAR + CASE NUMBER**

NON-LABELED VARIABLE -- FORMAT 'YYYYNNNNN'  
WHERE YYYY=YEAR  
NNNNN=CASENUM

**COL\_TYPE COLLISION TYPE BASED ON VEHICLE MOTIONS**

'01' = 'HEAD ON' Opposite directions, both straight, head on  
'02' = 'OPP, TURN L' Opposite directions, one straight, one turning left  
'03' = 'SAME, REAREND' Same direction, both straight, rear end  
'04' = 'TURN R/REAREND' Same direction, one straight, one turning right, rear end  
'05' = 'TURN L/REAREND' Same direction, one straight, one turning left, rear end  
'06' = 'OPP, SIDESWIPE' Opposite directions, both straight, side-swipe  
'07' = 'SAME, SIDESWIPE' Same direction, both straight, side-swipe  
'08' = 'SAME, TURN R' Same direction, one straight, one right turn  
'09' = 'SAME, TURN L' Same direction, one straight, one left turn  
'10' = 'SAME, 2 TURN L' Same direction, both left turn  
'11' = 'APPROACH ANGLE' Both straight, approaching at angle  
'12' = 'R APPR., TURN R' One straight, one approaching from right, turning right  
'13' = 'L APPR., TURN L' One straight, one approaching from left, turning left

'14' = 'R APPR., TURN L'	One straight, one approaching from right, turning left
(CON'T)	
'15' = 'OPP, BOTH L'	Opposite direction, both turning left
*'16' = 'SAME, TURN R & L'	Same directions, one turning left, one turning right
'17' = 'ANY SINGLE VEH'	Single vehicle
'18' = 'BACKING'	Backing
'19' = 'SAME,BOTH TURN R'	Same direction, both turning right
'20' = 'ANGLE, 2 TURN R'	Approaching at angle, both turning right
'21' = 'ANGLE, 2 TURN L'	Approaching at angle, both turning left
'22' = 'STRAIGHT & UTURN'	One straight, one U-turn
'23' = 'OPP, TURN R & L'	Opposite directions, one turning left, one turning right
'24' = 'L APPR., TURN R'	One straight, one approaching from left, turning right
'25' = 'ANGLE, L AND R'	Approaching at angle, one turning left, one turning right
'26' = 'HIT PARKED VEH'	One moving , one parked
'27' = 'HIT AND RUN'	Vehicle left accident scene
'30' = 'OTHER'	Other
' ' = 'NOT CODED'	
OTHER = 'ERROR/OTHER CODE'	

\*New codes added in 1995.

**NOTE:** It appears that coding for certain categories in this variable changed in 1993 and later years. Categories 04-07 increased while 08-09 decreased.

**DAYMTH**

**DAY OF MONTH**

NON-LABELED VARIABLE - Accident date of the month.

**EVENT2**

**FIRST SUBSEQUENT EVENT**

**EVENT3**

**SECOND SUBSEQUENT EVENT**

**EVENT4**

**THIRD SUBSEQUENT EVENT**

'1' = 'MV--PEDESTRIAN'	Mv -- pedestrian
'2' = 'MV--MV'	Mv -- Mv
'3' = 'MV--TRAIN'	Mv -- train
'4' = 'MV--BICYCLE'	Mv -- bicycle
'5' = 'MV--WILD ANIMAL'	Mv -- Animal (wild)
'6' = 'MV--FIXED OBJ'	Mv -- Fixed object (mountains, snowbank)
'7' = 'MV--OTR OBJECT'	Mv -- Other object (boulders, trailers)

'8' = 'OVERTURN IN ROAD'           Overturned in roadway  
 '9' = 'RAN OFF THRU MED'           Ran off roadway - thru median  
 'R' = 'RAN OFF - RIGHT'           Ran off road - right  
 'L' = 'RAN OFF - LEFT'           Ran off road - left

(CON'T)

'A','O' = 'OTHER NON-COLL'       Other non-collision  
 'D' = 'MV--ANIMAL,DOMES'       Mv -- Animal (domestic)  
 ' ' = 'NOT CODED'  
 OTHER = 'ERROR/OTHER CODE'

**NOTE:** (1) These variables represent the second, third, and fourth events in the crash sequence. For first event, see ACC\_TYP. However, Subsequent EVENT4 is not collected after 1994, and the included data may be erroneous. Do not use as an analysis variable.

(2) Coding for this variable changed in 1986, when the "letter" codes were added. Thus, the 1985 data for code '9' (RAN OFF THRU MED) are in error. In 1985, this code represents the total number of ran-off-road crashes.

**HOUR                   TIME OF ACCIDENT (HOUR ONLY)**

00 = '12 MID - 12:59AM'  
 01 = '1 AM - 1:59 AM'  
 02 = '2 AM - 2:59 AM'  
 03 = '3 AM - 3:59 AM'  
 04 = '4 AM - 4:59 AM'  
 05 = '5 AM - 5:59 AM'  
 06 = '6 AM - 6:59 AM'  
 07 = '7 AM - 7:59 AM'  
 08 = '8 AM - 8:59 AM'  
 09 = '9 AM - 9:59 AM'  
 10 = '10 AM - 10:59 AM'  
 11 = '11 AM - 11:59 AM'  
 12 = '12 NOON-12:59 PM'  
 13 = '1 PM - 1:59 PM'  
 14 = '2 PM - 2:59 PM'  
 15 = '3 PM - 3:59 PM'  
 16 = '4 PM - 4:59 PM'  
 17 = '5 PM - 5:59 PM'  
 18 = '6 PM - 6:59 PM'  
 19 = '7 PM - 7:59 PM'  
 20 = '8 PM - 8:59 PM'  
 21 = '9 PM - 9:59 PM'  
 22 = '10 PM - 10:59 PM'  
 23 = '11 PM - 11:59 PM'  
 24 = 'INVALID VALUE'  
 . = 'NOT CODED'

OTHER = 'ERROR/OTHER CODE'

**NOTE:** The value '24' is an invalid value. According to Utah staff, the small number of cases could possible be combined with data coded as '0'.

<b>INT_TYPE</b>	<b>INTERSECTION TYPE</b>	
'A', 'a'	= '4-LEGGED'	Four legged intersection
'B' - 'E', 'b' - 'e'	= 'TEE'	Tee intersection
'F' - 'I', 'f' - 'i'	= '5-LEGGED'	Five legged intersection
'J' - 'M', 'j' - 'm'	= 'WYE'	Wye intersection
' '	= 'NOT CODED'	
OTHER	= 'ERROR/OTHER CODE'	

**NOTE:** New variable added in 1995.

<b>LIGHT</b>	<b>LIGHT CONDITIONS</b>	
'1'	= 'DAYLIGHT'	Daylight
'2'	= 'DAWN'	Dawn
'3'	= 'DARK, NOT LITED'	Dark - no street lights
'4'	= 'DARK/ ST LIGHTS'	Dark - street lights
'5'	= 'DUSK'	Dusk
' '	= 'NOT CODED'	
OTHER	= 'ERROR/OTHER CODE'	

**NOTE:** Prior to 1988, code 2 was "DAWN OR DUSK". Code 5 added in 1989.

<b>LOCALITY</b>	<b>KIND OF LOCALITY</b>	
'1'	= 'INDUSTRIAL'	Manufacturing/industrial
'2'	= 'SHOP/ BUSINESS'	Shopping/business
'3'	= 'RESIDENTIAL'	Residential
'4'	= 'SCHOOL'	School
'5'	= 'FARMS & FIELDS'	Farms and fields
'6'	= 'OPEN COUNTRY'	Open country
'7'	= 'CHURCH'	Church
'8'	= 'PLAYGROUND'	Playground
'9'	= 'RAILROAD XING'	Railroad crossing

<b>LOCATN</b>	<b>LOCATION</b>	
'1'	= 'ST RD & INT'	State Roads and Interstates
'2'	= 'CITY PARK'	City Park

'3'	= 'RURAL'	Rural
'4'	= 'URBAN'	Urban
'5'	= 'PRIV PROP/PARKNG'	Private Property/Parking Lot
'6'	= 'REST AREA/POE'	Rest Area/Point of Entry
'7'	= 'INDIAN LAND'	Indian Land
'8'	= 'ST & FED PROP'	State and Federal Property
'9'	= 'FOREST LAND'	Forest Land

**NOTE:** New variable added in 1995.

**MILEPOST      ACCIDENT MILEPOST**

NON-LABELED VARIABLE

**MONTH            MONTH**

01 = 'JAN'  
02 = 'FEB'  
03 = 'MAR'  
04 = 'APR'  
05 = 'MAY'  
06 = 'JUN'  
07 = 'JUL'  
08 = 'AUG'  
09 = 'SEPT'  
10 = 'OCT'  
11 = 'NOV'  
12 = 'DEC'  
. = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOCC\_FAT        TOTAL NON-OCCUPANTS KILLED**

0 - 10 = ACTUAL NUMBER  
11 - 20 = '11 - 20'  
21 - 50 = '21 - 50'

**NOCC\_INJ        TOTAL NON-OCCUPANTS INJURED**

0 - 10 = ACTUAL NUMBER  
11 - 20 = '11 - 20'  
21 - 50 = '21 - 50'

**NOCCSEV        SUM OF NON-OCCUPANT SEVERITY**

NON-LABELED VARIABLE



**NOTE:** This variable is computed by adding the individual severity codes (e.g., value of 7 if one non-occ killed (5) and another non-occ class c injury (2)). This variable is not available after 1995.

**NUMVEHS            NUMBER OF VEHICLES IN CRASH**

0 - 4 = ACTUAL NUMBER OF VEHICLES IN CRASH  
 5 - 10 = '5 - 10'  
 11 - 20 = '11 - 20'  
 21 - 50 = '21 - 50'  
 . = 'NOT CODED'  
 OTHER = 'ERROR/OTHER CODE'

**NOTE:** This variable contains certain cases coded as "0" vehicles. These are errors.

**OBJECT1            OBJECT STRUCK**

1986 and Later Codes

'A' = 'GUARDRAIL'	Guardrail
'B' = 'GUARDRAIL END'	Guardrail/end sector
'C' = 'UTILITY POLE'	Utility pole
'D' = 'SIGN POST'	Sign post
'E' = 'DELINEATOR POST'	Delineation post
'F' = 'BRIDGE/CULVERT'	Bridge culvert or other highway structure
'G' = 'CURB'	Curb
'H' = 'SAFETY ISLAND'	Curb or safety island
'I' = 'FENCE'	Fence
'J' = 'CONCRETE BAR'	Rigid barrier (concrete)
'K' = 'CRASH CUSHION'	Crash attenuator
'L' = 'EMBANKMENT'	Dirt embankment/ditch/mountain side
'M' = 'WILD ANIMAL'	Wild animal
'N' = 'DOMES. ANIMAL'	Domestic animal
'O' = 'SNOW BANK'	Snow embankment
'P' = 'MAILBOX'	Mailbox or fire hydrant
'Q' = 'CHANNELIZER'	Traffic channelization device
'R' = 'TREE SCRUB'	Tree/Shrubbery
'S' = 'BUILDING'	Building/other structure (wall)
'T' = 'OTHER OBJECT'	Other object
'U' = 'BAR END TRMT'	End treatment for concrete barrier

Pre-1986 Codes

'0'	=	'*N.S. (PRE-1986)'	
'1'	=	'*GUARDRAIL'	Guardrail
'2'	=	'*UTILITY POLE'	Utility pole
'3'	=	'*SIGN POST'	Sign post
'4'	=	'*DELINEATOR POST'	Delineator post
'5'	=	'*BRIDGE/CULVERT'	Bridge culvert or other highway structure
'6'	=	'*CURB'	Curb
'7'	=	'*SAFETY ISLAND'	Curb or safety island
'8'	=	'*FENCE'	Fence

(CON'T)

'9'	=	'*OTR (TREE,BLDG)'	Other (tree, building)
' '	=	'NOT CODED'	
OTHER	=	'ERROR/OTHER CODE'	

**NOTE:** (1) The coding for this variable changed in 1986. As shown above, the pre-1986 codes were numeric and values will be preceded by an asterisk when they appear in tables. In addition, code 'U' (End treatment for concrete barrier) was added in 1992.

(2) This variable is an Accident File variable through 1994, and then is switched to a Vehicle File variable starting in 1995.

**OCCSEV SUM OF OCCUPANT SEVERITY CODES**

NON-LABELED VARIABLE

**NOTE:** This variable is not available for 1995 and later.

**PEDACT PEDESTRIAN/BICYCLIST ACTION**

'00'	=	'NOT STATED'	Not stated
'01'	=	'CROSSING W/SGNAL'	Crossing at intersection - with signal
'02'	=	'XING AGAINST/SIG'	Crossing at intersection - against signal
'03'	=	'XING/NO SIGNAL'	Crossing at intersection - no signal
'04'	=	'XING/DIAGONALLY'	Crossing at intersection - diagonally
'05'	=	'XING/NON-NTERSCT'	Crossing not at intersection
'06'	=	'WALK W/TRAFFIC'	Walking in roadway - with traffic
'07'	=	'WALK AGAINST/TRF'	Walking in roadway - against traffic
'08'	=	'STAND ON MEDIAN'	Standing on median island in crosswalk
'09'	=	'OTR STAND IN RD'	Other standing in roadway

'10'	=	'GET ON/OFF BUS'	Getting on/off bus
'11'	=	'GET ON/OFF OTHER'	Getting on/off other vehicle
'12'	=	'PUSH/WORK ON VEH'	Pushing/working on vehicle in roadway
'13'	=	'OTR WORK IN RDWY'	Other working in roadway
'14'	=	'PLAY IN ROADWAY'	Playing on roadway
'15'	=	'BEHIND PARKED'	Coming from behind parked cars
'16'	=	'HITCHING ON VEH'	Hitching on vehicle
'17'	=	'LYING IN ROADWAY'	Lying in roadway
'18'	=	'VENDING IN RDWY'	Vending in roadway
'19'	=	'OTHER IN ROADWAY'	Other in roadway
'20'	=	'NO IN ROADWAY'	Not in roadway
*'21'	=	'RDING WITH TRAFF'	Riding in roadway with traffic
*'22'	=	'RDING AGNST TRAF'	Riding in roadway against traffic

(CON'T)

*'23'	=	'WATNG T/FRM SCHL'	Waiting on route to or from school
*'24'	=	'WALKNG ON SDWLK'	Walking on sidewalk
*'25'	=	'RDING ON SDWLK'	Riding on sidewalk
' '	=	'NOT CODED'	
OTHER	=	'ERROR/OTHER CODE'	

\*New codes added in 1994.

