State of Minnesota

HIGHWAY SAFETY PROGRAM

Annual Evaluation Report

Fiscal Year 1985

June 1985

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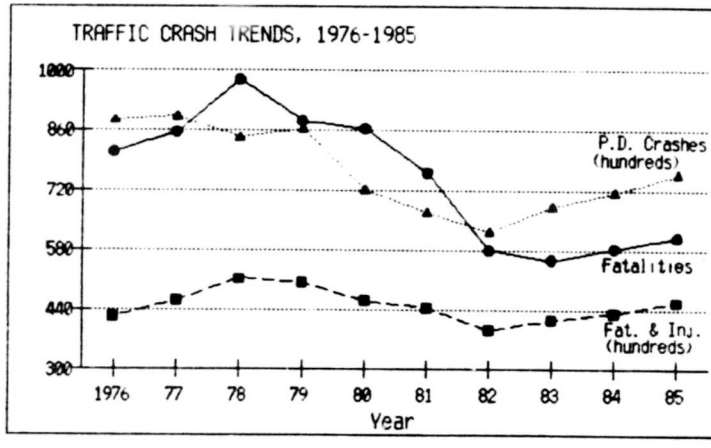
STATEWIDE OVERVIEW

The motor vehicle accident picture in Minnesota in 1985 portrayed a mixture of record-breaking accomplishments and areas of concern.

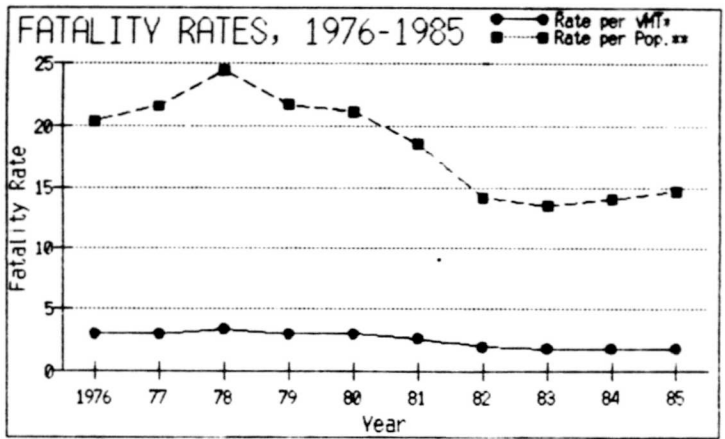
In the past ten years, traffic accident statistics have shown marked improvement. Fatalities have dropped from a high of 980 in 1978 to a low of 558 in 1983, a 44 percent reduction. Total injuries and crashes have also decreased, although not by such a large margin. These changes have occurred despite an increase in vehicular miles traveled and licensed drivers. Fatalities increased by four and one-half percent each of the past two years. However, this occurred after five consecutive years of fatality reductions. The 610 fatalities in 1985 compares to 584 in 1984 and is nine percent lower than the average of the previous five years. The number of crashes and injuries also increased over 1984 by six percent each.

The increase in fatalities was seen mainly in special categories other than motor vehicle occupants. The number of motor vehicle occupants remained almost exactly the same as in 1984, while pedestrian and motorcycle fatalities increased.

The following graphs represent trends in selected categories of accidents over the past five to ten years:

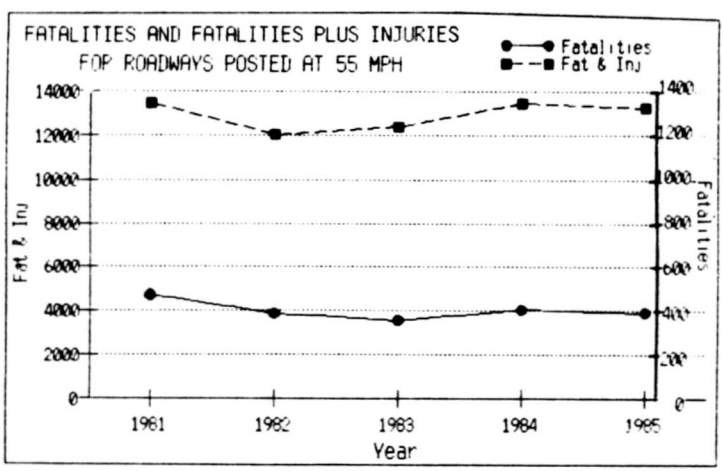


As shown above, all three categories -- fatalities, fatalities plus injuries, and property damage crashes show similar ten-year patterns. The general trend has been downward in all three with slight increases in each of the last two years.

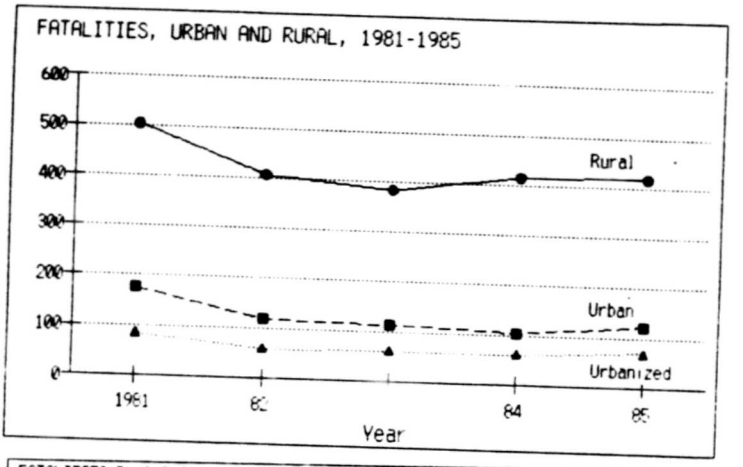


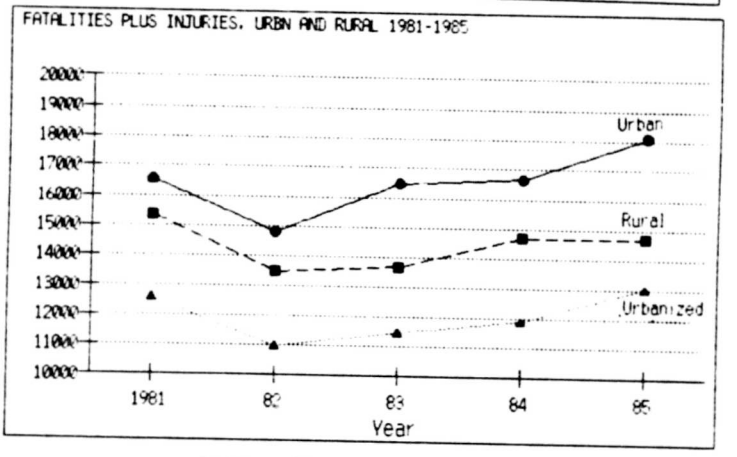
*Rate per VMT = Fatalities per 100,000,000 VMT
**Rate per Pop. = Fatalities per 100,000 Population

