

Documentation, Data Dictionary, and User's Guide

State of New Mexico Traffic Crashes for 1995 and 1996
ArcView 2.1 Demonstration
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Conducted for the New Mexico Traffic Safety Bureau
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This project illustrates various traffic crash data for the state of New Mexico for the years 1995 and 1996 using ArcView 2.1 for PCs. This PC version of ArcView demonstrates itself to be a useful tool for local agencies and individuals that need better access to traffic crash data. The facilities present in ArcView 2.1 together with the relative ease of using this software should allow casual and unsophisticated users easy access to traffic crash and other geographically oriented data.

The major roads maintained by the New Mexico State Highway and Transportation Department (NM SH & TD) were selected for this demonstration. Thus, persons interested in traffic crash data for 1995 and/or 1996 will be able to find information not only at the state level but also for specific regions, roads, counties, cities, or towns using the magnification tool or query tool available in ArcView 2.1. In addition to traffic crash data, the user will also find county boundaries, some city and town locations, roads, land areas (such as state parks, Indian reservations, national forests, and urban areas), and annotation (such as road names, city and town names, and county names) available for display. A series of examples have been prepared that illustrate the capabilities of ArcView 2.1 to query, analyze, and display this data. These examples can be manipulated by users to suit their specific desires and needs.

All data was first created or manipulated in SAS and ARC/INFO. The data was transferred to ArcView using specialized SAS Macros that write ARC/INFO IMPORT/EXPORT format files. ArcView converts ARC/INFO coverages into binary and DBASE files on the PC.

This documentation describes the contents and organization of the data included in the demonstration of traffic crash data for the state of New Mexico for 1995 and 1996. It is intended as a reference guide and data dictionary for the user who has questions regarding this data. The ArcView 2.1 manual or ArcView help screens should be consulted for information about using ArcView 2.1. The manual and/or on-line tutorial will allow the new user to become proficient with ArcView 2.1 with minimum effort.

Data Dictionary

Boundary Geography

The boundary geography for this project was digitized in 1982 using a 1:500K state of New Mexico base map. The boundary coverage that was produced contains information for boundaries (arcs) that separate two counties or a New Mexico county from another state (as opposed to a polygon that composes a complete county). This ArcView coverage is contained in a directory called BOUND. The data variables you will find useful are contained in the arc-based AAT.DBF file within the BOUND directory. The variables are as follows:

| <u>Variable</u> | <u>Format</u> | <u>Description</u> |
|-----------------|---------------|---|
| FNODE | 4 5 B | From-node number |
| TNODE | 4 5 B | To-node number |
| LPOLY | 4 5 B | Polygon number to the left of arc |
| RPOLY | 4 5 B | Polygon number to the right of arc |
| LENGTH | 4 12 F 3 | Length of arc |
| BOUND# | 4 5 B | Internal sequence ID number |
| BOUND-ID | 4 5 B | Feature ID number |
| FEATNO | 4 6 B | Feature number from DGR's GRNDB system |
| TYPE | 4 5 B | Type of boundary |
| NAME | 25 25 C | Names of the 2 NM counties or NM county/state border that comprise a boundary |

Road Geography

As above, the road geography for this project was digitized in 1982 using a 1:500K state of New Mexico base map. This data was then converted into an arc-based ARC/INFO format before being formatted once again for use in ArcView 2.1. This ArcView coverage is contained in a directory called ROAD. The data variables contained in the arc-based AAT.DBF file in the ROAD directory are as follows:

| <u>Variable</u> | <u>Format</u> | <u>Description</u> |
|-----------------|---------------|--|
| FNODE | 4 5 B | From-node number |
| TNODE | 4 5 B | To-node number |
| LPOLY | 4 5 B | Polygon number to the left of arc |
| RPOLY | 4 5 B | Polygon number to the right of arc |
| LENGTH | 4 12 F 3 | Length of arc |
| ROAD# | 4 5 B | Internal sequence ID number |
| ROAD-ID | 4 5 B | Feature ID number |
| FEATNO | 4 6 B | Feature number from DGR's GRNDB system |
| TYPE | 4 5 B | Type code from DGR's GRNDB system |
| SYSTEM | 4 6 B | System code for roads from ALCG |
| ROUTE | 4 6 B | Administrative route code from ALCG |
| SPUR | 4 5 B | Spur code, if used |
| MILEPT | 4 12 F 3 | Start mile from ALCG |
| ENDMILE | 4 12 F 3 | End mile from ALCG |
| NAME | 25 25 C | Name of road |
| SMILE | 4 12 F 3 | Start mile from CHDB |
| EMILE | 4 12 F 3 | End mile from CHDB |
| SHDID | 4 5 B | Link to CHDB |
| SHDRROUTE | 9 9 C | CHDB route |
| COUNTY | 4 5 B | NM county code |