**NOTE:** This variable is in the Accident File through 1994, and is converted to an Occupant File variable for 1995 and later.

**PROPDAM      TOTAL PROPERTY DAMAGE**

NON-LABELED VARIABLE - the actual or estimated property damage cost for the entire accident.

**NOTE:** Data are no longer coded since 1989.

**RAMP\_NO      RAMP NUMBER**

NON-LABELED VARIABLE

**NOTE:** Ramp number is coded by Utah for interchanges on Interstate highways from a series of maps of interchange configurations. Map documentation can be obtained if needed, but for analysis purposes, any character in this field will signify that the crash occurred on a ramp. However, Utah officials noted that there could be some inconsistencies in the data.

**RD\_CHAR1      ROAD CHARACTER**

'1'	=	'STRAIGHT/LEVEL'	Straight road -- level
'2'	=	'STRAIGHT/GRADE'	Straight road -- on grade
'3'	=	'STRAIGHT/CREST'	Straight road -- hillcrest
'4'	=	'CURVE/ LEVEL'	Curve -- level
'5'	=	'CURVE ON GRADE'	Curve -- on grade
'6'	=	'CURVE ON CREST'	Curve -- hillcrest
'7'	=	'STRAIGHT/DIP'	Straight -- dip
'8'	=	'CURVE/ DIP'	Curve -- dip

**RD\_DEF      ROAD DEFECT/CONDITION**

'1'	=	'HLES,RTS-SHLDER'	Holes or ruts in shoulder
'2'	=	'HLES,RTS-RDWY'	Holes, ruts, and bumps in roadway
'3'	=	'LOOSE MATERIAL'	Loose material
'4'	=	'DARK/OBSTRUCTION'	Obstruction not lighted (darkness)

(CON'T)

'5'	=	'UNMARK OBSTRUCT.'	Obstruction not marked (daylight)
'6'	=	'UNDER CONSTRUCT'	Road under construction
'7'	=	'ROADWAY REPAIRS'	Roadway repairs
'8'	=	'PREV. ACCIDENT'	Obstruction - Previous accident
'9'	=	'OTHER'	Other - Specify in remarks
OTHER	=	'ERROR/OTHER CODE'	

**NOTE:** All defects increase in 1987. See Discussion.

**RDSURF      ROAD SURFACE CONDITIONS**

'1'	=	'DRY'	Dry
'2'	=	'WET'	Wet
'3'	=	'MUDDY'	Muddy
'4'	=	'SNOWY'	Snowy
'5'	=	'ICY'	Icy
'6'	=	'OILY'	Oily
' '	=	'NOT CODED'	
OTHER	=	'ERROR/OTHER CODE'	

**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-freeways
'99'	= 'OTHERS'	Others

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

**RTTYP\_AC      ROUTE TYPE - ACCIDENT**

'1'	= 'STATE ROADS'	State roads
'3'	= 'RURAL NON-STATE'	Rural -- non-state
'4'	= 'URBAN NON-STATE'	Urban -- non-state
'5'	= 'PRIVATE PROP'	Private property
' '	= 'NOT CODED'	
OTHER	= 'ERROR/OTHER CODE'	

**NOTE:** (1) When an accident occurs on private property (code "5"), no vehicle or occupant information is computerized for cost reasons.

(2) 1985 data for codes '2' and '3' are not consistent with similar data from later years.

(3) Data are no longer coded for 1995 and later years.

**SEVERITY      SEVERITY**

'1'	= 'PROP DAMAGE ONLY'	Property damage only
'2'	= 'C POSSIBLE INJ'	Possible injury
'3'	= 'B NON-INCAP INJ'	Bruises and abrasions
'4'	= 'A INCAPACITATING'	Broken bones or bleeding wounds
'5'	= 'K FATAL'	Fatal

**TAKEBY INJURED TAKEN BY**

'1' = 'PRIV AMBULANCE'            Ambulance, private  
'2' = 'AMBULANCE/FIRE'            Ambulance, fire  
'3' = 'PARAMEDICS'               Paramedics  
'4' = 'PRIVATE VEHICLE'           Private vehicle  
'5' = 'HELICOPTER'                Helicopter  
'6' = 'OTHER'                        Other  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**TIME TIME OF ACCIDENT**

NON-LABELED VARIABLE -- FORMAT HHMM WHERE  
HH=HOURS  
MM=MINUTES

**TIMEARR TIME OF ARRIVAL ON SCENE**

NON-LABELED VARIABLE -- FORMAT HHMM WHERE  
HH=HOURS  
MM=MINUTES

**TIMECALL TIME OF CALL**

NON-LABELED VARIABLE -- HH:MM (i.e., '00:00' to '23:59')

**NOTE:**            New variable added in 1995.

**TIMENOTE TIME WHEN DISPATCH WAS NOTIFIED**

NON-LABELED VARIABLE -- FORMAT HHMM WHERE  
HH=HOURS  
MM=MINUTES

**TOT\_INJ TOTAL OCCUPANTS INJURED**

0 - 10 = ACTUAL NUMBER  
11 - 20 = '11 - 20'  
21 - 50 = '21 - 50'

**TOT\_KILL TOTAL OCCUPANTS KILLED**

0 - 10 = ACTUAL NUMBER  
11 - 20 = '11 - 20'  
21 - 50 = '21 - 50'

**TOT\_OCC TOTAL NUMBER OF PEOPLE IN ACCIDENT**

0 - 10 = ACTUAL NUMBER  
11 - 20 = '11 - 20'  
21 - 90 = '21 - 90'

**NOTE:** More than 10 percent of "0" codes in 1987 data. This could be due to a Utah program error.

**TREATBY FIRST AID GIVEN BY**

'00','0'	= 'UNKNOWN'	Unknown
'01','1'	= 'POLICEMAN'	Policeman
'02','2'	= 'FIREMAN'	Fireman
'03','3'	= 'AMBULANCE PERSON'	Ambulance personnel
'04','4'	= 'PARAMEDICS'	Paramedics
'05','5'	= 'DOCTOR'	Doctor
'06','6'	= 'PRIV INDIVIDUAL'	Private individual
'07','7'	= 'HOSPITAL'	Hospital
'08','8'	= 'HELICOPTER PEOP'	Helicopter personnel
'09','9'	= 'NONE ADMINISTER'	None administer
' '	= 'NOT CODED'	
OTHER	= 'ERROR/OTHER CODE'	

**NOTE:** The 1985 data have leading zeros.

## TRF\_CNTL TRAFFIC CONTROL TYPE

'1' = 'OFFICER'	Officer or watchman
'2' = 'FLAGMAN'	Flagman
'3' = 'TRAFFIC SIGNAL'	Traffic signal
'4' = 'FLASHING SIGNAL'	Traffic signal (flashing)
'5' = 'STOP SIGN'	Stop sign
'6' = 'YIELD SIGN'	Yield sign
'7' = 'RAILRD GATES'	Railroad gates or signal
'8' = 'OTHER'	Other (specify)
'9' = 'NO CONTROL'	No control present
'A' = 'WARNING SIGN'	Slow or warning sign
'B' = 'LANE MARKING'	Traffic lanes marked
'C' = 'NO PASSING LANES'	No passing lanes
'D' = 'ONE-WAY STREET'	One-way road or street
'E' = 'CONSTRUCT AREA'	Construction or work area
' ' = 'NOT CODED'	
OTHER = 'ERROR/OTHER CODE'	

**NOTE:** Letter codes added in 1986; thus 1985 data are not consistent with later years.

## VER\_CODE VERIFICATION CODE

NON-LABELED VARIABLE

**NOTE:** This internal coding variable is used to depict whether or not the coded data have undergone all verification checks by Utah staff. A blank signifies that the data have been verified.

## WEATHER WEATHER

'1' = 'CLEAR'	Clear (or Clear/Cloudy pre-1989)
'2' = 'RAINING'	Raining
'3' = 'SNOWING'	Snowing
'4' = 'FOG'	Fog
'5' = 'DUST'	Dust
'6' = 'MIST'	Mist
'7' = 'SLEETING'	Sleeting
'8' = 'CLOUDY'	Cloudy



'9' = 'WINDSTORM'                      Windstorm  
 '' = 'NOT CODED'  
 OTHER = 'ERROR/OTHER CODE'

**NOTE:** Codes 8 and 9 new in 1992.

**WEEKDAY    DAY OF WEEK**

1 = 'MON'                                  Monday  
 2 = 'TUES'                                Tuesday  
 3 = 'WED'                                Wednesday  
 4 = 'THUR'                                Thursday  
 5 = 'FRI'                                 Friday  
 6 = 'SAT'                                 Saturday  
 7 = 'SUN'                                 Sunday  
 0 = 'N.S.'                                Not specified

**XSECT            INTERSECTION CODE**

'A00' = 'A/4-WAY NTERSECT'        4-way intersection  
 'B00' = 'B/T TO THE WEST'    T to the west  
 'C00' = 'C/T TO THE EAST'    T to the east  
 'D00' = 'D/T TO THE SOUTH'        T to the south  
 'E00' = 'E/T TO THE NORTH'        T to the north  
 'F00' = 'F/5-WAY, LG TO NW'       5-way, leg to northwest  
 'G00' = 'G/5-WAY, LG TO NE'       5-way, leg to northeast  
 'H00' = 'H/5-WAY, LG TO SW'       5-way, leg to southwest  
 'I00' = 'I/5-WAY, LG TO SE'       5-way, leg to southeast  
 'J00' = 'J/Y TO THE SOUTH'        Y to the south  
 'K00' = 'K/Y TO THE NORTH'        Y to the north  
 'L00' = 'L/Y TO THE WEST'        Y to the west  
 'M00' = 'M/Y TO THE EAST'        Y to the east  
 'Z00' = 'Z/OTHER INTER'            Other intersection

**NOTE:** The above coding is based on the intersection sketch provided by the officer. The orientations are relative to North. Thus, B00 is a T-intersection with the base of the "T" toward the west (left). The data are not available after 1995.

LIST OF VARIABLES FOR UTAH VEHICLE SUBFILE

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
ALT_VEH	ALTERED VEHICLE	Vehicle	CHA(1)	I-41	
CARGO	DESCRIPTION OF CARGO	Vehicle	CHA(1)	I-41	
CARR_ADD	CARRIER ADDRESS	Vehicle	CHA(30)	I-41	
CARR_CTY	CARRIER CITY	Vehicle	CHA(20)	I-42	
CARR_NAM	CARRIER NAME	Vehicle	CHA(54)	I-42	
CARR_STE	CARRIER STATE	Vehicle	CHA(2)	I-42	
CARR_ZIP	CARRIER ZIP CODE	Vehicle	CHA(10)	I-42	
CASENO	ACCIDENT YEAR + CASE NUMBER	Vehicle	CHA(9)	I-42	
COMM_TRK	COMMERCIAL TRUCK	Vehicle	CHA(1)	I-42	
CONTRIB1	FIRST CONTRIBUTING CIRCUMSTANCES	Vehicle	CHA(2)	I-42	II-75
CONTRIB2	SECOND CONTRIBUTING CIRCUMSTANCES	Vehicle	CHA(2)	I-42	II-81
CONTRIB3	THIRD CONTRIBUTING CIRCUMSTANCES	Vehicle	CHA(2)	I-42	
DAMAGE2	PART DAMAGED #2	Vehicle	CHA(1)	I-44	II-87
DAMAGE3	PART DAMAGED #3	Vehicle	CHA(1)	I-44	
DAMAGE4	PART DAMAGED #4	Vehicle	CHA(1)	I-44	
DAMAGE5	PART DAMAGED #5	Vehicle	CHA(1)	I-44	
DAMAGE6	PART DAMAGED #6	Vehicle	CHA(1)	I-44	
DAMAGE7	PART DAMAGED #7	Vehicle	CHA(1)	I-44	
DAMAGE8	PART DAMAGED #8	Vehicle	CHA(1)	I-44	
DAMAGE9	PART DAMAGED #9	Vehicle	CHA(1)	I-44	
DIR_TRVL	DIRECTION OF TRAVEL	Vehicle	CHA(1)	I-44	
DR_BDATE	DRIVER DATE OF BIRTH	Vehicle	CHA(8)	I-44	
DR_EDUC	DRIVER EDUCATION	Vehicle	CHA(1)	I-45	II-89
DR_EJECT	DRIVER EJECTION	Vehicle	CHA(1)	I-45	II-90
DR_INJAR	DRIVER INJURED BODY AREA	Vehicle	CHA(1)	I-45	II-91
DR_INJCS	DRIVER INJURY CAUSE	Vehicle	CHA(1)	I-45	II-93
DRV_AGE	DRIVER AGE	Vehicle	NUM	I-46	II-95
DRV_BAC	DRIVER ALCOHOL PERCENT	Vehicle	NUM	I-46	II-98
DRV_INJ	DRIVER INJURY TYPE	Vehicle	CHA(1)	I-46	II-99
DRV_REST	DRIVER SAFETY EQUIPMENT	Vehicle	CHA(1)	I-47	II-100
DRV_SEX	DRIVER SEX	Vehicle	CHA(1)	I-47	II-102
DRV_STAT	DRIVER LICENSE STATE	Vehicle	CHA(2)	I-47	
IMPT_SPD	IMPACT SPEED	Vehicle	NUM	I-48	II-103
INSPECT	SAFETY INSPECTION	Vehicle	CHA(1)	I-48	II-106
LICRESTR	DRIVER LICENSE RESTRICTION	Vehicle	CHA(2)	I-48	II-107
LICTYP	DRIVER LICENSE TYPE	Vehicle	CHA(1)	I-49	II-110
MISACT1	DRIVER INTENT	Vehicle	CHA(2)	I-49	II-111
NUM_OCCS	NUMBER OF OCCUPANTS IN ACCIDENT	Vehicle	NUM	I-50	II-113
OBJECT1	OBJECT STRUCK	Vehicle	CHA(1)	I-50	II-115
RESIDLOC	RESIDENCE OF DRIVER	Vehicle	CHA(1)	I-51	
SOB_TEST	DRIVER ALCOHOL TEST TYPE	Vehicle	CHA(1)	I-52	II-119
SPDLIMIT	POSTED SPEED LIMIT	Vehicle	NUM	I-52	II-121

(CON'T)

LIST OF VARIABLES FOR UTAH VEHICLE SUBFILE

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
TRVL_SPD	TRAVEL SPEED	Vehicle	NUM	I-53	II-124
V_DAMAGE	VEHICLE DAMAGE	Vehicle	CHA(1)	I-53	II-127
VEHNO	VEHICLE NUMBER	Vehicle	NUM	I-53	II-129
VEHTYPE	BODY STYLE/VEHICLE TYPE	Vehicle	CHA(2)	I-54	II-133
VEHYR	VEHICLE MODEL YEAR	Vehicle	CHA(4)	I-55	II-140
VIN	VEH IDENTIFICATION NUMBER	Vehicle	CHA(17)	I-56	
VIOL	VIOLATION CODE	Vehicle	CHA(3)	I-56	II-142
VISION	DRIVER VISION OBSCURED	Vehicle	CHA(2)	I-56	II-145
YRS_DRV	YEARS DRIVING EXPERIENCE	Vehicle	NUM	I-57	II-147

SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE  
UTAH VEHICLE SUBFILE

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

(2) For consistency with other State's files and ease of handling, driver-related variables have been included in this Vehicle Subfile as well as in the Occupant Subfile.