The fatality rate per 100,000 population has followed a similar pattern to total fatalities and crashes as shown on the previous graph. However, the fatality rate per vehicle miles traveled has very slowly but steadily declined over the past ten years.



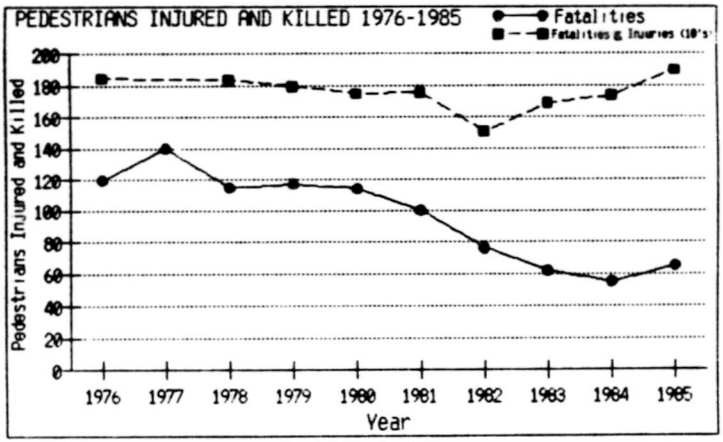
For roadways posted at 55 miles per hour, both fatalities and fatalities plus injuries have remained fairly steady over the last five years. Fatalities averaged approximately three percent of the combined total of fatalities and injuries during this period.



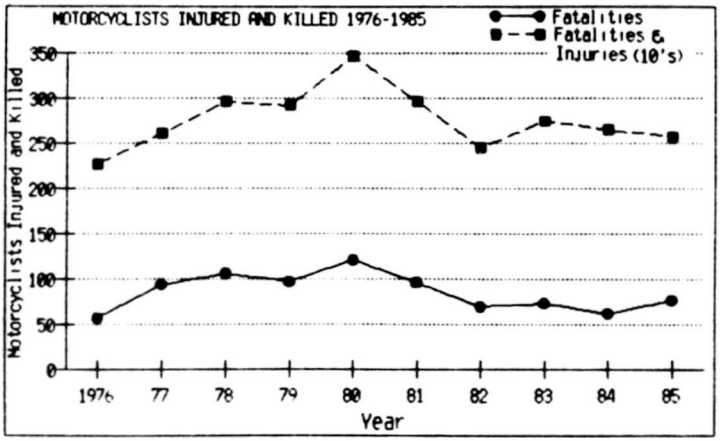


RURAL = <5,000 population
URBAN = <50,000 population and >5,000
URBANIZED = >50,000 population

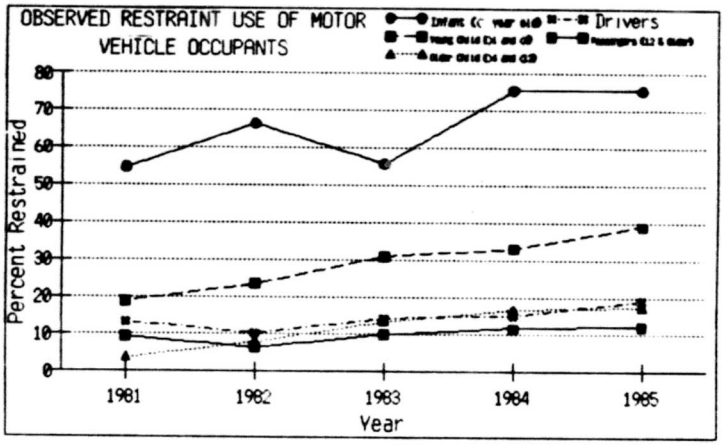
As usual, rural roads accounted for more fatalities than urban and urbanized roads, and urban roads had more combined injuries and fatalities. Notice that the large urbanized cities have the fewest of both fatalities and combined fatalities and injuries.



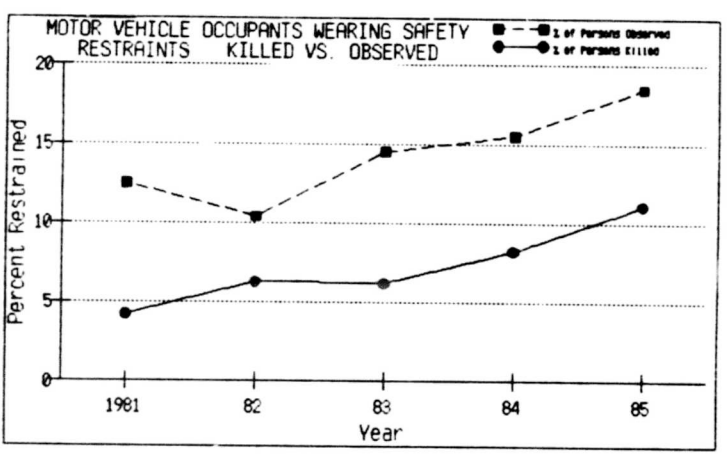
Pedestrian fatalities have dropped substantially in the past ten years--from 140 in 1977 to 65 in 1985. Although the 65 fatalities represent an 18 percent increase over 1984, the total is 20 percent lower than the average of the previous five years. The number of pedestrian fatalities and injuries combined decreased gradually from 1976 to 1982 and then began increasing. By 1985, this figure reached a level exceeding the total found in 1976.