Note: ALCG - Accident Location Coding Guide (Administrative System)
CHDB - NM SH & TD's Consolidated Highway Data Base
GRNDB - DGR's Geographic Road Network Data Base

Crash Data

Crash data for calendar years 1995 and 1996 were derived from SAS files maintained by DGR and New Mexico Traffic Safety Bureau (NMTSB). A point-based ARC/INFO coverage was produced for each of these years and then converted for use in ArcView 2.1. The comprehensive crash coverage that was produced contains one record for each route location (ROUTE, SYSTEM, SPUR, MILEPT) at which crashes occurred. Thus, there can be more than one crash at a given route location. These ArcView coverages are contained in directories called CRASH95S and CRASH96S. They contain all the data items present in the crash file. These coverages are useful for obtaining all the information about specific crashes using the table facility in ArcView 2.1.

The data variables contained in CRASH95S and CRASH96S are as follows:

| <u>Variable</u> | <u>Format</u> | <u>Description</u> |
|-----------------|---------------|--------------------------------|
| AREA | 4 12 F 3 | Area - 0.0 for point data |
| PERIMETER | 4 12 F 3 | Perimeter - 0.0 for point data |

| | | |
|------------|---------|---|
| CRASH9XS | 4 5 B | Internal ID number |
| CRASH9XS-I | 4 5 B | Feature ID number |
| TSBROUTE | 4 4 C | TSB administrative route code (from ALCG) |
| MILELOG | 4 7 F 2 | Mile log of crash location (from GRNDB) |
| SYSTEM | 4 5 B | System code for roads (from ALCG) |
| ROUTE | 4 5 B | Administrative route code - (from ALCG) |
| SPUR | 4 5 B | Spur code, if used (from ALCG) |
| MILEPT | 4 7 F 2 | Milelog location of crash (from ALCG) |
| ASTREET | 30 30 C | First intersecting street name |
| BSTREET | 30 30 C | Second intersecting street name |
| FATAL | 4 5 B | Number of crashes where SEVERITY equals 1 |
| KILLED | 4 5 B | Total number of occupants killed in crashes |
| CLASSA | 4 5 B | Number of class A injuries in crashes |
| CLASSB | 4 5 B | Number of class B injuries in crashes |
| MCINV | 4 5 B | Location of motorcycle involved crash(es) |
| OCCTOT | 4 5 B | Total number of occupants for all crashes |
| ALC | 4 5 B | Number of accidents where alcohol involvement is greater than 0 |
| FI | 4 5 B | Number of fatal and injury crashes |
| PDO | 4 5 B | Number of property damage only crashes |
| MORN | 4 5 B | Number of crashes b/w 6:00am and 8:59am |
| DAY | 4 5 B | Number of crashes b/w 9:00am and 2:59pm |
| EVE | 4 5 B | Number of crashes b/w 3:00pm and 5:59pm |
| NIGHT | 4 5 B | Number of crashes b/w 6:00pm and 5:59am |
| ANGLE | 4 5 B | Angle crashes as defined by analysis in crash report |
| PED | 4 5 B | Number of pedestrians involved in crashes |
| TOTAL | 4 5 B | Total number of crashes at a route location |

Note: More information about the traffic crash data can be found in the Accident Level Analysis File documentation (PDF format) on DGR's web page (www.unm.edu/~dgrint/accf.html).