**ALT\_VEH**

**ALTERED VEHICLE**

'1'	=	'SUSPENSION'	Suspension altered
'2'	=	'BODY'	Body altered
'3'	=	'TINTED WINDOWS'	Tinted windows
'4'	=	'OTHER'	Other alteration
'5'	=	'NONE'	
'U'	=	'UNKNOWN'	
' '	=	'NOT CODED'	
OTHER = 'ERROR/OTHER CODE'			

**NOTE:** New variable added in 1995.

**CARGO**

**DESCRIPTION OF CARGO**

'A'	=	'GENERAL FREIGHT'	General freight
'B'	=	'HOUSEHOLD GOODS'	Household goods
'C'	=	'HEAVY MACHINERY'	Heavy machinery
'D'	=	'MOTOR VEHICLES'	Motor vehicles
'E'	=	'GASES IN BULK'	Gases in bulk
'F'	=	'LIVESTOCK'	Livestock
'G'	=	'SOLIDS IN BULK'	Solids in bulk
'H'	=	'LIQUIDS IN BULK'	Liquids in bulk
'I'	=	'EXPL/HAZRDS MTRL'	Explosives/hazardous materials
'J'	=	'REFRIG FOODS'	Refrigerated foods
'K'	=	'EMPTY'	Empty
'L'	=	'OTHER'	Other
'U'	=	'UNKNOWN'	Unknown
'X'	=	'N/A'	Does not apply
' '	=	'NOT CODED'	
OTHER = 'ERROR/OTHER CODE'			

**CARR\_ADD**

**CARRIER ADDRESS**

NON-LABELED VARIABLE - Description of carrier address or P.O.BOX.

**CARR\_CTY      CARRIER CITY**

NON-LABELED VARIABLE - City name

**CARR\_NAM      CARRIER NAME**

NON-LABELED VARIABLE - Carrier name (company name or mailbox address)

**CARR\_STE      CARRIER STATE**

NON-LABELED VARIABLE - Two-letter postal abbreviation code, i.e,  
UT(Utah).

**CARR\_ZIP      CARRIER ZIP CODE**

NON-LABELED VARIABLE - Zip code, up to ten characters.

**CASENO      ACCIDENT YEAR + CASE NUMBER**

NON-LABELED VARIABLE - FORMAT 'YYYYNNNNN'  
WHERE YYYY=YEAR  
NNNNN=CASE NUMBER

**COMM\_TRK      COMMERCIAL TRUCK**

NON-LABELED VARIABLE

**NOTE:** This variable was used in earlier years to designate "interstate" (1) or "intrastate" (2) shippers. However, the data are not collected.

**CONTRIB1      FIRST CONTRIBUTING CIRCUMSTANCES**  
**CONTRIB2      SECOND CONTRIBUTING CIRCUMSTANCES**  
**CONTRIB3      THIRD CONTRIBUTING CIRCUMSTANCES**

'00'	= 'NONE'	Did not contribute
'01'	= 'SPEEDING'	Speed too fast
'02'	= 'FAIL TO YIELD'	Failed to yield right of way
'03'	= 'LEFT OF CENTER'	Drove left of center
'04'	= 'IMPROP OVERTAKE'	Improper overtaking
'05'	= 'RAN STOP SIGN'	Passed stop sign
'06'	= 'RAN TRAF SIGNAL'	Disregard traffic signal
'07'	= 'TOO CLOSE'	Followed too closely

'08' = 'IMPROPER TURN'            Made improper turn

(CON'T)

'09' = 'ALCOHOL'	Had been drinking
'10' = 'DUI - DRUGS'	Under the influence of drugs
'11' = 'POOR EYESIGHT'	Eyesight defective uncorrected
'12' = 'ASLEEP'	Asleep
'13' = 'FATIGUED'	Fatigued
'14' = 'ILL'	Ill
'15' = 'IMPROPER PARK'	Improper parking
'16' = 'IMPROPER LOOK'	Improper lookout
'17' = 'FAIL TO SIGNAL'	Failed to signal
'18' = 'OTHER IMPROPER'	Other improper driving
'19' = 'DEFECT BRAKES'	Brakes defective
'20' = 'HEADLIGHT OUT'	Headlight insufficient or out
'21' = 'HEADLIGHT GLARE'	Headlights glaring
'22' = 'LIGHT DEFECT'	Other lights or reflectors defective
'23' = 'STEER DEFECT'	Steering mechanism defective
'24' = 'TIRE DEFECT'	Tires defective
'25' = 'WINDSHIELD CLOUD'	Windshield not clear
'26' = 'OTR VEH DEFECT'	Other defective condition of vehicle
'27' = 'HIT AND RUN'	Hit and run
'28' = 'DUI-ALCOHOL'	Driving under influence - alcohol
'29' = 'NON-COLL FIRE'	Non-collision (fire)
'30' = 'COLL + FIRE'	Collision (fire)
'40' = 'STOLEN'	Stolen
'41' = 'PHANTOM VEH'	Non-contact vehicle involved
'42' = 'TRK JACKNIFE'	Truck tractor and trailer jackknifed
'43' = 'TRK RUNAWAY'	Truck Downhill "runaway"
'44' = 'TRK CARGO LOSS'	Truck lost cargo
'45' = 'TRK FIRE'	Truck fire
'46' = 'TRK UNITS SEPRTD'	Truck units separated
'47' = 'WRNG SIDE OF RD'	Wrong side of road
'48' = 'WRNG WY 1-WAY ST'	Wrong way on one way street
'49' = 'IMPROPER BACKING'	Improper backing
'50' = 'IMMERSION'	Immersion
'51' = 'TOWED VEH'	Towed vehicle
'52' = 'VEH ROLLNG IN LN'	Vehicle rolling in traffic lane
' ' = 'NOT CODED'	
OTHER = 'ERROR/OTHER CODE'	

**NOTE:** The proportions of 'not stated' and 'NONE' vary inconsistently from year to year. Officers may be failing to enter the 'none' code when no factor is present. Codes '42'-'45' are added in 1992. Codes '47'-'52' are added in 1995. CONTRIB3 was not collected after 1989.

DAMAGE2 PART DAMAGED #2  
DAMAGE3 PART DAMAGED #3  
DAMAGE4 PART DAMAGED #4  
DAMAGE5 PART DAMAGED #5  
DAMAGE6 PART DAMAGED #6  
DAMAGE7 PART DAMAGED #7  
DAMAGE8 PART DAMAGED #8  
DAMAGE9 PART DAMAGED #9

'0' = 'NO DAMAGE/TOTLED' No damage or total damage  
'1' = 'LEFT FRONT'  
'2' = 'MID FRONT'  
'3' = 'RIGHT FRONT'  
'4' = 'LEFT SIDE'  
'5' = 'MIDDLE'  
'6' = 'RIGHT SIDE'  
'7' = 'LEFT BACK'  
'8' = 'MIDDLE BACK'  
'9' = 'RIGHT BACK'  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** See V\_DAMAGE for initial damage. Note that '0' can mean either that the vehicle was undamaged or totaled, so use with caution. DAMAGE7-DAMAGE9 were added in 1995.

**DIR\_TRVL** DIRECTION OF TRAVEL

'1','n','N' = 'NORTH'  
'2','s','S' = 'SOUTH'  
'3','e','E' = 'EAST'  
'4','w','W' = 'WEST'  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**DR\_BDATE** DRIVER DATE OF BIRTH

NON-LABELED VARIABLE - The actual date of birth taken from the driver license or other identification received in the investigation.

**DR\_EDUC DRIVER EDUCATION**

'1' = 'PUBLIC' Public  
'2' = 'COMMERCIAL' Commercial  
'3' = 'NONE' None  
'4' = 'UNKNOWN' Unknown  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** More than 5% is uncoded. It appears that officers may not be entering the 'unknown' code.

**DR\_EJECT DRIVER EJECTION**

'1' = 'NOT EJECTED' Not ejected  
'2' = 'PARTIALLY EJECT' Partially ejected  
'3' = 'FULLY EJECT' Fully ejected  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**DR\_INJAR DRIVER INJURED BODY AREA**

'1' = 'HEAD'  
'2' = 'FACE'  
'3' = 'NECK'  
'4' = 'CHEST'  
'5' = 'BACK'  
'6' = 'LEG(S)'  
'7' = 'ARM(S)'  
'8' = 'TORSO'  
'9' = 'UNKNOWN'  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** Variable uncoded or 'UNKNOWN' in approximate 80% of cases. However, a large proportion of this is due to the lack of a 'NO INJURY' code within this variable.

**DR\_INJCS DRIVER INJURY CAUSE**

'1' = 'STEERING WHEEL' Steering wheel  
'2' = 'WINDSHIELD/DASH' Dashboard/windshield  
'3' = 'ROOF' Roof  
'4' = 'OTHER INTERIOR' Other interior  
'5' = 'MCYC HANDBARS' Motorcycle handbars  
'6' = 'MCYC GAS TANK' Motorcycle gas tank



'7' = 'EXT VEH PART' Exterior vehicle part

(CON'T)

'8' = 'EXTERNAL OBJ' External object

'9' = 'UNKNOWN' Unknown

' ' = 'NOT CODED'

OTHER = 'ERROR/OTHER CODE'

**NOTE:** Variable uncoded or 'UNKNOWN' in approximate 80% of cases. However, a large proportion of this is due to the lack of a 'NO INJURY' code within this variable.

**DRV\_AGE DRIVER AGE**

00 = 'UNKNOWN'  
01 = '1 YEAR'  
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'  
66-99 = '>= 66 YRS'

**DRV\_BAC DRIVER ALCOHOL PERCENT**

000 = '000'  
001-007 = '0.01 - 0.07'  
008-009 = '0.08 - 0.09'  
010-015 = '0.10 - 0.15'  
016-020 = '0.16 - 0.20'  
021-030 = '0.21 - 0.30'  
031-999 = ' >= 0.31'

**NOTE:** The total proportion of positive BAC's and the portion of '>= 0.31' BAC's are both suspect.

**DRV\_INJ DRIVER INJURY TYPE**

'1' = 'NO INJURY'                   No injury  
'2' = 'POSSIBLE INJURY'           Possible injury

(CON'T)

'3' = 'BRUISE/ABRASION'           Bruises and abrasions  
'4' = 'BLEEDING/BROKEN'           Broken bones/bleeding wounds  
'5' = 'FATAL'                      Fatal  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**DRV\_REST           DRIVER SAFETY EQUIPMENT**

'1' = 'LAP BELT USED'              Lap belt used  
'2' = 'LAP&SHLD USED'             Lap and shoulder belt used  
'3' = 'BELTS NOT USED'             Belts not used  
'4' = 'NO BELTS INSTALL'          No belts installed  
'5' = 'CHILD RESTRAINT'          Child restraint used  
\* '6' = 'AIR BAG W BELT'          Air bag deployed with belt  
\* '7' = 'AIR BAG WO BELT'         Air bag deployed with no belt  
'8' = 'HELMET WORN'               Helmet worn  
'9' = 'EYE PROTECT USED'         Eye protection used  
'0' = 'HELMET+EYE USED'          Helmet worn and eye protection used  
'A' = 'SHOULDR BLT ONLY'         Shoulder belt only used  
'B' = 'OTHER'                      Other  
'C' = 'UNKNOWN'                   Unknown  
'G' = 'AIR BAG DPLO<'94'         Air bag deployed (pre-1994)  
' ' = 'NOT CODED'                 Not coded  
OTHER = 'ERROR/OTHER CODE'

\*New codes added in 1994.

**NOTE:** The proportion of belts used appears to be higher than expected, particularly in 1987. As in other States, this could be the effect of occupants providing incorrect information due to the mandatory belt law.

**DRV\_SEX           DRIVER SEX**

'U', '0' = 'UNKNOWN'  
'M', '1' = 'MALE'  
'F', '2' = 'FEMALE'  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** Conflicting raw file documentation. Above coding is correct according to Utah.

**DRV\_STAT      DRIVER LICENSE STATE**

NON-LABELED VARIABLE - State name (e.g.,UT = Utah)- Use with caution.

**IMPT\_SPD      IMPACT SPEED**

00 = 'NOT MOVING'  
01-05 = '1 - 5 MPH'  
06-10 = '6 - 10 MPH'  
11-15 = '11 - 15 MPH'  
16-20 = '16 - 20 MPH'  
31-35 = '31 - 35 MPH'  
21-25 = '21 - 25 MPH'  
26-30 = '26 - 30 MPH'  
36-40 = '36 - 40 MPH'  
41-45 = '41 - 45 MPH'  
46-50 = '46 - 50 MPH'  
51-55 = '51 - 55 MPH'  
56-60 = '56 - 60 MPH'  
61-65 = '61 - 65 MPH'  
66-70 = '66 - 70 MPH'  
71-75 = '71 - 75 MPH'  
76-80 = '76 - 80 MPH'  
81-85 = '81 - 85 MPH'  
86-90 = '86 - 90 MPH'  
91-95 = '91 - 95 MPH'  
96-99 = '>= 96 MPH'

**NOTE:** Approximately 50% of the cases are coded as "00" = "NOT MOVING". This could be a valid code for parked or stopped vehicles. However, it is also the default code for uncoded cases. Use with caution.