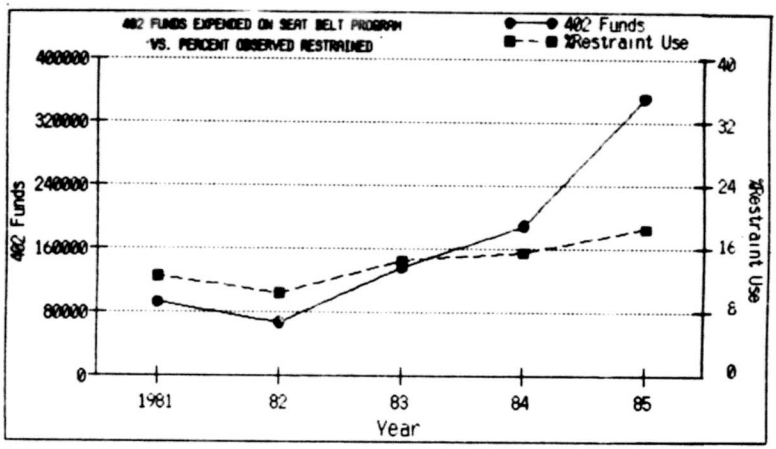
Motorcyclist injuries and fatalities have dropped markedly in the past five years. Prior to 1980, they had been steadily increasing. Although fatalities increased in 1985 over 1984 by 26 percent, the 1985 fatality total of 77 is nine percent lower than the average of the previous five years. Motorcyclist injuries declined from 1984 to 1985 by three percent. Total injuries in 1985 represent a ten percent decline from the average of the previous five years.



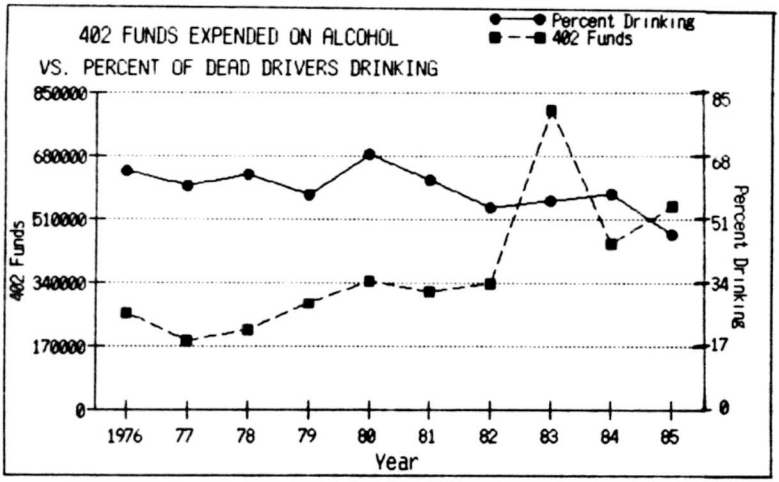
In the past five years, observed restraint use for motor vehicle occupants has increased significantly for all age categories. The most dramatic increases occurred for infants (from 54.5 percent restrained in 1981 to 75.5 percent in 1985) and children under four years old (from 18.8 percent restrained in 1981 to 39 percent in 1985).



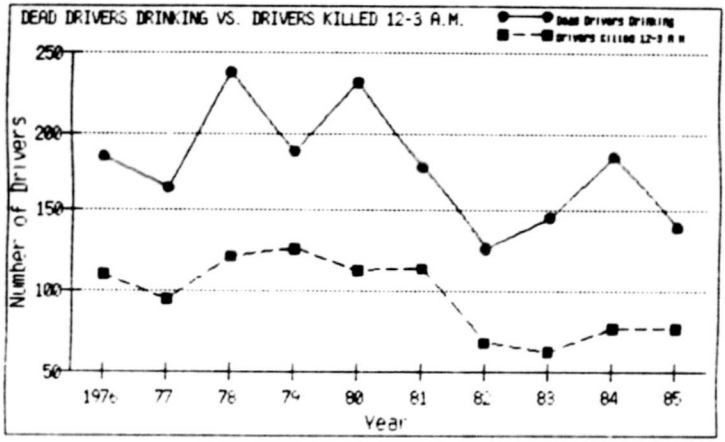
With the exception of 1982, when the percentage of persons observed wearing seat belts dropped, restraint use of persons killed and restraint use of persons observed have followed the same gradual increasing trend. However, restraint use of fatalities (4.2 percent restrained in 1981 compared to 11.1 percent in 1985) is significantly lower than total persons observed (12.5 percent restrained in 1981 compared to 18.5 percent in 1985).



The trend lines representing 402 funds experded and percentages of people restrained (observed) have changed in basically the same manner--from a five-year low in 1982 to the highest level in 1985.



One of the record-breaking accomplishments in 1985 was the lowest percentage ever of drivers killed who had been drinking -- 47 percent. This was a significant decrease from the 58 percent in 1984 and from the previous five-year average of 60 percent.



The pattern of drivers killed between midnight and 3:00 a.m. resembles that of drinking drivers killed at any time of day. The number of drivers killed during this three-hour nighttime period has averaged about 55 percent of the number of drivers killed who had been drinking.

STATE OF MINNESOTA
TRAFFIC CRASH TRENDS
1980 - 1985

	1980	1981	1982	1983	1984	1980-1984 Average	1985	Record High
Total Crashes	103,612	97,897	89,443	97,371	101,554	97,972	107,675	123,106 (1975)
Injuries	45,227	43,739	38,692	41,086	42,654	42,280	45,205	50,332 (1978)
Total Fatalities	863	763	581	558	584	670	610	1,060 (1968)
Pedestrian	114	100	76	62	55	81	65	157 (1971)
Mv/Train	15	15	7	15	11	13	13	62 (1932)
Bicycle	19	9	12	14	15	14	10	24 (1977)
Motorcycle	121	85	70	66	62	81	77	121 (1980)
3-wheel Vehicle	N.A.	N.A.	2	9	^	-	1	9 (1983)
Snowmobile	5	3	1	4	9	4	3	N.A.
Motor Vehicle Occupants	576	558	415	398	430	475	441	N.A.
Fatality Rate**	3.03	2.67	1.98	1.86	1.81	2.27	1.84	13.6 (1934)
U.S. Fatality Rate	3.48	3.29	2.89	2.70	2.68	3.01	2.58	18.0 (1925)
Economic Loss (millions)	$395.0	$398.0	$366.4	$393.3	$443.9	$399.3	$480.9	1985