Annotation Geography

The annotation geography for this project was created using ARC/INFO coverages that were then converted to ArcView 2.1. These ArcView coverages are contained in 3 directories called ANBOUND, ANPOINT, and ANROAD. County name annotation exists in ANBOUND, city name and New Mexico land name annotation exists in ANPOINT, and road name annotation exists in ANROAD. The variables you will find useful are contained in ANBOUND and ANROAD as arc-based AAT.DBF files while the relevant variables in ANPOINT exist as point-based PAT.DBF files within that directory. They are as follows:

ANBOUND's AAT.DBF file:

| <u>Variable</u> | <u>Format</u> | <u>Description</u> |
|-----------------|---------------|---|
| FNODE | 4 5 B | From-node number |
| TNODE | 4 5 B | To-node number |
| LPOLY | 4 5 B | Polygon number to the left of arc |
| RPOLY | 4 5 B | Polygon number to the right of arc |
| LENGTH | 4 12 F 3 | Length of arc |
| ANBOUND# | 4 5 B | Internal sequence ID number |
| ANBOUND-ID | 4 5 B | Feature ID number |
| FEATNO | 4 6 B | Feature number from DGR's GRNDB system |
| TYPE | 4 5 B | Type of border |
| NAME | 25 25 C | Names of the 2 NM counties or NM county/state border that comprise a boundary |

ANPOINT's PAT.DBF file:

| <u>Variable</u> | <u>Format</u> | <u>Description</u> |
|-----------------|---------------|-------------------------------------|
| AREA | 4 12 F 3 | Area - 0.0 for point data |
| PERIMETER | 4 12 F 3 | Perimeter - 0.0 for point data |
| ANPOINT# | 4 5 B | Internal sequence ID number |
| ANPOINT-ID | 4 5 B | Feature ID number |
| NAME | 30 30 C | Name of city, town, or NM land area |
| CITY | 4 5 B | Annotation code number for above |

ANROAD's AAT.DBF file:

| <u>Variable</u> | <u>Format</u> | <u>Description</u> |
|-----------------|---------------|--|
| FNODE | 4 5 B | From-node number |
| TNODE | 4 5 B | To-node number |
| LPOLY | 4 5 B | Polygon number to the left of arc |
| RPOLY | 4 5 B | Polygon number to the right of arc |
| LENGTH | 4 12 F 3 | Length of arc |
| ANROAD# | 4 5 B | Internal sequence ID number |
| ANROAD-ID | 4 5 B | Feature ID number |
| FEATNO | 4 6 B | Feature number from DGR's GRNDB system |
| TYPE | 4 5 B | Type code from DGR's GRNDB system |
| SYSTEM | 4 6 B | System code for roads from ALCG |

| | | |
|----------|----------|-------------------------------------|
| ROUTE | 4 6 B | Administrative route code from ALCG |
| SPUR | 4 5 B | Spur code, if used |
| MILEPT | 4 12 F 3 | Start mile from ALCG |
| ENDMILE | 4 12 F 3 | End mile from ALCG |
| NAME | 25 25 C | Name of road |
| SMILE | 4 12 F 3 | Start mile location from CHDB |
| EMILE | 4 12 F 3 | End mile location from CHDB |
| SHDID | 4 5 B | Link to CHDB |
| SHDROUTE | 9 9 C | CHDB route |
| COUNTY | 4 5 B | NM county code |

Land Use Geography

The land use geography for this project was digitized in 1982 using a 1:500K state of New Mexico base map. These ArcView coverages are contained in 2 directories called AREA and AREA2. The variables you will find useful exist as polygon-based PAT.DBF files within those directories. They are as follows:

AREA and AREA2's PAT.DBF files

| <u>Variable</u> | <u>Format</u> | <u>Description</u> |
|-----------------|---------------|-----------------------------------|
| AREA | 4 12 F 3 | Area of polygon |
| PERIMETER | 4 12 F 3 | Perimeter of polygon |
| AREA(2)# | 4 5 B | Internal sequence ID number |
| AREA(2)-ID | 4 5 B | Feature ID number |
| DIGID | 4 5 B | ID from DGR's GRNDB system |
| FEATNO | 4 6 B | Feature from DGR's GRNDB system |
| TYPE | 4 5 B | Type Code from DGR's GRNDB system |
| NAME | 25 25 C | Name of NM land area |