**INSPECT      SAFETY INSPECTION**

'1' = 'INSPECTED'  
'2' = 'NO INSPECTION'  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** Uncoded data has increased to 99% in 1987. Do not use as analysis variable. The variable is deleted in 1995.

**LICRESTR      DRIVER LICENSE RESTRICTION**

'A', '00'	= 'NO RESTRICTIONS'	No restrictions (see Note)
'B', '01', '1'	= 'CORRECTIVE LENS'	Corrective lenses
'02'	= 'LEFT MIRROR'	Left or outside rear view mirror (See '11' also)
'03'	= 'DAYLIGHT DRIVING'	Daylight driving
'04'	= 'NOT TO EXCEED'	Not to exceed 40 m.p.h.
'05'	= 'AUTO TRANS'	Automatic transmission

(CON'T)

'06'	= 'CUSHIONS'	Cushions or mechanical or prosthetic aid
'07'	= 'HAND CONTROLS'	Hand controls
'08'	= 'POWER STEERING'	Power steering
'09'	= 'POWER BRAKES'	Power brakes
'10'	= 'SIGNAL LIGHTS'	Signal lights
'11'	= 'OUTSIDE MIRRORS'	Outside rear view mirrors (see '02' also)
'12'	= 'LIM HRS/NO AIRBR'	Limited hours or vehicle without air brakes
'13'	= 'MISC RESTRICT'	Misc. restrictions (i.e. contact in one eye only, employment, CDL Interstate only, etc.)
'14'	= 'MEDICAL'	All yearly or periodical medical renewals
'15'	= '90-CC CYCLE'	90-cc motorcycle
'16'	= '3-WHEEL CYCLE'	3-wheel cycle or 90-cc Motorcycle (see '15' also)
'17'	= 'LESS 10,000 LBS'	10,000 lbs or less
'18'	= 'NO HAZARD MAT'	No hazardous materials
' '	= 'NOT CODED'	
OTHER	= 'ERROR/OTHER CODE'	

**NOTE:** The proportions of 'NO RESTRICTIONS' and 'NOT CODED' data vary dramatically across years. It appears that both mean "no restrictions." In addition, the codes for certain categories were changed and/or combined sometime between 1990 and 1992. While we have attempted to accurately format the data, be aware that some of the coding in those years is suspect.

**LICTYP**

**DRIVER LICENSE TYPE**

'1'	= 'REGULAR'
'2'	= 'CHAUFFEUR'
'3'	= 'MOTORCYCLE'
'4'	= 'RESTRICTED'
' '	= 'NOT CODED'
OTHER	= 'ERROR/OTHER CODE'

**NOTE:** Over 5% of the cases are uncoded in 1986 and 1987.

**MISCACT1 DRIVER INTENT**

'01' = 'GO STRAIGHT'            Go straight ahead  
'02' = 'OVERTAKE'            Overtake  
'03' = 'MAKE R TURN'        Make right turn  
'04' = 'MAKE L TURN'        Make left turn  
'05' = 'MAKE U TURN'        Make U turn

(CON'T)

'06' = 'SLOW OR STOP'        Slow or stop  
'07' = 'START IN LANE'       Start in traffic lane  
'08' = 'START FROM PARK'    Start from parked position  
'09' = 'BACKING'            Back  
'10' = 'STOPPED IN LANE'    Remain stopped in traffic lane  
'11' = 'REMAIN PARKED'      Remain parked  
'12' = 'CHANGING LANES'    Changing lanes  
\*'13' = 'MERGE OFF/ON RD'    Merge off or onto roadway. Vehicle exiting/entering roadway at a ramp)  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

\*New code added in 1995.

**NOTE:** Data for Code '13' is added in 1995.

**NUM\_OCCS NUMBER OF OCCUPANTS IN ACCIDENT**

0 - 10 = ACTUAL NUMBER  
11 - 20 = '11 - 20'  
21 - 99 = ' >= 21'  
. = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** 1985 data shows only 1 occupant in over 99% of vehicles. This may be due to a Utah program error.

**OBJECT1 OBJECT STRUCK**

1986 and Later Codes

'A' = 'GUARDRAIL'            Guardrail  
'B' = 'GUARDRAIL END'       Guardrail/end sector  
'C' = 'UTILITY POLE'        Utility pole  
'D' = 'SIGN POST'           Sign post  
'E' = 'DELINEATOR POST'    Delineation post  
'F' = 'BRIDGE/CULVERT'      Bridge culvert or other highway structure

'G'	= 'CURB'	Curb
'H'	= 'SAFETY ISLAND'	Curb or safety island
'I'	= 'FENCE'	Fence
'J'	= 'CONCRETE BAR'	Rigid barrier (concrete)
'K'	= 'CRASH CUSHION'	Crash attenuator
'L'	= 'EMBANKMENT'	Dirt embankment/ditch/mountainside
'M'	= 'WILD ANIMAL'	Wild animal
'N'	= 'DOMES. ANIMAL'	Domestic animal
'O'	= 'SNOW BANK'	Snow embankment
'P'	= 'MAILBOX'	Mailbox
'Q'	= 'CHANNELIZER'	Traffic channelization device

(CON'T)

'R'	= 'TREE SCRUB'	Tree/Shrubbery
'S'	= 'BUILDING'	Building/other structure (wall)
'T'	= 'OTHER OBJECT'	Other object
'U'	= 'BAR END TRMT'	End treatment for concrete barrier

Pre-1986 Codes

'0'	= '*N.S. (PRE-1986)'	
'1'	= '*GUARDRAIL'	Guardrail
'2'	= '*UTILITY POLE'	Utility pole
'3'	= '*SIGN POST'	Sign post
'4'	= '*DELINEATOR POST'	Delineator post
'5'	= '*BRIDGE/CULVERT'	Bridge culvert or other highway structure
'6'	= '*CURB'	Curb
'7'	= '*SAFETY ISLAND'	Curb or safety island
'8'	= '*FENCE'	Fence
'9'	= '*OTR (TREE,BLDG)'	Other (tree, building)
' '	= 'NOT CODED'	
OTHER	= 'ERROR/OTHER CODE'	

**NOTE:** (1) The coding for this variable changed in 1986. As shown above, the pre-1986 codes were numeric and values will be preceded by an asterisk when they appear in tables. In addition, code 'U' (End treatment for concrete barrier) was added in 1992.

(2) This variable is an Accident File variable through 1994, and then is switched to a Vehicle File variable starting in 1995.

**RESIDLOC RESIDENCE OF DRIVER**

'1'	= 'WITHIN 25 MILES'
'2'	= 'OVER 25 MILES'
'3'	= 'OUT-OF-STATE'
' '	= 'NOT CODED'
OTHER	= 'ERROR/OTHER CODE'

**NOTE:** While still carried in the raw file, and thus converted to SAS, this variable was only available for 1985-87.

**SOB\_TEST      DRIVER ALCOHOL TEST TYPE**

'1' = 'NOTEST'	No test
'2' = 'BLOOD TEST'	Blood
'3' = 'BREATH TEST'	Breath
'4' = 'OTHER TEST'	Other
'5' = 'UNKNOWN TEST'	Unknown
'6' = 'REFUSED TEST'	Refused
'7' = 'POST MORTEM'	Post mortem
*'8' = 'DRUG SCAN'	Drug scan

\*New code added in 1994.

**NOTE:** Data for Code '8' are added in 1994.

**SPDLIMIT      POSTED SPEED LIMIT**

00 = 'NOT CODED'
01-05 = '1 - 5 MPH'
06-10 = '6 - 10 MPH'
11-15 = '11 - 15 MPH'
16-20 = '16 - 20 MPH'
21-25 = '21 - 25 MPH'
26-30 = '26 - 30 MPH'
31-35 = '31 - 35 MPH'
36-40 = '36 - 40 MPH'
41-45 = '41 - 45 MPH'
46-50 = '46 - 50 MPH'
51-55 = '51 - 55 MPH'
56-60 = '56 - 60 MPH'
61-65 = '61 - 65 MPH'
66-70 = '66 - 70 MPH'
71-75 = '71 - 75 MPH'
76-80 = '76 - 80 MPH'

81-85 = '81 - 85 MPH'  
86-90 = '86 - 90 MPH'  
91-95 = '91 - 95 MPH'  
96-99 = ' >= 96 MPH'

**NOTE:** Two digits representing posted speed limit. More than 30% of the cases have values of zero, which means the data were not coded.

**TRVL\_SPD      TRAVEL SPEED**

00 = 'NOT MOVING'  
01-05 = '1 - 5 MPH'  
06-10 = '6 - 10 MPH'  
11-15 = '11 - 15 MPH'  
16-20 = '16 - 20 MPH'  
21-25 = '21 - 25 MPH'  
26-30 = '26 - 30 MPH'  
31-35 = '31 - 35 MPH'  
36-40 = '36 - 40 MPH'  
41-45 = '41 - 45 MPH'  
46-50 = '46 - 50 MPH'  
51-55 = '51 - 55 MPH'  
56-60 = '56 - 60 MPH'  
61-65 = '61 - 65 MPH'  
66-70 = '66 - 70 MPH'  
71-75 = '71 - 75 MPH'  
76-80 = '76 - 80 MPH'  
81-85 = '81 - 85 MPH'  
86-90 = '86 - 90 MPH'  
91-95 = '91 - 95 MPH'  
96-99 = '>= 96 MPH'

**NOTE:** Approximately 50% of the cases are coded as "00" = "NOT MOVING". This could be a valid code for parked or stopped vehicles. However, it is also the default code for uncoded cases. Use with caution.

**V\_DAMAGE      VEHICLE DAMAGE**

'0' = 'NO DAMAGE/TOTLED'      No damage or total damage



'1' = 'LEFT FRONT'  
 '2' = 'MID FRONT'  
 '3' = 'RIGHT FRONT'  
 '4' = 'LEFT SIDE'  
 '5' = 'MIDDLE'  
 '6' = 'RIGHT SIDE'  
 '7' = 'LEFT BACK'  
 '8' = 'MIDDLE BACK'  
 '9' = 'RIGHT BACK'  
 ' ' = 'NOT CODED'  
 OTHER = 'ERROR/OTHER CODE'

**NOTE:** This variable is the initial recorded vehicle damage. See DAMAGE2 - DAMAGE9 for additional damage codes.

**VEHNO            VEHICLE NUMBER**

NON-LABELED VARIABLE - Number of vehicle on accident report. Used to link with occupant file.

**VEHTYPE        BODY STYLE/VEHICLE TYPE**

'01'	= 'PASS CAR'	Passenger car - regular
'02'	= 'CAR/ COMPACT'	Passenger car - compact
'03'	= 'CAR & HOUSE TRL'	Passenger car and house trailer
'04'	= 'CAR & BOAT'	Passenger car and boat
'05'	= 'CAR & OTHER TRL'	Passenger car and other trailer
'06'	= 'CAR/ PUBLIC OWN'	Passenger car - public owned
'07'	= 'PICKUP/PANEL'	Pickup or panel
'08'	= 'PICKUP & HOUSE'	Pickup or panel and house trailer
'09'	= 'PICKUP & BOAT'	Pickup or panel and boat
'10'	= 'PICKUP & OTHER'	Pickup or panel and other trailer
'11'	= 'PICKUP/ PUB OWN'	Pickup or panel - public owned
'12'	= 'PICKUP W CAMPER'	Pickup with camper
'13'	= 'ONE UNIT TRUCK'	Single unit truck
'14'	= 'TRUCK & TRAILER'	Truck and trailer
'15'	= 'SEMI (BOBTAIL)'	Truck trailer - bobtail (power unit only)
'16'	= 'SEMI & TRAILER'	Truck tractor and trailer
'17'	= 'COMM. BUS'	Commercial bus
'18'	= 'SCHOOL BUS'	School bus
'19'	= 'MOTORCYCLE'	Motorcycle
'20'	= 'MOTORCYCLE/ PUBLIC'	Motorcycle - public owned
'21'	= 'MOTOR SCOOTER'	Motor driven bicycle or scooter
'22'	= 'AMBULANCE/ NON'	Ambulance - not emergency
'23'	= 'AMBULANCE/EMER'	Ambulance - emergency
'24'	= 'AMBULANCE/ PUB'	Ambulance - public owned
'25'	= 'FARM TRACTOR'	Farm tractor and/or equipment
'26'	= 'SPECIAL EQUIP'	Special mobile equipment (construction, etc.) - fire truck

'27'	= 'TRK+MOBILE HOME'	Truck and mobile home
'28'	= 'OTHER VEHICLE'	Other - Motorhomes
'30'	= 'ATV-3 WHEELERS'	ATV - 3-wheeler
'31'	= 'TRK+2 SHORT TRL'	Truck and 2 short trailers (permitted to 92'-95' freeway)
'32'	= 'TRK+LONG TRLR'	Truck and long trailer (permitted to 77')
'33'	= 'SEMI+2 SHORT'	Tractor-2 short trailers (trailer up to 28')
'34'	= 'SEMI+2 TRAILERS'	Tractor-2 trailer (permitted to 95')
'35'	= 'SEMI+2 LONG TRL'	Tractor-2 long trailers (permitted to 105'- freeways)
'36'	= 'SEMI+LONG/SHORT'	Tractor-long trailer-short trailer (permitted to 98')
'37'	= 'SEMI+3 SHORT'	Tractor-3 short trailers (permitted to 105'- freeways)
'38'	= 'TRACTOR/LONG TRL'	Tractor & long trailers
'40'	= 'HIT & RUN VEH'	Hit and run vehicle
'41'	= 'CARGO TANK'	Cargo tank

(CON'T)

'42'	= 'PASS CAR TOWING'	Passenger car w/vehicle in tow
'43'	= 'PICKUP TOWING'	Pickup w/vehicle in tow
'44'	= 'TRACTOR TOWING'	Tractor w/tractor in tow
'45'	= 'MOTORHOME'	Motorhome
'46'	= 'MTRHOME TOWING'	Motorhome w boat/vehicle in towing
'47'	= 'FLATBED'	Flatbed
'48'	= 'DUMP TRUCK'	Dump truck
'49'	= 'CONCRETE MIXER'	Concrete mixer
'50'	= 'GARBAGE/REFUSE'	Garbage/refuse
'51'	= 'AUTO TRANSPORTER'	Auto transporter
'52'	= 'SNOWPLOW'	Snowplow
'59'	= 'MOPED'	Moped
'60'	= 'UNKN DESCRIPTION'	Unknown description
' '	= 'NOT CODED'	
OTHER	= 'ERROR/OTHER CODE'	

**NOTE:** (1) There is a large shift in the coding of 'Passenger Car' (01) vs. 'Compact'(02) in 1993.

(2) Codes '30' and '41'-'51' were added in 1992. Codes '52' and '60' were added in 1995.