**Rate is based upon per 100 million vehicle miles of travel
N.A. = Not available

TRAFFIC SAFETY LEGISLATION ENACTED

The following legislation relating to traffic safety was enacted by the 1985 legislative session:

Chapter 310 - Seat Belt Law

Requires that seat belts be worn by occupants of the front seat and by passengers under age 11 in any seat of passenger vehicles. Provides there be no fine, but only a safety warning and that violations will not be recorded on the driver's record. Provides exemptions to the law for driving in reverse; when there are not enough seat belts for all passengers; for medical reasons; for vehicles with frequent stops for work; for rural mail carriers; for vehicles manufactured before 1965 and for persons in pickup trucks while performing farm work. Intent of the law is that it not be used in any manner to rescind Federal automatic crash protection system requirements for new vehicles.

Effective August 1, 1986

Chapter 330 - 21 Year Old Drinking Age

Increases the drinking age to 21 years old. Grandfathers in those persons who are, or will be, 19 years old before September 1, 1986. Provides that court records for 18-to-20-year olds who are convicted of a violation will not be open to the public. Requires Department of Public Safety to furnish information on the effects of alcohol on driving to driver license applicants. Provides that the driver manual published by the Department include a chapter on the effect of alcohol consumption on highway safety, the impairment of drivers and a summary of the DWI laws. Prohibits liquor wholesalers and retailers from conducting or contributing to activities held on college campuses that involve consumption of alcoholic beverages.

Effective September 1, 1986

Provides that 25 percent of the $150 driver license reinstatement fee will be credited to the Alcohol Impaired Driver Education Account administered by the Commissioner of Education for grants to school programs.

Effective July 1, 1987

Chapter 388 - Crime Against Unborn Child

Makes it a felony to cause the death or injury to an unborn child by operating a motor vehicle in a negligent manner. Creates crimes of murder of unborn child in the first, second and third degree and manslaughter in the first and second degree. Imposes penalties.

Effective August 1, 1986

Chapter 452 - All Terrain Vehicles

Gives Commissioner of Public Safety discretionary rulemaking authority on regulation of all terrain vehicles (ATV) on streets and highways. Makes it unlawful for an ATV operator to disregard signal from a law enforcement officer to stop or flee the officer. Provides for certain restrictions on youthful operators such as crossing highways and requiring helmets. Allows Commissioner of Public Safety to suspend a minor's driver license for ATV violations on the recommendation of a judge. Places restrictions on operation of an ATV on streets and highways. Provides that the Highway Traffic Regulation Act applies to operation of an ATV streets and highways except for provisions relating to required equipment. Provides that persons operating an ATV while under the influence of alcohol or a controlled substance is punishable in accordance with the DWI laws. Provides for a four-wheel ATV to be operated on roadways by persons with special handicap permits. Exempts a four-wheel ATV from provisions of the driver licensing laws.

Effective August 1, 1986

Chapter 454 - Proof of Insurance and Speed Violations

Requires drivers to have proof of vehicle insurance in possession at all times. Provides that Commissioner of Public Safety may suspend the driver's license of a person violating this requirement. Exempts commercial vehicles and school buses. Allows cities to provide system to permit emergency vehicle operators to activate green traffic signal. Provides that traffic tickets provide a space for specifying whether the speed was greater than 10 mph in excess of the speed designated under Section 169.141 (55 mph fuel conservation law). Provides that the Department of Public Safety shall not record a violation of the 55 mph law unless the speed was greater than 10 mph in excess of the speed limit.

Effective July 1, 1986

Chapter 474 - State Patrol Quotas

Prohibits the State Patrol from requiring a trooper to issue a certain number of traffic citations.

Effective August 1, 1986

Chapter 1, Article 9 of Special Session Laws

Exempts eligibility for school bus driver licenses from the provisions of Chapter 364 of Minnesota Statutes which deals with the rehabilitation and employment of criminal offenders.

Effective day following enactment.

S.F. 1 - Special Session Laws

Provides that a school bus may be equipped with a red flashing signal, audible warning signal and green all-clear signal and may use it when the stop arm is in use.

Effective day following enactment.

MATERIALS SENT TO NHTSA - CHICAGO OFFICE

FISCAL YEAR 1985

Date Mailed	Report Date	Description of Material
6-13-85	6-11-85	Minnesota Supreme Court Decision - DWI (Right to consult with counsel)
7-19-85	5-23-85	Air Ambulance Operations Workshop Minnesota Department of Health
10-18-85	10-4-85	ABC Newspaper Article on DWI Roadblocks (Tri-City Project)
10-22-85	Sept. 1985	Minnesota Criminal Justice System DWI Task Force Newsletter
10-25-85	Sept./Oct. 1985	Traffic Safety Magazine Article: Hennepin County2-day Sentencing Policy
10-25-85	Oct. 1985	MV/Train Crash Data Analysis - 1984
11-7-85	11-6-85	St. Paul Pioneer Press & Dispatch Article on DWI in Anoka County
11-21-85	Sept. 1985	Kids Teaching Kids Curriculum Guide
11-22-85	Sept. 1985	Minnesota Alcohol Roadside Survey - Final Report
11-22-85	Sept. 1985	DWI Prosecutor's Update - County Attorneys Association
11-22-85	Aug. 1985	Minnesota Traffic Code (as amended through 1985)
11-22-85	Sept. 1985	Review of Minnesota DWI Research 1980-1985 by DWI Task Force
2-21-86	Jan. 1986	Department of Administration 9-1-1 Report to Legislature
2-24-86	1985	Safety Restraint and Helmet Use Study

PROJECT TITLE:	Data Collection, Processing, Analysis and Distribution
PROJECT NUMBER:	85-01-01
FEDERAL FUNDS OBLIGATED:	$190,000.00
FEDERAL FUNDS EXPENDED:	$118,231.23

The purpose of this project was to provide funding for the data analysis that is necessary for problem identification and program evaluation. These costs included computer time, salaries, fringe benefits, and indirect costs for a Research Analyst and a Traffic Records Coordinator, and education and travel costs for the two staff positions. Funds were used to upgrade the SIR software that is used to analyze the accident data and to provide training in the use of that software for 15 state employees.