#### VEHYR

#### VEHICLE MODEL YEAR

'1900'-'1970'	= 'PRE 1970 MODELS'
'1971'-'1980'	= '1971-1980 MODELS'
'1981'-'1990'	= '1981-1990 MODELS'
'1991'	= '1991 MODEL'

'1992' = '1992 MODEL'  
 '1993' = '1993 MODEL'  
 '1994' = '1994 MODEL'  
 '1995' = '1995 MODEL'  
 '1996' = '1996 MODEL'  
 '1997' = '1997 MODEL'  
 '1998' = '1998 MODEL'  
 . = 'NOT CODED'  
 OTHER = 'ERROR/OTHER CODE'

**NOTE:** Each vehicle has a reported vehicle model year in the vehicle files. The above format will simply combine some years in tables. There are a limited number of vehicles whose model years are error codes in that they are greater than the accident year plus 1 (i.e., while a 1993 vehicle can legitimately be in a 1992 crash, a 1994 or later vehicle cannot.) The analyst can screen or correct for these in the analysis.

**VIN                   VEHICLE IDENTIFICATION NUMBER**

NON-LABELED VARIABLE -- VIN

**NOTE:** This is one of a number of VIN-related variables planned for future use by Utah. While the VIN number is being entered into the file, it has not yet been used in any analyses. There appear to be problems in decoding the current data. However, data are available for 1986 and later.

**VIOL                   VIOLATION CODE**

'00' = 'DID NOT CONTRIB'	Did not contribute
'01' = 'RECKLESS DRIVING'	Reckless driving
'02' = 'SPEED TOO FAST'	Speeding
'03' = 'FAILED TO YIELD'	Failure to yield right-of-way
'04' = 'FOLLOW TOO CLOSE'	Following too closely
'05' = 'LEFT OF CENTER'	Wrong side of road
'06' = 'WRONG WAY, 1 WAY'	Wrong way on one-way street
'07' = 'RED LIGHT'	Red light
'08' = 'STOP SIGN'	Stop sign
'09' = 'IMPROPER LOOKOUT'	Improper lookout
'10' = 'IMPROPER PASSING'	Improper passing
'11' = 'IMPROPER TURN'	Improper turn/lane change
'12' = 'NEGLIGENT COLLIS'	Negligent collision
'13' = 'UNDER INFLUENCE'	Driving under influence
'14' = 'OTR MOVING VIOL'	Other moving violations
'15' = 'VEH HOMICIDE'	Driver used vehicle to commit homicide
'16' = 'IMPROP LANE CHGN'	Improper lane change
'17' = 'IMPROPER BACKING'	Improper backing
'18' = 'IMPROP START/STP'	Improper start or stop

'19' = 'HIT AND RUN'                    Vehicle left accident scene  
 '99' = 'ALL OTHER VIOL'                All other non-moving violations  
 ' ' = 'NOT CODED'  
 OTHER = 'ERROR/OTHER CODE'

**NOTE:** While the number of characters in the codes for this variables have changed from three to two or one since 1985, all coding remains legitimate and will be formatted correctly.

**VISION                    DRIVER VISION OBSCURED**

'01' = 'NOT OBSCURED'                Not obscured  
 '02' = 'RN/SNOW ON WND SH'           Rain, snow on windshield  
 '03' = 'WINDSHLD BY LOAD'            Windshield otherwise obscured by vehicle load  
 '04' = 'VISION BY LOAD'                Vision obscured by vehicle load

(CON'T)

'05' = 'TREES, CROPS'                Trees, crops, etc.  
 '06' = 'BUILDING'                    Building  
 '07' = 'EMBANKMENT'                Embankment  
 '08' = 'SIGNBOARD'                 Signboard  
 '09' = 'HILLCREST'                 Hillcrest  
 '10' = 'PARKED VEHICLE'            Parked vehicle  
 '11' = 'MOVING VEHICLE'            Moving vehicle  
 '12' = 'SUN/HDLGHT GLARE'        Sun or headlight glare  
 '13' = 'OTHER'                      Other  
 ' ' = 'NOT CODED'  
 OTHER = 'ERROR/OTHER CODE'

**NOTE:** New variable added in 1995.

**YRS\_DRV                    YEARS DRIVING EXPERIENCE**

0 = 'LESS THAN 1'  
 1-4 = '1 - 4 YRS'  
 5-10 = '5 - 10 YRS'  
 11-20 = '11 - 20 YRS'  
 21-40 = '21 - 40 YRS'  
 41-60 = '41 - 60 YRS'  
 61-99 = '>= 61 YRS'

**NOTE:** This is the number of years the driver has been driving rounded to the nearest year. For example, if a driver has been driving one year and two months, code will be "1". If one year and eight months, code will be "2".

LIST OF VARIABLES FOR UTAH OCCUPANT SUBFILE

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
AGE	DRIVER/OCCUPANT AGE	Occupant	NUM	I-61	II-151
CASENO	ACCIDENT YEAR + CASE NUMBER	Occupant	CHA(9)	I-61	
EJECT	OCCUPANT EJECTION	Occupant	CHA(1)	I-61	II-154
INJ	INJURY TYPE	Occupant	CHA(1)	I-62	II-155
INJ_AREA	INJURY BODY AREA	Occupant	CHA(1)	I-62	II-156
INJCAUSE	INJURY CAUSE	Occupant	CHA(1)	I-62	II-158
NOCC_BAC	NON-OCCUPANT ALCOHOL PERCENT	Occupant	NUM	I-63	
NOCC_TST	NON-OCCUPANT ALCOHOL TEST TYPE	Occupant	CHA(1)	I-63	II-160
PEDACT	PEDESTRIAN/BICYCLIST ACTION	Occupant	CHA(2)	I-63	II-162
REST1	SAFETY EQUIPMENT	Occupant	CHA(1)	I-64	II-166
SEATPOS	OCCUPANT PLACEMENT	Occupant	CHA(3)	I-65	II-168
SEX	DRIVER/OCCUPANT SEX	Occupant	CHA(1)	I-66	II-172
VEHNO	VEHICLE NUMBER	Occupant	NUM	I-66	II-173



SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE  
UTAH OCCUPANT SUBFILE

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

(2) For consistency with other State's files and ease of handling, driver-related variables have been included in this Occupant Subfile as well as in the Vehicle Subfile.

**AGE**

**DRIVER/OCCUPANT AGE**

00 = 'UNKNOWN'  
01 = '1 YEAR'  
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'  
66-99 = ' >=66 YRS'  
. = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**CASENO**

**ACCIDENT YEAR + CASE NUMBER**

NON-LABELED VARIABLE -- 'YYYYNNNNN'  
WHERE YYYY = YEAR OCCURRED  
NNNNN = 00000-99999

**EJECT**

**OCCUPANT EJECTION**

'1' = 'NOT EJECTED'                      Not ejected  
'2' = 'PARTIALLY EJECT'                Partially ejected  
'3' = 'FULLY EJECT'                      Fully ejected  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**INJ****INJURY TYPE**

'1' = 'NO INJURY'	No injury
'2' = 'POSSIBLE INJURY'	Possible injury
'3' = 'BRUISE/ABRASION'	Bruises and abrasions
'4' = 'BLEEDING/BROKEN'	Broken bones or bleeding wounds
'5' = 'FATAL'	Fatal
' ' = 'NOT CODED'	
OTHER = 'ERROR/OTHER CODE'	

**INJ\_AREA****INJURY BODY AREA**

'1' = 'HEAD'	Head
'2' = 'FACE'	Face
'3' = 'NECK'	Neck
'4' = 'CHEST'	Chest
'5' = 'BACK'	Back
'6' = 'LEG(S)'	Leg(s)
'7' = 'ARM(S)'	Arm(s)
'8' = 'TORSO'	Torso
'9' = 'UNKNOWN'	Unknown
' ' = 'NOT CODED'	
OTHER = 'ERROR/OTHER CODE'	

**NOTE:** Variable uncoded or 'UNKNOWN' in 80% of cases. However, a large proportion of this is due to the lack of a 'NO INJURY' code within this variable.

**INJCAUSE****INJURY CAUSE**

'1' = 'STEERING WHEEL'	Steering wheel
'2' = 'WINDSHIELD/DASH'	Dashboard/windshield
'3' = 'ROOF'	Roof
'4' = 'OTHER INTERIOR'	Other interior
'5' = 'MCCY HANDBARS'	Motorcycle handbars
'6' = 'MCCY GAS TANK'	Motorcycle gas tank
'7' = 'EXT VEH PART'	Exterior vehicle part
'8' = 'EXTERNAL OBJ'	External object
'9' = 'UNKNOWN'	Unknown
' ' = 'NOT CODED'	
OTHER = 'ERROR/OTHER CODE'	

**NOTE:** Variable uncoded or 'UNKNOWN' in 80% of cases. However, a large proportion of this is due to the lack of a 'NO INJURY' code within this variable.





**NOCC\_BAC          NON-OCCUPANT ALCOHOL PERCENT**

000 = '000'  
001-007 = '0.01 - 0.07'  
008-009 = '0.08 - 0.09'  
010-015 = '0.10 - 0.15'  
016-020 = '0.16 - 0.20'  
021-030 = '0.21 - 0.30'  
031-999 = ' >= 0.31'  
. = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** The total proportion of positive BAC's and the proportion of '>= 0.31' BAC's are both suspect. Discontinued after 1993 due to coding problems.

**NOCC\_TST          NON-OCCUPANT ALCOHOL TEST TYPE**

'1' = 'NO TEST'                          No test  
'2' = 'BLOOD TEST'                       Blood  
'3' = 'BREATH TEST'                      Breath  
'4' = 'OTHER TEST'                       Other  
'5' = 'UNKNOWN TEST'                    Unknown  
'6' = 'REFUSED TEST'                    Refused  
'7' = 'POST MORTEM'                     Post mortem  
\*'8' = 'DRUG SCAN'                       Drug scan  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** Code '8' data are added in 1994 and later years.

**PEDACT            PEDESTRIAN/BICYCLIST ACTION**

'00' = 'NOT STATED'                     Not stated  
'01' = 'CROSSING W/SGNAL'               Crossing at intersection - with  
    signal  
'02' = 'XING AGAINST/SIG'               Crossing at intersection - against  
    signal  
'03' = 'XING/NO SIGNAL'                 Crossing at intersection - no signal  
'04' = 'XING/DIAGONALLY'               Crossing at intersection -  
    diagonally  
'05' = 'XING/NON-NTERSCT'               Crossing not at intersection  
'06' = 'WALK W/TRAFFIC'                 Walking in roadway - with traffic  
'07' = 'WALK AGAINST/TRF'               Walking in roadway - against traffic  
'08' = 'STAND ON MEDIAN'                 Standing on median island in  
    crosswalk  
'09' = 'OTR STAND IN RD'                 Other standing in roadway  
'10' = 'GET ON/OFF BUS'                 Getting on/off bus

'11'	=	'GET ON/OFF OTHER'	Getting on/off other vehicle
'12'	=	'PUSH/WORK ON VEH'	Pushing/working on vehicle in roadway
'13'	=	'OTR WORK IN RDWY'	Other working in roadway
'14'	=	'PLAY IN ROADWAY'	Playing on roadway
'15'	=	'BEHIND PARKED'	Coming from behind parked cars
'16'	=	'HITCHING ON VEH'	Hitching on vehicle
'17'	=	'LYING IN ROADWAY'	Lying in roadway
'18'	=	'VENDING IN RDWY'	Vending in roadway
'19'	=	'OTHER IN ROADWAY'	Other in roadway
'20'	=	'NO IN ROADWAY'	Not in roadway
*'21'	=	'RDING WITH TRAFF'	Riding in roadway with traffic
*'22'	=	'RDING AGNST TRAF'	Riding in roadway against traffic
*'23'	=	'WATNG T/FRM SCHL'	Waiting on route to or from school
*'24'	=	'WALKNG ON SDWLK'	Walking on sidewalk
*'25'	=	'RDING ON SDWLK'	Riding on sidewalk
' '	=	'NOT CODED'	
OTHER	=	'ERROR/OTHER CODE'	

\*New codes added in 1994.

**NOTE:** This variable is in the Accident File through 1994, and is converted to an Occupant File variable for 1995 and later.

#### REST1

#### SAFETY EQUIPMENT

'1'	=	'LAP BELT USED'	Lap belt used
'2'	=	'LAP&SHLD USED'	Lap and shoulder belt used
'3'	=	'BELTS NOT USED'	Belts not used
'4'	=	'NO BELTS INSTALL'	No belts installed
'5'	=	'CHILD RESTRAINT'	Child restraint used
*'6'	=	'AIR BAG W BELT'	Air bag deployed with belt
*'7'	=	'AIR BAG WO BELT'	Air bag deployed with no belt
'8'	=	'HELMET WORN'	Helmet worn
'9'	=	'EYE PROTECT USED'	Eye protection used
'0'	=	'HELMET+EYE USED'	Helmet worn and eye protection used
'A'	=	'SHOULDR BLT ONLY'	Shoulder belt only used
'B'	=	'OTHER'	Other
'C'	=	'UNKNOWN'	Unknown
'G'	=	'AIR BAG DPLO<'94'	Air bag deployed (pre-1994)
' '	=	'NOT CODED'	Not coded
OTHER	=	'ERROR/OTHER CODE'	

\*New codes added in 1994.

**NOTE:** The proportion of belts used appears to be higher than expected, particularly in 1987. As in other States, this could be the effect of occupants providing incorrect information due to the mandatory belt law.

**SEATPOS****OCCUPANT PLACEMENT**

'000'	=	'NON-MOTORIST'	Non-motorist
'001'	=	'PEDESTRIAN'	Pedestrian
'004'	=	'BICYCLIST'	Bicyclist
'011'	=	'FRONT SEAT-DRIV'	Front seat, left (driver) side
'012'	=	'FRONT SEAT-MIDDL'	Front seat, middle
'013'	=	'FRONT SEAT-RIGHT'	Front seat, right side
'018'	=	'FRONT SEAT-OTHER'	Front seat, other
'019'	=	'FRONT-UNKNOWN'	Front seat, unknown
'021'	=	'2ND SEAT-LEFT'	Second seat, left side
'022'	=	'2ND SEAT-MIDDLE'	Second seat, middle
'023'	=	'2ND SEAT-RIGHT'	Second seat, right side
'028'	=	'2ND-OTHER'	Second seat, other
'029'	=	'2ND-UNKNOWN'	Second seat, unknown
'031'	=	'3RD SEAT-LEFT'	Third seat, left side
'032'	=	'3RD SEAT-MIDDLE'	Third seat, middle
'033'	=	'3RD SEAT-RIGHT'	Third seat, right side
'038'	=	'3RD-OTHER'	Third seat, other
'039'	=	'3RD-UNKNOWN'	Third seat, unknown
'041'	=	'4TH SEAT-LEFT'	Fourth seat, left side
'042'	=	'4TH SEAT-MIDDLE'	Fourth seat, middle
'043'	=	'4TH SEAT-RIGHT'	Fourth seat, right side
'048'	=	'4TH-OTHER'	Fourth seat, other
'049'	=	'4TH-UNKNOWN'	Fourth seat, unknown
'050'	=	'TRUCK-SLEEPER'	Sleeper section of cab (truck)
'051'	=	'ENCLOSED CARGO'	Other passenger in enclosed passenger or cargo area
'052'	=	'UNENCLOSED CARGO'	Other passenger in unenclosed passenger or cargo area
'053'	=	'? ENCLOSED CARGO'	Other passenger in passenger or cargo area, unknown whether or not enclosed
'054'	=	'TRAILING UNIT'	Trailing unit
'055'	=	'RIDE ON EXTERIOR'	Riding on vehicle exterior
'088'	=	'UNATTENDED VEH'	Unattended vehicle
'099'	=	'UNKNOWN'	Unknown
' '	=	'NOT CODED'	
OTHER	=	'ERROR/OTHER CODE'	

**NOTE:** The 1985 codes for this version were 2-digit codes. They have been converted in the SAS formatting program to match the later year's codes.

**SEX****DRIVER/OCCUPANT SEX**

'U', '0'	=	'UNKNOWN'
'M', '1'	=	'MALE'

'F','2' = 'FEMALE'  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** Conflicting raw file documentation. Above coding is correct according to Utah.

**VEHNO**

**VEHICLE NUMBER**

NON-LABELED VARIABLE - Number of vehicle on accident report. Used to link with vehicle file.

LIST OF VARIABLES FOR UTAH ROADLOG FILE

SAS			SAS		
VARIABLE			VARIABLE	FORMAT	TABLE
<u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>TYPE</u>	<u>PAGE NO.</u>	<u>PAGE NO.</u>
AADT	AADT (BOTH DIRECTIONS)	Roadlog	NUM	I-69	II-179
AADTGRP	AADT VOLUME GROUP	Roadlog	CHA(2)	I-69	
ACC_PNTS	NUMBER OF MAJOR ACCESS POINTS	Roadlog	CHA(2)	I-70	
ACCESS	ACCESS CONTROL	Roadlog	CHA(1)	I-70	II-181
APP_WD	APPROACH WIDTH	Roadlog	NUM	I-70	
BEGMP	BEGIN MILEPOST	Roadlog	NUM	I-70	
COMVEH	TRUCK/COMMERCIAL VEHICLE ROUTES	Roadlog	CHA(1)	I-71	II-182
COUNTY	FIPS COUNTY CODE	Roadlog	CHA(3)	I-71	II-183
DESG_SPD	WEIGHTED DESIGN SPEED	Roadlog	NUM	I-72	
DIR_FACT	DIRECTIONAL FACTOR	Roadlog	CHA(3)	I-72	
DRAINAGE	DRAINAGE ADEQUACY	Roadlog	CHA(1)	I-72	
ENDMP	END MILEPOST	Roadlog	NUM	I-72	
FAID_URB	FAID URBAN AREA	Roadlog	CHA(5)	I-72	
FED_AID	FEDERAL-AID SYSTEM	Roadlog	CHA(1)	I-73	II-187
FED_STAS	FEDERAL-AID SYSTEM STATUS	Roadlog	CHA(1)	I-73	
FUNC_CLS	FUNCTIONAL CLASSIFICATION	Roadlog	CHA(2)	I-73	II-188
FUT_ADT	FUTURE ADT	Roadlog	NUM	I-73	
HOR_ACC	HORIZONTAL ALIGNMENT ADEQUACY	Roadlog	CHA(1)	I-74	
K_FACTOR	K FACTOR	Roadlog	CHA(2)	I-74	
LANEWID	AVER THROUGH LANE WIDTH	Roadlog	NUM	I-74	II-190
LEVL_CNT	GOVERNMENTAL OWNERSHIP	Roadlog	CHA(2)	I-75	
MED_TYPE	TYPE OF MEDIAN	Roadlog	CHA(1)	I-75	II-191
MEDWID	PREDOMINANT MEDIAN WIDTH	Roadlog	NUM	I-76	II-192
MVMT	MILLION VEHICLE MILES TRAVELED	Roadlog	NUM	I-76	
NBR_INT	NUM. OF GRADE-SEPARATED INTERCHANGES	Roadlog	NUM	I-76	
NHS_IND	NATIONAL HIGHWAY SYSTEM INDICATOR	Roadlog	CHA(1)	I-76	II-193
NO_LANES	TOTAL NUM OF TRAFFIC LANES	Roadlog	NUM	I-76	II-194
NO_OTR	NUM. INTERSECTION, NO CONTROL	Roadlog	NUM	I-77	
NO_SGNL	NUM. SIGNALIZED INTERSECTIONS	Roadlog	NUM	I-77	
NO_SIGN	NUM. INTERSECTION, STOP SIGN	Roadlog	NUM	I-77	
ONEWAY	ONE-WAY OR TWO-WAY FACILITY	Roadlog	CHA(1)	I-77	II-196
PAV_SEC	PAVEMENT SECTION	Roadlog	CHA(1)	I-77	II-197
PAV_WDL	PAVED LEFT SHOULDER WIDTH	Roadlog	NUM	I-78	II-198
PAV_WIDR	PAVED RIGHT SHOULDER WIDTH	Roadlog	NUM	I-78	II-199
PAVECOND	PRESENT SERVICE RATING	Roadlog	CHA(2)	I-78	II-200
PCT_GREN	PERCENT GREEN TIME	Roadlog	NUM	I-78	
PCT_TRK	OFF-PEAK PERCENT TRUCKS	Roadlog	NUM	I-79	II-201
PCTSIGHT	PERCENT PASSING SIGHT DISTANCE	Roadlog	NUM	I-79	
PEAK_PRK	PEAK PARKING	Roadlog	CHA(1)	I-79	
PEAK_TRK	PEAK PERCENT TRUCKS	Roadlog	NUM	I-80	II-202
PEAKCAPT	PEAK CAPACITY	Roadlog	CHA(5)	I-80	

(CON'T)

LIST OF VARIABLES FOR UTAH ROADLOG FILE

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
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SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE  
UTAH ROADLOG FILE

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

**AADT**

**AADT (BOTH DIRECTIONS)**

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:** AADT for both directions of flow. Approximately, 10% of mileage on rural and urban local roads is coded '0' meaning uncoded.

**AADTGRP**

**AADT VOLUME GROUP**

NON-LABELED VARIABLE

**NOTE:** This is one of several HPMS-section variables retained on the file. While approximately 55% of the mileage across all years is coded as "0" which means "uncoded," almost all the uncoded mileage is on rural minor collectors and rural and urban local roads. The data also changed significantly in 1993, when the percentage of uncoded sections decreased significantly (i.e., only 18% of the sections are uncoded after 1993).



**ACC\_PNTS            NUMBER OF MAJOR ACCESS POINTS**

'00'	= 'NONE/UNCODED'	None or not coded
'R0'	= '0/MI'	Zero points per mile
'R1'	= '1-4/MI'	1-4 points per mile
'R2'	= '5-9/MI'	5-9 points per mile
'R3'	= '10-14/MI'	10-14 points per mile
'R4'	= '15-19/MI'	15-19 points per mile
'R5'	= '20-24/MI'	20-24 points per mile
'R6'	= '>24/MI'	More than 24 points per mile

**NOTE:** This is an HPMS sample section variable which represents the number of access points that are estimated to have at least 500 vehicle movements per week for all arterials not having full control of access. Access points with fewer movements (e.g., residential driveways) would not be counted. Note that "00" can mean both "none" and "not coded," however, it appears that this is more likely to be "not coded," while the "R0" code means "none".

Data are available for 1991-1994.

**ACCESS            ACCESS CONTROL**

'0'	= 'NA'	Not Applicable
'1'	= 'FULL CONTROL'	Full control
'2'	= 'PARTIAL CONTROL'	Partial control
'3'	= 'NO CONTROL'	No control

**NOTE:** While appearing to be corrected in the 1993 and later files, prior to 1993, this variable was not an accurate depiction of true access control in that, for many non-HPMS sections on 2-lane roadway, ACCESS was incorrectly coded as "1" (full control of access). To correct for this, the following edit is suggested:  
IF (USE\_FLG = 2) AND (FUNC\_CLS = 1, 11, or 12), THEN ACCESS = "3"

**APP\_WD            APPROACH WIDTH**

NON-LABELED VARIABLE

**NOTE:** With limited exceptions in rural areas, this HPMS-related variable is coded only when section is urban or urbanized for roads with at-grade intersections. Width is curb to curb for one-way streets or curb to division line for two-way streets. Thus a "0" code can mean either rural or uncoded.

**BEGMP            BEGIN MILEPOST**

NON-LABELED VARIABLE

**COMVEH TRUCK/COMMERCIAL VEHICLE ROUTES**

'1' = 'N/PRKWY CMV OK'	Not a parkway - truck/commercial vehicle allowed
'2' = 'PRKWY NO CMV'	Parkway - truck/commercial vehicle prohibited
'3' = 'N/PKWY NO CMV'	Not a parkway - truck/commercial vehicle prohibited all day
'4' = 'N/PKWY SOME CMV'	Not a parkway - truck/commercial vehicles prohibited during specific periods

**NOTE:** New variable added in 1991.

**COUNTY FIPS COUNTY CODE**

'001'	=	'BEAVER'
'003'	=	'BOX ELDER'
'005'	=	'CACHE'
'007'	=	'CARBON'
'009'	=	'DAGGETT'
'011'	=	'DAVIS'
'013'	=	'DUCHESNE'
'015'	=	'EMERY'
'017'	=	'GARFIELD'
'019'	=	'GRAND'
'021'	=	'IRON'
'023'	=	'JUAB'
'025'	=	'KANE'
'027'	=	'MILLARD'
'029'	=	'MORGAN'
'031'	=	'PIUTE'
'033'	=	'RICH'
'035'	=	'SALT LAKE'
'037'	=	'SAN JUAN'
'039'	=	'SANPETE'
'041'	=	'SEVIER'
'043'	=	'SUMMIT'
'045'	=	'TOOELE'
'047'	=	'UINTAH'
'049'	=	'UTAH'
'051'	=	'WASATCH'
'053'	=	'WASHINGTON'
'055'	=	'WAYNE'
'057'	=	'WEBER'

**DESG\_SPD      WEIGHTED DESIGN SPEED**

NON-LABELED VARIABLE - This is an HPMS variable, and is only coded for certain rural roads - rural major and minor collectors. Thus data are coded as "0" meaning "uncoded" in all urban areas and on 98% of rural road mileage. The average highway speed is determined by weighting the design speed of the individual horizontal curves and tangents in the section by the length of each.

**DIR\_FACT      DIRECTIONAL FACTOR**

NON-LABELED VARIABLE - This is an HPMS-related variable, and is only coded for approximately 54% of rural mileage and 48% of urban mileage in the HSIS file. Almost all sections of rural and urban freeways and primary arterials, and rural minor arterials are coded. When coded, it is the percentage of the design hour volume (30<sup>th</sup> highest hour) flowing in the peak direction, to the nearest 5 percent. Code '100' is for one-way facilities.

**DRAINAGE      DRAINAGE ADEQUACY**

'1' = 'GOOD'	Full adequate drainage and cross section design.
'2' = 'FAIR'	Somewhat below the standard.
'3' = 'POOR'	Evidence of severe flooding, erosion, or other drainage problems.
OTHER = 'ERROR/OTHER CODE'	

**NOTE:** This is an HPMS-related variable added in 1991. It is coded "0" meaning "uncoded" for approximately 79% of the HSIS mileage, with significant percentages of uncoded sections across all functional classes.

**ENDMP      END MILEPOST**

NON-LABELED VARIABLE

**FAID\_URB      FAID URBAN AREA**

NON-LABELED VARIABLE -This is the five-digit city code to identify a particular small urban area, which means it is only coded for approximately 8% of the HSIS sections. The item is coded as '00000' for rural and for larger urban areas.

**FED\_AID      FEDERAL-AID SYSTEM**

'1'	= 'INTERSTATE'	Interstate
'2'	= 'F/AID PRIMARY'	Federal aid primary
'3'	= 'F/AID URBAN'	Federal aid urban
'4'	= 'F/AID SECOND'	Federal aid secondary
'8'	= 'NON FED/AID'	Non-Federal aid

**NOTE:** Inventory data for roadways classified as "1"- "4" in this variable are considered very accurate.

**FED\_STAS      FEDERAL-AID SYSTEM STATUS**

'1'	= 'FED-AID OPEN'	Federal-Aid System open to traffic
'2'	= 'FED-AID N/OPEN'	Federal-Aid System not yet built or not open to traffic
'8'	= 'NON-FED AID'	
OTHER	= 'ERROR/OTHER CODE'	

**FUNC\_CLS      FUNCTIONAL CLASSIFICATION**

'01'	= 'RUR-INTERSTATE'	Rural-interstate
'02'	= 'RUR-PR ARTERIAL'	Rural-primary arterial
'06'	= 'RUR-MINOR ARTER'	Rural-minor arterial
'07'	= 'RUR-MAJ COLLECT'	Rural-major collector
'08'	= 'RUR-MIN COLLECT'	Rural-minor collector
'09'	= 'RURAL LOCAL'	Rural-local
'11'	= 'URB-INTERSTATE'	Urban-interstate
'12', '13'	= 'URB-FREEWAYS'	Urban-freeways
'14', '15'	= 'URB-OTR PR ARTER'	Urban-other primary arterial
'16'	= 'URB-MINOR ARTER'	Urban-minor arterial
'17'	= 'URB-COLLECTOR'	Urban-collector
'19'	= 'URBAN LOCAL'	Urban-local

**FUT\_ADT      FUTURE ADT**

NON-LABELED VARIABLE - the forecasted Annual Average Daily Traffic in both directions

**NOTE:** The HPMS-related data are available from 1991 to 1994. While some data is available for all functional classes, full coding is primarily restricted to rural and urban freeways and arterials.