This project also involved producing an instruction manual for the new accident report form and a series of training sessions for local police officers in the use of the new form. About 40 sessions were held this fiscal year and approximately 1,000 officers were trained.

Although money was budgeted for the purchase of a computer terminal and printer, these purchases were not made in this fiscal year. Lack of staff time prevented us from developing a quarterly accident records newsletter during FY 85, but that activity was begun in FY 86.

PROJECT TITLE:	Traffic Records Administration
PROJECT NUMBER:	85-01-02
FEDERAL FUNDS OBLIGATED:	$418,700.00
FEDERAL FUNDS EXPENDED:	$388,275.50

The purposes of this project were to improve Minnesota's driver license record system, to complete the implementation of the Traffic Records Integration Project (TRIP), to improve the integrity of the accident records data base, to provide local agencies with useful and timely summaries of accident statistics, to conduct a DWI recidivism study and to program an interconnection with the NDR.

In September 1985, the driver license data base conversion was completed and TRIP was fully implemented. This signalled the end of a six-year systems development effort which, although it was long and occasionally seemed chaotic, resulted in a traffic records database which is vastly improved over the pre-TRIP database.

A research analyst was hired to conduct the DWI recidivism study and to investigate the integrity of the accident records database. Because of difficulties in hiring this individual (he did not start until May 1985), neither project was completed in FY 85. Both projects were continued into FY 86.

Seven communities in Minnesota were contacted in an effort to provide summary accident statistics; reports were actually provided to five communities. Unfortunately, the information provided was too in-depth (and, thus, too costly) to be provided to more communities. The concept of providing local governments with accident information that is useful to them is too sound an idea to abandon after this year's effort; however, a new approach needs to be found to balance the number of communities aided with the cost of providing the data. (A FY 86 project will research the possibility of providing software for locals so that they can run their own reports.)

Because no programmer analyst was available to work on the project, the NDR interconnection was not accomplished this year. Plans have been made to do this in FY 86.

EMERGENCY MEDICAL SERVICES

PROJECT TITLE: Statewide Emergency Medical Services Program

PROJECT NUMBER: 85-02-01

FEDERAL FUNDS OBLIGATED: $182,800

FEDERAL FUNDS EXPENDED: $159,362.82

LOCAL/STATE FUNDS EXPENDED: $308,487.77

Task 1 - Plan and Administer Program

The Department of Health co-sponsored and participated in an EMS management conference attended by 300 ambulance personnel. It also participated in another EMS conference attended by 400 Minnesota ambulance personnel. An ad hoc advisory committee completed work on an examination of primary service area issues. Efforts were successful in having special state funding appropriated for regional EMS projects. Three new advanced life support helicopter ambulance services were licensed. The federally funded medical director was made a state funded position effective July 1, 1985.

Task 2 - Train Ambulance Personnel

During the year a total of 7,120 first responders and ambulance personnel were certified or recertified by the Department of Health as follows:

Type of Training	Planned	Accomplished
Certify first responders	1,500	1,686
Recertify first responders	750	1,099
Certify basic EMTs	2,300	1,402
Recertify basic EMTs	2,000	2,421
Certify intermediate EMTs	100	109
Recertify intermediate EMTs	50	50
Certify paramedics	100	54
Recertify paramedics	200	299
Advanced Trauma Life Support*	30	18

*The first pre-hospital ATLS course ever conducted in Minnesota was held in Duluth during the quarter for pilot testing and the course has been refined based on this experience.

Task 3 - Retain Radio Engineer Consultant

Radio engineering consulting services (through a contract with the Minnesota Department of Transportation) were made available at no charge to local EMS providers to assist in the processing of requests for licensure variances

submitted by life support transportation services; on-site and telephone consultation was also provided regarding technical issues and FCC frequency coordination. Effective July 1, 1985 this consulting service was transferred from federal to state funding.

Task 4 - Train EMS Dispatchers

A vendor was selected to produce and pilot test a Minnesota EMS Dispatcher training program based upon the curriculum developed by the National Highway Traffic Safety Administration. Existing EMS Dispatcher training programs were surveyed and an outline of course objectives was developed with input from a special advisory group.

Task 5 - Develop Air Ambulance Standards

A review was made of existing federal and state air ambulance standards and guidelines. Staff attended a national helicopter ambulance conference. A steering committee was convened to provide input on the development of helicopter response protocols. A draft was completed of proposed air ambulance guidelines during the fourth quarter.

EVALUATION OF EFFECTIVENESS

Table 1 below provides data for the period of 1977 through 1985 on fatalities, injuries and ratios as well as calculating a special fatality rate. As can be seen, fatalities increased by 26 over the previous year while serious injuries declined slightly thus resulting in a slight decrease in the ratio of fatalities to serious injuries. However, the ratio of fatalities to total injuries improved slightly to 1:75.1 which is the highest in the history of the EMS program. Also, fatalities as a percentage of all injuries and fatalities resulted in a slight decrease to 1.33 percent which is also the record low.

Table 1
Ratio of Injuries to Fatalities
Minnesota 1977 - 1985

Year	Fatalities	Serious Injuries	Fatalities to Serious Injuries	Total Injuries (Includes Fatalities)	Ratio of Fatalities to Total Injuries	Fatality Rate*
1985	610	6,454	1:10.6	45,815	1:75.1	1.33%
1984	584	6,573	1:11.3	43,238	1:74.0	1.35%
1983	558	5,996	1:10.8	41,644	1:74.6	1.34%
1982	581	5,776	1:9.9	39,273	1:67.6	1.48%
1981	763	6,961	1:9.1	43,739	1:57.3	1:71%
1980	863	7,469	1:8.7	45,227	1:52.4	1.87%
1979	881	8,369	1:9.5	49,604	1:56.3	1.75%
1978	980	8,965	1:9.2	50,332	1:51.4	1.91%
1977	856	8,557	1:10.0	45,200	1:52.8	1.86%

*Fatalities as a percentage of all injuries and fatalities

Table 2 shows fatality rates for the eight EMS planning regions in the state and compares the 1985 rates with the average for the 1978-1984 period. The table illustrates the significant disparities between regions which continue to exist with the metropolitan region having the lowest rates. It should be noted that, with one exception, all of the rates for 1985 are below the previous six-year average.

Table 2
Motor Vehicle Fatality Rates
By Minnesota EMS Planning Region
1978-84 Averages and 1985

EMS Planning Region	Fatalities per 100,000 Population 1978-84 Average	1985	Fatalities per 1000 Crashes 1978-84 Average	1985	Fatalities per 100 Total Injuries 1978-84 Average	1985
Northwest	27.2	23.7	15.8	14.7	3.4	2.7
Northeast	21.6	18.9	11.6	11.9	2.6	2.5
Metro	12.0	9.4	3.9	2.8	0.9	0.7
Westcentral	24.5	14.3	10.0	7.4	2.8	1.6
Southcentral	19.0	18.5	8.5	8.7	2.1	2.1
Southwest	23.6	21.4	12.5	12.9	3.0	2.7
Southeast	21.8	16.8	9.4	7.2	2.2	1.7
Central	30.6	25.8	14.0	11.8	2.9	2.4
State Total	18.3	15.0	7.1	5.7	1.7	1.3

PROJECT TITLE:	9-1-1 Emergency Telephone System
PROJECT NUMBER:	81-02-04
FEDERAL FUNDS OBLIGATED:	$125,600.00
FEDERAL FUNDS EXPENDED:	$ 39,987.59
LOCAL/STATE FUNDS EXPENDED:	$ 50,078.90

This project was begun in Fiscal Year 1981 and was extended annually through Fiscal Year 1985. It was incorporated in the Fiscal Year 1986 Highway Safety Plan as project number 86-06-02. The reason for this lengthy continuation is the time it takes to develop the plans and specifications, manufacture the equipment, and have it installed and debugged before a local 9-1-1 system can become operational. For this reason, no additional Federal funds have been committed since F.Y. 81 and requests for more funding have been denied. Based on the annual report submitted by the Department of Administration (Telecommunications Office) to the Minnesota Legislature for calendar year 1985, the following significant developments took place:

* About 250,000 more citizens had 9-1-1 made available to them.

* A total of 3,100,000 people (which represents 77 percent of the total state population) are now covered by a local 9-1-1 system.

* Fifteen counties installed partial or complete systems, six final plans were approved and 13 counties signed contracts for installation.

* Coverage has now reached 48 out of a total of 87 counties coupled with 31 other 9-1-1 exchanges.

* About 18 counties have either installed, or are planning to install, an enhanced 9-1-1 system which provides automatic number identification (ANI) as well as automatic location identification (ALI).

* Within the 7-county metropolitan area there has been a significant increase in cellular mobile telephone service and approximately 20 calls a day are placed through the 9-1-1 system; most of these calls are traffic safety related and are now being routed through the State Patrol district headquarters.

* There is a current total of 78 Public Safety Answering Points throughout the state. A questionnaire mailed out to them resulted in 57 responses from areas which serve more than 2,600,000 people. From this survey it was determined that 26 percent of the outstate calls and 22 percent of the metropolitan area calls were traffic safety related and included reports of accidents, disabled vehicles, signs down and traffic violations, etc.

EVALUATION OF EFFECTIVENESS

On an overall basis, there is high praise for the 9-1-1 system from the public and government officials and in general it has been functioning very well. Some equipment malfunctions have been experienced resulting in switching errors. Particularly in the metro area, there are still too many valid emergency calls being placed using the old 7-digit emergency numbers. Television public service announcements are used periodically to educate the public on the legitimate uses of 9-1-1.

PROJECT TITLE:	Statewide Occupant Restraint Program
PROJECT NUMBER:	85-03-01
FEDERAL FUNDS OBLIGATED:	$296,600.00
FEDERAL FUNDS EXPENDED:	$279,528.73
LOCAL/STATE FUNDS EXPENDED:	$40,743.54

EVALUATION OF EFFECTIVENESS

The Minnesota Occupant Restraint Program has had positive results in terms of increased usage of occupant restraints by drivers and passengers.

The increase in use is most notable for children under age four who are required to be safely restrained by the Child Passenger Protection Act. During the past five years, data has been collected by observers stationed throughout the state to determine seat belt and child seat use. All age groups have shown significant increases since the studies began in 1981. The progress has been steady but slow. Table 1 summarizes the results.

Table 1

Seat Belt And Child Restraint Use In Minnesota

People Observed	1981 Percent Restrained	1982* Percent Restrained	1983 Percent Restrained	1984** Percent Restrained	1985 Percent Restrained
Infants; less than one year old	51.9	65.0	54.4	70.8	75.5
Young Children; at least one & less than four	17.4	22.4	30.6	29.3	39.0
Older Children; at least four & less than 12	3.7	7.8	13.2	16.7	17.2
Passengers; 12 or older	9.9	6.2	11.0	11.5	12.0
Drivers	13.2	10.1	14.0	15.1	19.0

*Child Passenger Protection Act in Effect.
**Child Passenger Protection Act Strengthening Ammendment in Effect.

Accident data also points out the increase in use by Minnesotans. As shown in Table 2, more people in all categories of injury severity were buckled up in 1985 than in 1981. The progress here has also been slow and steady. The reporting of restraint use on accident forms also increased from nearly 50 percent in 1984 to nearly 65 percent in 1985.

Table 2

Motor Vehicle Occupants Killed and Injured Using Safety Restraints*

	Fatalities		Severe Injuries		Moderate Injuries		Possible Injury	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1981	12	4.2	148	6.8	545	8.3	679	11.4
1982	15	6.3	127	7.0	555	9.6	779	13.3
1983	20	6.2	323	12.2	1061	13.4	1380	18.1
1984	25	8.2	272	11.0	1051	14.1	1483	20.2
1985	39	11.1	383	12.2	1564	15.4	2719	23.8

*Percentages based on known and reported use (includes child restraints)

Although much progress has been made, Minnesota's seat belt and child restraint use rates remain unacceptably low.