**HOR\_ACC            HORIZONTAL ALIGNMENT ADEQUACY**

'0'	= 'NOT REQ'D'	Not required.
'1'	= 'STNDRDS'	Meet design standards
'2'	= 'BELOW STNDRDS'	Below design standards
'3'	= 'INFRQNT CURVE'	Infrequent curves
'4'	= 'UNSAFE CURVE'	Several curves uncomfortable and/or unsafe when traveled at prevailing speed limit

**NOTE:** This is an HPMS-related variable added in 1991. It is coded "0" meaning "uncoded" for approximately 44% of rural and 86% of urban mileage.

**K\_FACTOR            K FACTOR**

NON-LABELED VARIABLE - This HPMS-related variable was added in 1991, and is coded "0" meaning "uncoded" for approximately 46% of rural and 54% of urban HSIS mileage. Approximately 70% of the rural and urban minor collectors and local road mileage is uncoded. When coded, it is the design hour volume (30<sup>th</sup> highest hour) as a percentage of the Annual Average Daily Traffic - to the nearest whole percent

**LANEWID            AVER THROUGH LANE WIDTH**

0	= '0'
1-5	= '1-5'
6-7	= '6-7'
8-9	= '8-9'
10-11	= '10-11'
12-13	= '12-13'
14-15	= '14-15'
16-19	= '16-19'
20-23	= '20-23'
24-99	= ' >=24'

**NOTE:** This is one of several HPMS-section variables retained on the file (prevailing width to nearest foot). It is coded "0" meaning "uncoded" for approximately 25% of rural and 15% of urban HSIS mileage. Most of the uncoded mileage is on rural and urban minor collectors and local roads.

**LEVL\_CNT      GOVERNMENTAL OWNERSHIP**

'01'	=	'ST HGHWY'	State highway agency
'02'	=	'CNTY HGHWY'	County highway agency
'03'	=	'TOWN HGHWY'	Town/township highway agency
'04'	=	'MUNICIPAL'	Municipal highway agency
'11'	=	'ST PARK'	State park, forest, or reservation agency
'12'	=	'LOCAL PARK'	Local park, forest, or reservation agency
'21'	=	'OTH ST AGNCY'	Other state agency
'25'	=	'OTH LOC AGNCY'	Other local agency
'26'	=	'PRIVATE'	Private
'31'	=	'ST TOLL AUTH'	State toll authority
'32'	=	'LOC TOLL AUTH'	Local toll authority
'60'	=	'OTHER FED'	Other federal agencies (not listed below)
'62'	=	'INDIAN AFFR'	Bureau of Indian affairs
'64'	=	'US FOREST'	US Forest service
'66'	=	'NTNL PRK'	National park service
'68'	=	'BLM'	Bureau of land management
'70'	=	'MILIT RES'	Military reservation/corps of Engineers

**NOTE:** This variable is to identify the owner of the facility. If more than one code could be used for a section, the lowest numerical code is used.

**MED\_TYPE      TYPE OF MEDIAN**

'0'	=	'NOT APPLIC'	Not applicable
'1'	=	'CURBED'	Curbed
'2'	=	'POSITIVE BARRIER'	Positive barrier
'3'	=	'UNPROTECTED'	Unprotected
'4'	=	'NO MEDIAN'	None
OTHER	=	'ERROR/OTHER CODE'	

**NOTE:** Coding errors in the "Positive Barrier" code in 1985-1986.

**MEDWID            PREDOMINANT MEDIAN WIDTH**

0 = '0'  
1-10 = '1-10'  
11-20 = '11-20'  
21-30 = '21-30'  
31-40 = '31-40'  
41-60 = '41-60'  
61-90 = '61-90'  
91-98 = '91-98'  
99 = '> 100 FT'

**NOTE:** This variable is the median width (including shoulders), measured between the inside edges of the through roadways, to the nearest foot. Code "0" indicates undivided highways, and "99" indicates widths greater than 100 feet.

**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.

**NBR\_INT        NUM. OF GRADE-SEPARATED INTERCHANGES**

NON-LABELED VARIABLE - This HPMS variable represents the number of grade-separated interchanges for all freeway and expressway facilities. It is only coded for HSIS sections falling within HPMS sample sections.

**NOTE:** Data are available for 1991-1994.

**NHS\_IND        NATIONAL HIGHWAY SYSTEM INDICATOR**

'0' = 'NOT NHS'                            Not on National Highway System  
'1' = 'NHS'                                On National Highway System  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** New variable added in 1995.

**NO\_LANES      TOTAL NUM OF TRAFFIC LANES**

NON-LABELED VARIABLE - No. of lanes carrying traffic in both directions excluding parking and turning lanes carrying through traffic in the off-peak period. "0" means "uncoded." Most of the uncoded mileage is on rural and urban local roads.



**NO\_OTR            NUM. INTERSECTION, NO CONTROL**

NON-LABELED VARIABLE - This HPMS variable represents the number of intersections in the section controlled by other types of signing (i.e., flashing yellow signal ball) or having no controls. It is only coded for HSIS sections falling within HPMS sample sections.

**NO\_SGNL           NUM. SIGNALIZED INTERSECTIONS**

NON-LABELED VARIABLE - This HPMS variable represents the number of signalized intersections in the section. It is only coded for urban HSIS sections falling within HPMS sample sections.

**NO\_SIGN           NUM. INTERSECTION, STOP SIGN**

NON-LABELED VARIABLE - This HPMS variable represents the number of intersections controlled by stop signs in the section. It is only coded for HSIS sections falling within HPMS sample sections.

**ONEWAY            ONE-WAY OR TWO-WAY FACILITY**

'1' = 'ONE WAY'  
'2' = 'TWO WAY'  
OTHER = 'ERROR/OTHER CODE'

**PAV\_SEC           PAVEMENT SECTION**

'0' = 'UNPAVED'	Unpaved
'1' = 'FLEX-SN KNOWN'	Flexible pavements, Structural Number (SN) known, see SLAB_THK
'2' = 'RIGID-D KNOWN'	Rigid pavements, slab thickness (D) known, see SLAB_THK
'3' = 'HEAVY PAVEMENT'	Heavy pavement, SN/D unknown
'4' = 'MEDIUM PAVEMENT'	Medium pavement, SN/D unknown
'5' = 'LIGHT PAVEMENT'	Light pavement, SN/D unknown

**NOTE:** This is one of several HPMS-section variables retained on the file. If coded "1" or "2", see SLAB\_THK for SN or D. Unpaved facilities include SURF\_TYP='20','30', and '40'.

**PAV\_WDL**      **PAVED LEFT SHOULDER WIDTH**  
**PAV\_WIDR**      **PAVED RIGHT SHOULDER WIDTH**

0 = '0'  
1-3 = '1-3'  
4-6 = '4-6'  
7-9 = '7-9'  
10-13 = '10-13'  
14-99 = '>=14'

**NOTE:** (1) Paved shoulder width is the total pavement width minus lane width, exclusive of paved medians. If the total pavement width is less than 24 feet, the lane width would be the total pavement width divided by two (which means shoulder width is zero).

(2) It appears from the data that "right shoulder" refers to shoulders on the outside shoulder in both directions of travel. The "left shoulder" appears to be the inside shoulder on divided highways. Thus, PAV\_WDL seems to be only coded for divided roadways (i.e., over 90% of the data are coded as "0", and almost all coded sections are on urban and rural freeways).

**PAVECOND**      **PRESENT SERVICE RATING**

'00' = 'UNPAVED'                      Unpaved or uncoded  
'10' = 'VRY PR'                        Very poor  
'11'-'20' = 'POOR'                    Poor  
'21'-'30' = 'FAIR'                    Fair  
'31'-'40' = 'GOOD'                    Good  
'41'-'50' = 'VRY GD'                 Very good  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** This is one of several HPMS-section variables retained on the file. Approximately 75% of the data are uncoded.

**PCT\_GREN**      **PERCENT GREEN TIME**

1 - 10 = '1 - 10%'  
11 - 20 = '11 - 20%'  
21 - 30 = '21 - 30%'  
31 - 40 = '31 - 40%'  
41 - 50 = '41 - 50%'  
51 - 60 = '51 - 60%'  
61 - 70 = '61 - 70%'  
71 - 80 = '71 - 80%'  
81 - 90 = '81 - 90%'  
91 - 100 = '91 - 100%'

**NOTE:** This is an HPMS variable added in 1991. It is only coded for urban sections, and then for only 3% of the HSIS mileage. Note that "0" means "uncoded."

**PCT\_TRK            OFF-PEAK PERCENT TRUCKS**

1 - 10 = '1 - 10%'  
11 - 20 = '11 - 20%'  
21 - 30 = '21 - 30%'  
31 - 40 = '31 - 40%'  
41 - 50 = '41 - 50%'  
51 - 60 = '51 - 60%'  
61 - 70 = '61 - 70%'  
71 - 80 = '71 - 80%'  
81 - 90 = '81 - 90%'  
91 - 100 = '91 - 100%'

**NOTE:** This variable is the percent trucks in non-peak period. This is one of several HPMS-section variables retained on the file. Approximately 51% of the mileage is coded as "0" meaning "uncoded." Data are coded more often on interstates and arterials.

**PCTSIGHT            PERCENT PASSING SIGHT DISTANCE**

1 - 10 = '1 - 10%'  
11 - 20 = '11 - 20%'  
21 - 30 = '21 - 30%'  
31 - 40 = '31 - 40%'  
41 - 50 = '41 - 50%'  
51 - 60 = '51 - 60%'  
61 - 70 = '61 - 70%'  
71 - 80 = '71 - 80%'  
81 - 90 = '81 - 90%'  
91 - 100 = '91 - 100%'

**NOTE:** This HPMS-related variable is coded "0" meaning "uncoded" for 89% of rural mileage and 98% of urban HSIS mileage. When coded, it represents the percent of the section length which has an available passing sight distance of at least 1,500 feet.

**PEAK\_PRK            PEAK PARKING**

'0' = 'NA'	Not applicable
'1' = 'ONE SIDE'	Parking permitted one side
'2' = 'BOTH SIDES'	Parking permitted both sides
'3' = 'NONE'	No parking allowed or none available
OTHER = 'ERROR/OTHER CODE'	

**NOTE:** This HPMS-related variable was added in 1991, and is coded as "0" meaning either "not applicable" or "uncoded" for 99% of rural and 76% of urban HSIS mileage.

**PEAK\_TRK      PEAK PERCENT TRUCKS**

1 - 10 = '1 - 10%'  
11 - 20 = '11 - 20%'  
21 - 30 = '21 - 30%'  
31 - 40 = '31 - 40%'  
41 - 50 = '41 - 50%'  
51 - 60 = '51 - 60%'  
61 - 70 = '61 - 70%'  
71 - 80 = '71 - 80%'  
81 - 90 = '81 - 90%'  
91 - 100 = '91 - 100%'

**NOTE:** This is one of several HPMS-section variables retained on the file (percent trucks in the peak period). Approximately 51% of the mileage is coded as "0" meaning "uncoded." Most of the uncoded mileage is on rural collectors and local roads and urban minor arterials, collectors and local roads.

**PEAKCAPT      PEAK CAPACITY**

NON-LABELED VARIABLE - This HPMS variable was added in 1991, and is coded (i.e., not "00000") for approximately 22% of the HSIS mileage. When coded, it represents the present hourly capacity (urban - in one direction) reflecting the peak-period situation. Rural is optional (both directions for two-lane facilities and one direction for multi-lane facilities).

**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 - This HPMS sample section variable was added to the file in 1991, and is coded as "0" meaning "uncoded" in approximately 81% of the HSIS mileage. When coded, it represents the prevailing right-of-way width in whole feet for the section (estimate or actual feet). Code '999' is 1,000 feet or greater.

**RSHL\_TYP              SHOULDER TYPE (RIGHT SIDE)**

Pre-1988 Codes

'1' = 'SURFACED'	Surfaced
'2' = 'STABILIZED'	Stabilized
'3' = 'EARTH'	Earth
'4' = 'CURBED'	Curbed
'5' = 'NO SHOULDER'	No shoulder or curb
OTHER = 'ERROR/OTHER CODE'	

Codes for 1988 and Later Years

'1' = 'NO SHOULDER'	No shoulder
'2' = 'BITUM SURFACED'	Bituminous surface
'3' = 'CONCRETE,NO TIE'	Concrete -- Not tied
'4' = 'CONCRETE, TIED'	Concrete -- Tied
'5' = 'STABILIZED'	Stabilized
'6' = 'COMBINATION'	Combination of two or more types
'7' = 'EARTH'	Earth
'8' = 'CURBED'	Curbed
OTHER = 'ERROR/OTHER CODE'	

**RTE\_ID                TRAFFIC ROUTE ID**

NON-LABELED VARIABLE - the Interstate route number. It is optional for non-interstate routes. It ranges from '00000'-'00666'. Note that '00000' means "uncoded."

**RTE\_NBR            UNIQUE ROUTE/BLOC DESIGN**

NON-LABELED VARIABLE

**NOTE:** (1) This variable can be used as an indicator of sections with the most accurate inventory data. Route numbers beginning with 'A' are on the State-controlled system and are characterized by accurate data. (Accurate data is also available for all additional Federal-Aid roads classed as '1'-'4' under FEDAID.) Sections with route numbers less than 5,000, but not beginning with "A", are considered to have "good" data (i.e., slightly less accurate than data on State and Federal-Aid sections.)

(2) Some sections of Interstate (and other routes) will have coinciding sections with other routes (e.g., sections of I-15 coincide with sections of I-80 and I-84). Analysts conducting route-based analysis must be aware of this and must pick up pertinent data from the coinciding routes. See Discussion.

**RTE\_TYPE            ROUTE TYPE**

'0' = 'NOT CODED'	Not coded
'1' = 'INTERSTATE'	Interstate
'2' = 'US ROUTE'	U.S.
'3' = 'STATE ROUTE'	State
'4' = 'COUNTY ROUTE'	County
'5' = 'TOWNSHIP ROUTE'	Township
'6' = 'MUNICIPAL ROUTE'	Municipal
'7' = 'NONE OF ABOVE'	None of the above

**NOTE:** (1) This is an HPMS-related variable. Approximately 50% of the mileage is "not coded" for rural collectors and local roads, and for urban minor arterials, collectors, and local roads. Note that the code for the highest class of route will be used if a route is signed with two or more classes.