Task 1 - Expand Infant and Child Restraint Program

One of the objectives of the 1985 Highway Safety Plan was to increase compliance with the provisions of the Child Passenger Protection Act. As demonstrated by Table 1 in the previous section, more children did travel safely in 1985. The accident statistics also back up this claim. In 1985, six children under the age of four were killed and 684 were injured while riding in vehicles; fewer deaths and injuries than has occurred in one year since we began to monitor this information in 1977.

The Minnesota State Patrol issued 1,198 warnings and citations in support of the Child Passenger Protection Act in 1985. This was an increase of more than 20 percent over the number issued in 1984. We are regretably unable to gather data on enforcement activities by local and county agencies.

Other accomplishments in 1985 included:

* The travelling trailer (Maki trailer) was shown at 26 different locations for 75 total days. This trailer houses a severely damaged accident vehicle whose occupants (one child and one adult) survived the crash because they were restrained.

* Twenty-four new car seat loaner programs were established with matching car seats and support of the project. There are now 116 loaner programs in Minnesota.

* The program office loaned 263 car seats directly to parents.

* The "World's Largest Car Seat," created by McDonalds, make six appearances to promte the "All American Buckle-Up" in May.

Task 2 - Expand Safety Belt Programs

A second objective of this project was to establish additional corporate and governmental seat belt programs. This objective was met. In 1985, seven new governmental and 131 new corporate programs were started, bringing the total of such programs in Minnesota to 354.

A third objective was to assist in the passage of a seat belt bill in the 1985 legislative session. The Senate again passed this bill and the House again failed to pass it. The law was then tabled in the House of Representatives for reconsideration in the 1986 session. The Minnesota Occupant Restraint Program staff provided assistance and support in the form of information to the sponsors of the bill in both Houses.

Other accomplishments related to this task include:

* The NHTSA package Safe Rides for Long Lives was used in several communities.

* The Saved by the Belt Club, co-sponsored by the State Patrol, continued to receive nominations and award memberships.

* A wide variety of activities related to the May "All American Buckle-Up."

Task 3 - Expand Model Cities Program

This was the second year funding was provided to the Duluth project and the first year for the St. Cloud project. The stated objective was to increase and maintain usage above the statewide average in the model cities.

Both the Duluth and St. Cloud projects failed to be as active as had been anticipated. The Duluth project had been very active in its first year (FY 84) and did increase use during that year. In 1985 the enthusiasm and level of support by the committee and the community was considerably lower and the observed restraint use fell. In St. Cloud the activities got off to a late start in January and the initial enthusiasm quickly faded. Both cities were below the statewide average in restraint use in 1985 as shown by Table 3.

Table 3
Model Cities Observed Restraint Use

Age Group	Percent Restrained In St. Cloud 1984	1985	Percent Restrained In Duluth 1984	1985	Percent Restrained Statewide 1984	1985
Infants (less than one)	63	69	83	53	70.8	73.5
Young Children (from one to four)	19	34	30	34	29.3	39.0
Older Children (from four to twelve)	10	8	21	18	16.7	17.2
Adults Passengers	4	7	12	9	11.5	12.0
Drivers	10	15	15	15	15.1	19.0

Based on this experience the decision was made not to continue funding these programs in 1986.

Task 4 - Conduct Observational Study

The 1985 study was conducted during six weeks in July and August. Twenty observation sites were used to gather information on seat belt, child restraint and helmet use. A final report was completed in January of 1986. The results are summarized in Table 1 earlier in this report.

Task 5 - Develop and Distribute Material

Over 120,000 brochures and pamphlets were distributed this year. Two new brochures were produced in 1985. "You Can Make a Big Impression" was designed for teenagers and young adults and proved to be so popular that 16 prganizations in eleven states have expressed interest in reprinting it. The "Are You Using Your Car Seat Correctly?" brochure was also a success both in Minnesota, where nearly 30,000 were distributed, and in other states, three of which have expressed an interest in reprinting.

Bumper stickers and other promotional materials were also produced and distributed as was The Crier a quarterly restraint newsletter with a distribution of 3,000.

Task 6 - Support Women Highway Safety Leaders

The Women Highway Safety Leaders continued to be involved in a variety of activities related to safety restraints. The activities varied in different parts of the state; in total 18 workshops were conducted and 200 other activities look place in Minnesota. Volunteers were recruited and trained and a newsletter for members was published.

ALCOHOL AND TRAFFIC SAFETY

Alcohol-related traffic deaths in the years 1973-1985 were down 40%. The following table arrays alcohol-related traffic crash losses -- deaths, injuries, and property-damage-only crashes -- over that period of time. Other tables depicting alcohol involvement are furnished in the Statewide Overview section of this report.

In the period 1979 through 1985, drunken driving arrests rose from 18,092 to 35,383. More than one-fourth of all arrests made in Minnesota are for drunken driving. With no significant increase in the number of Minnesota police officers, it is unlikely that improved efficiency of the DWI enforcement process can continue to sustain this rate of increase.

Driver license revocations for alcohol-related offenses reached an all-time high in 1984 with 43,502 drivers losing their licenses. In 1985 there were 40,807 alcohol-related revocations.

The two-track Minnesota system provides for quick, administrative revocation of the license when a driver either refuses to take a test or fails a test with an alcohol concentration of 0.10 or more, regardless of what happens on the criminal charge of drunken driving, where the driver may be fined or jailed. A table compares traffic deaths and rates with alcohol-related driver license revocations and rates in the years 1967 through 1985.

After the 1982 Legislature made very significant improvement in what were already effective drunken driving and implied consent laws, the 1983 Legislature continued to address the problem with further amendments. These legislative actions were reported in the 1982 and 1983 Annual Evaluation Reports. In 1984 the Implied Consent law was amended to make taking an alcohol concentration test mandatory and providing a one-year administratively imposed revocation for refusal. In 1986 Minnesota adopted, effective September 1, 1986, a legal drinking age of 21. (See "Chronology of Highlights of Minnesota Drunken Driving Laws.")

Public and media interest in drinking driver control continues high, with citizen groups such as Mothers Against Drunk Drivers (MADD) continuing to play a strong role in both legislative and public support activities.