(2) In 1992 and earlier, it appears that code "7" ("none of above") actually meant "not coded" - i.e., there were very few "0" codes in the file. In 1993 and later, the percentage of "0" codes increases significantly, while the percentage of code "7" is near zero percent. Thus, use this variable with caution.

**RURURB            RURAL/URBAN DESIGNATION**

'1' = 'RURAL'	Rural
'2' = 'URBAN 5-50K'	Small urban (5,000-49,999)
'3' = 'URBAN 50-200K'	Urbanized (50,000-199,999)
'4' = 'URBAN >= 200K'	Urbanized (200,000 or more)

**NOTE:** Code '4' was added in 1993. Prior to 1993, code '3' contained all urban areas above 50,000 population.

**SAM\_SUB            HPMS SAMPLE SUBDIVISION**

NON-LABELED VARIABLE - This data is used if it is necessary to subdivide an HPMS section due to operational or capital improvements on part of the section's length.

**SAMP\_NB            HPMS SAMPLE NUMBER**

NON-LABELED VARIABLE - a unique number that identifies the sample section in the original HPMS or a new sample section. The data are available after 1995. Note that these numbers are assigned to both the HPMS Sample file and the HPMS Universe file (which represents almost all of the HSIS sections).

**SEG\_LNG            SECTION LENGTH IN MILES**

NON-LABELED VARIABLE - XXX.XX

**NOTE:** This variable is provided by Utah. However, the length is coded as "0" for a limited number of sections (less than 150 miles in the highest years). The analyst can either omit these sections from a length-based analysis or "fix" them. While it may not be absolutely accurate in all cases, we suggest that these unknown section lengths can be estimated by the difference in the beginning and ending milepoints (i.e., ENDMP - BEGMP).

**SIGNAL            PREVAILING SIGNAL TYPE**

'0' = 'UNCODED'  
'1' = 'UNCORD FIX TIME'  
'2' = 'TRAFFIC ACT'  
'3' = 'PROGRESSIVE'  
'4' = 'NO SIGN SYS'

**NOTE:** This is one of several HPMS related variables retained on the file. Over 60% of the data are uncoded.

**SLAB\_THK           STRUCT-NO-OR-SLAB THICKNESS**

NON-LABELED VARIABLE - This is an HPMS variable added in 1991, and approximately 86% of the HSIS mileage is coded as "0" meaning "uncoded." When present, coding is primarily on the Interstate/freeway sections. When coded, it represents structural



number or slab thickness. If PAV\_SEC = '1', SLAB\_THK is the structural number. If PAV\_SEC = '2', SLAB\_THK is the slab thickness (in inches).

**SPD\_LIMT      POSTED DAYLIGHT SPEED LIMIT**

NON-LABELED VARIABLE - This is one of several HPMS-section variables retained on the file. Over 50% of the data are uncoded, with higher percentages of uncoded data on rural collectors and local roads, and on urban minor arterials, collectors and local roads.

**SURF\_TYP      PAVEMENT TYPE**

'20'	= 'UNIMPROVED'	Unimproved
'30'	= 'GRADED/DRAINED'	Graded and drained
'40'	= 'SOIL/GRAVEL/STN'	Soil, gravel, or stone
'51'	= 'BITUM SURFC TRT'	Soil/gravel/stone with bitum. surface treatment
'52'	= 'MIXED BITUM/LOW'	Mixed bituminous/low
'53'	= 'BITUM PENETRAT'	Bituminous Penetration
'60'	= 'HIGH FLEXIBLE'	High flexible
'61'	= 'HIGH FLEX - 88+'	High flexible -- 1988 and later
'62'	= 'COMPOSITE:F/R'	Composite -- Flexible bitum over rigid pave.
'70'	= 'RIGID - PRE 1987'	Rigid pavement, 1986 and earlier
'71'	= 'HGH RGD-PLN JNTD'	High rigid - plain jointed
'72'	= 'HGH RGD-RNFD JND'	High rigid - reinforced jointed
'73'	= 'HGH RGD-CNTN RFD'	High rigid - continuously reinforced
'74'	= 'RGD-PRTLY BNDED'	Rigid over rigid bonded or partially bonded
'75'	= 'RGD-UNBNDED'	Rigid or rigid unbonded
'76'	= 'RGD-FLXBL'	Rigid over flexible
'80'	= 'BRICK/BLOCK/OTH'	Brick, block or other combination
OTHER	= 'ERROR/OTHER CODE'	

**NOTE:** Coding changed in 1988. Combine similar pre- and post-1988 codes in analyses. Rural and urban local roads have a higher percentage of uncoded mileage.

**TERRAIN            PREDOMINANT TERRAIN TYPE**

'0' = 'UNCODED'  
'1' = 'FLAT'                      Flat  
'2' = 'ROLLING'                  Rolling  
'3' = 'MOUNTAINOUS'              Mountainous  
OTHER = 'ERROR/OTHER CODE'

**NOTE:** This is one of several HPMS sample section variables retained on the file. Approximately 78% of rural and 99% of urban HSIS mileage is "uncoded."

**TOLL                TOLL**

'1' = 'NON-TOLL'  
'2' = 'TOLL'  
'3' = 'INSTAT TOLL'

**TYPE\_DEV           TYPE DEVELOPMENT**

'0' = 'NA'                        Not applicable  
'1' = 'RURAL'                     All area outside of Federal-aid urban boundaries (cities of 5,000 or more population)  
'2' = 'DENSE'                    Such as small town or areas in which major recreational facilities, such as parks, ski resorts, scenic overlooks, and rest areas - significant impact on traffic operation.

**NOTE:** This HPMS-related variable was added in 1991, and is primarily coded for rural sections. Even in rural sections, it is uncoded in over 70% of the mileage. Note that "0" can mean either "not applicable" or "uncoded."

**TYPE\_IMP           TYPE IMPROVEMENT**

'00' = 'NONE/UNCODED'           None/uncoded  
'10' = 'NEW ROUTE'                New route  
'20' = 'RELOCATION'                 Relocation  
'31' = 'RECNST TO FRWAY'           Reconstruction to freeway  
'32' = 'RECNST-MORE LNS'           Reconstruction with more lanes  
'33' = 'RECNST-WDN LNS'           Reconstruction to widen lanes  
'34' = 'RECNST-ALGNMENT'          Pavement reconstruction with alignment improvements  
'35' = 'PAVMNT RECNST'            Pavement reconstruction  
'40' = 'MAJOR WIDENING'           Major widening

(CON'T)

'50' = 'MINOR WIDENING'	Minor widening
'60' = 'RESTRT AND REH'	Restoration and rehabilitation
'71' = 'RESURF W CEMENT'	Resurfacing with shoulder improvements and Portland cement concrete pavement restoration
'72' = 'RESURF W BITUMNS'	Resurfacing with shoulder improvements and bituminous Resurfacing with
'77' = 'RESURF W CONCRTE'	Portland cement concrete pavement restoration
'78' = 'RESTOR/RESURF'	Resurfacing with bituminous pavement restoration

**NOTE:** This HPMS variable was added in 1991, and data are coded predominately for rural areas. Note that "00" can mean both "no improvement" or "uncoded". For HSIS sections where the Right-Of-Way variable (ROW) is "0", it can be assumed that "00" means "no improvement." An improvement is coded in the year in which it was completed, and remains on the file until replaced with another improvement code.

**URB\_LOC**

**URBAN LOCATION**

'0' = 'N/A'	Not applicable
'1' = 'CBD'	Central business district
'2' = 'HIGH DEN BUS/COM'	High density business/commercial center (excluding CBD)
'3' = 'LOW DENSITY COM'	Low density commercial
'4' = 'HIGH DENSITY RES'	High density residential
'5' = 'LOW DENSITY RES'	Low density residential
'6' = 'OTHER'	Other (undeveloped land and residential areas having a density of less than one dwelling unit per acre)
'F' = 'FRINGE (<'93)'	Fringe (Pre-1993 code)
'O' = 'OUT BS DST(<'93)'	Outlying Business District (Pre-1993 code)
'H' = 'RESDNTRL (<'93)'	Residential (Pre-1993 code)
'R' = 'RURL CHAR (<'93)'	Rural in character (Pre-1993 code)

**NOTE:** This HPMS-related variable is almost exclusively coded for urban sections. In urban locations, over 80% of the collector and local road mileage is uncoded.

**USE\_FLG**

**USE FLAG**

'0' = 'NON-FED SAMPLE'	State sample
'1' = 'FIRST FED RECD'	First record of a Federal sample

'9' = 'FED SAMPLE'                      Records which are part of a Federal  
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**NOTE:** This HPMS variable was added in 1991. When coded, it represents the sample status of the record.

**VERT\_ALN            VERTICAL ALIGNMENT ADEQUACY**

'0' = 'NOT REQUIRED'                      All other road sections  
 '1' = 'MEETS STANDRDS'                 Grades/curves meet design standards  
 '2' = 'BELOW STANDRDS'                 Grades/curves below design standards  
 '3' = 'INFRQNT GRD/CRV'                Infrequent grades/curves  
 '4' = 'POOR SIGHT DIST'                Grades/curves impair sight distance

**NOTE:** This HPMS-related variable was added to the file in 1991, and is coded "0" meaning "uncoded" for approximately 44% of the rural and 86% of the urban HSIS mileage.

**WD\_FEAS            WIDENING FEASIBILITY**

'1' = 'NO'  
 '2' = 'YES,< ONE LANE'                 Widening feasible for shoulders only  
 '3' = 'YES,ONE LANE'                    One lane could be added  
 '4' = 'YES,TWO LANES'                  Two lanes could be added  
 '5' = 'YES,> TWO LANES'                More than two lanes could be added

**NOTE:** New variable added in 1991.

**YR                    YEAR (4 DIGITS)**

NON-LABELED VARIABLE - YYYY

**NOTE:** Year of roadlog data. This variable is used in matching accidents from a given year with roadlog information for the same year.

LIST OF VARIABLES FOR UTAH CURVE FILE

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
BEGMP	BEGIN MILEPOST	Curve	NUM	I-91	
DEG_CURV	DEGREE OF CURVATURE	Curve	NUM	I-91	
DIR_CURV	DIRECTION OF CURVE	Curve	CHA(1)	I-91	
ENDMP	END MILEPOST	Curve	NUM	I-91	
RTE_NBR	UNIQUE ROUTE/BLOC DESIGN	Curve	CHA(6)	I-91	
SEG_LNG	SECTION LENGTH IN MILES	Curve	NUM	I-91	
YR	YEAR (4 DIGITS)	Curve	CHA(4)	I-92	



SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE  
UTAH CURVE FILE

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

**BEGMP            BEGIN MILEPOST**

NON-LABELED VARIABLE - Beginning of curve

**DEG\_CURV        DEGREE OF CURVATURE**

0            = 'ZERO'  
1 - 2        = '1 - 2'  
3 - 5        = '3 - 5'  
6 - 10       = '6 - 10'  
11 - 20      = '11 - 20'  
21 - 30      = '21 - 30'  
31 - 99      = '31 - 99'

**DIR\_CURV        DIRECTION OF CURVE**

'R', 'r' = 'RIGHT'  
'L', 'l' = 'LEFT'  
' ' = 'NOT CODED'  
OTHER = 'ERROR/OTHER CODE'

**ENDMP            END MILEPOST**

NON-LABELED VARIABLE - End of curve

**RTE\_NBR         UNIQUE ROUTE/BLOC DESIGN**

NON-LABELED VARIABLE

**NOTE:** Six characters. "A" in first position designates a State-controlled route.

**SEG\_LNG         SECTION LENGTH IN MILES**

NON-LABELED VARIABLE - XXX.XX

YR

YEAR (4 DIGITS)

NON-LABELED VARIABLE - YYYY

**NOTE:** Year of Curve data. This variable is used in matching the curve data to the corresponding year's Accident, Roadlog, or Grade files.



LIST OF VARIABLES FOR UTAH GRADE FILE

<u>SAS</u> <u>VARIABLE</u> <u>NAME</u>	<u>DESCRIPTION</u>	<u>FILE</u>	<u>SAS</u> <u>VARIABLE</u> <u>TYPE</u>	<u>FORMAT</u> <u>PAGE NO.</u>	<u>TABLE</u> <u>PAGE NO.</u>
BEGMP	BEGIN MILEPOST	Grade	NUM	I-95	
CAPACITY	CAPACITY	Grade	NUM	I-95	
DIR_GRAD	DIRECTION OF GRADE	Grade	CHA(1)	I-95	
ENDMP	END MILEPOST	Grade	NUM	I-95	
PCT_GRAD	PERCENT OF GRADIENT	Grade	NUM	I-95	
RTE_NBR	UNIQUE ROUTE/BLOC DESIGN	Grade	CHA(6)	I-95	
SEG_LNG	SECTION LENGTH IN MILES	Grade	NUM	I-95	
YR	YEAR (4 DIGITS)	Grade	CHA(4)	I-96	



SAS FORMAT DEFINITIONS FOR VARIABLES FROM THE  
UTAH GRADE FILE

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

**BEGMP            BEGIN MILEPOST**

NON-LABELED VARIABLE - Beginning of grade

**CAPACITY        CAPACITY**

NON-LABELED VARIABLE

**DIR\_GRAD        DIRECTION OF GRADE**

'+' = 'UPGRADE'

'-' = 'DOWNGRADE'

**ENDMP            END MILEPOST**

NON-LABELED VARIABLE - End of grade

**PCT\_GRAD        PERCENT OF GRADIENT**

0            = 'ZERO'

1 - 2        = '1% - 2%'

3 - 5        = '3% - 5%'

6 - 8        = '6% - 8%'

9 - 10       = '9% - 10%'

11 - 15      = '11% - 15%'

**RTE\_NBR        UNIQUE ROUTE/BLOC DESIGN**

NON-LABELED VARIABLE

**NOTE:** Six characters. "A" in first position designates a State-controlled route.

**SEG\_LNG        SECTION LENGTH IN MILES**

NON-LABELED VARIABLE - XXX.XX

**YR**

**YEAR (4 DIGITS)**

NON-LABELED VARIABLE - YYYY

**NOTE:** Year of Grade data. This variable is used in matching the grade data to the corresponding year's Accident, Roadlog, or Curve files.