The 1985 HSP included within PSP 85-04 (Alcohol) these projects:

84-04-01 Statewide Alcohol Countermeasures
84-04-02 Prosecutor Training Program
84-04-03 Traffic Court Training
85-04-04 Local DWI Enforcement and Prevention

In June 1985, the Department of Public Safety conducted the first drinking and driving roadside survey done anywhere in the United States since 1976. The major finding was that the drunken driving problem has been cut in half in Minnesota in the last decade. Voluntary breath tests of drivers were given to a sample of the traffic stream at 16 locations during nighttime hours. The proportion of drivers with an alcohol concentration of .10 or more was less than half that found in similar surveys in the seventies. With half as many drunken drivers on the road and twice as many DWI arrests being made, the chance of a drinking driver being stopped is nearly four times as great.

In March 1986, Minnesota became the 39th state to enact a law making it illegal for persons under the age of 21 to drink alcohol. The law takes effect September 1, 1986. Persons reaching their nineteenth birthday before then will be given 21-year-old status.

There are currently two ways of measuring alcohol involvement in Minnesota motor vehicle accidents. One is by the police officer's indication of the driver's physical condition. If "under the influence" or "had been drinking" are marked on the traffic accident report, the accident is considered alcohol-related. Using this measure, only 194 or (32 percent) of the 610 fatalities were alcohol-related. However, with a second resource of blood alcohol concentration test results from coroner's reports, a more accurate picture of alcohol involvement can be drawn. A composite number of 261 (43 percent) alcohol-related fatalities can be reached by combining these two measures. This compares with a 1984 national study which showed that 53 percent of motor-vehicle fatalities were alcohol-related. Minnesota figures are still conservative because alcohol tests of surviving drivers are not required by law and are not reflected in the statistics.

* 1985 showed the lowest percentage ever recorded of drivers killed who had been drinking, decreasing from 58 percent in 1984 to 47 percent in 1985. The largest drop was in young male drivers. Drivers who were intoxicated (over .10) decreased from 47 percent to 37 percent during the same time period, also the lowest ever recorded.

* A higher percentage of dead drivers age 16-20 had been drinking than any other five-year age category; however, 26-30-year-olds showed the highest percentage of drunk drivers (.10 or higher).

* Single-vehicle accidents yielded a much higher percentage of alcohol involvement than multi-vehicle accidents. Eighty-six percent of fatalities in submersions and collisions with fixed objects and 78 percent of fatalities in overturns were alcohol-related. The highest percentage of alcohol-involved multi-vehicle fatalities was in collisions with railroad trains (57 percent), however, fatalities in collisions with two or more other motor vehicles yielded only 36 percent alcohol involvement.

* The ratio of male to female drinking drivers killed has decreased from 14:1 in 1976 to 5:1 in 1985.

* Ninety four percent of tested drivers who died from accidents occurring between midnight and 3:00 a.m. had been drinking. This compares with 47 percent of tested drivers for all time periods.

* In December accidents, no dead drivers who were tested had been drinking. In April accidents, 80 percent of drivers tested has been drinking.

* 1985 pedestrian fatalities showed the same dramatic decrease in percentage drinking as driver fatalities -- from 53 percent in 1984 to 38 percent in 1985, and from 47 percent drunk in 1984 to 26 percent drunk in 1985.

* All pedestrians killed in accidents occurring between midnight and 3:00 am.m who were tested had been drinking, whereas only 38 percent of pedestrians killed during all time periods had positive alcohol test results.

* Of all pedestrians killed, 21-to-25-year-olds had the greatest percentage of positive alcohol test results (86 percent); the age group of 66 and older had the lowest percentage (seven percent).

CHRONOLOGY OF HIGHLIGHTS OF MINNESOTA DRUNKEN DRIVING LAWS

1911 "Whoever operates a motor vehicle while in an intoxicated condition shall be guilty of a misdemeanor."

1925 Three months driver license "forfeit" upon conviction.

1927 "Under the influence of intoxicating liquor" terminology replaced "in an intoxicated condition." Offense made gross misdemeanor, imprisonment mandatory.

1937 Back to misdemeanor. (No need to offer jury trial under law at that time.)

1955 Chemical test (voluntary) presumption standards for results of tests of blood, breath, urine or saliva. Prima facie at 0.15.

1957 "Alcoholic beverage" replaced term "intoxicating liquor."

1961 Implied Consent: take test when arrested for DWI or lose drivewr license for six months.

1967 Prima facie reduced from 0.15 to 0.10.

1971 Preliminary screening breath test (PBT) authorized.

Illegal per se at 0.10

Invoke implied consent without necessarily having person under arrest.

1976 Presentence alcohol problem assessment required.

"Aggravated DWI" gross misdemeanor. (DWI while license under revocation for previous alcohol related offense.)

Authorize administrative revocation of driver license for <u>either</u> refusing to take test or for testing 0.10 or more.

1978 Police officer acts as agent of Commissioner, giving notice of revocation and picking up plastic license.

"Alcohol concentration" term (rather than "blood alcohol concentration") adopted and defined in statute by ratios to blood, breath and urine.

1980 Admit test results without in-person testimony of chemist.

1982 Police officer choice of test.

Second and subsequent offenses, gross misdemeanor.

Administrative revocation effective in 7 days. <u>Not</u> stayed pending review.

1983 Evidence of refusal admissible in trial.

Felony "criminal vehicular operation" if ordinary negligence, DWI resulting in death or injury.

Felony hit-run if death or injury. (Not necessarily DWI.)

1984 Mandatory test; no "right" to refuse. One year revocation for refusing.

1986 Age 21 legal drinking age.

MINNESOTA
TRAFFIC DEATHS AND ALCOHOL RELATED DRIVER LICENSE REVOCATIONS
1967 - 1985

Year	100 million vehicle miles traveled	Traffic deaths	Rate	Alcohol related driver license revocations	Rate
1967	187	965	5.17	5,977	32
1968	199	1,060	5.33	7,431	37
1969	208	988	4.75	8,471	41
1970	224	987	4.41	8,634	39
1971	234	1,024	4.38	9,678	41
1972	249	1,031	4.14	11,303	45
1973	252	1,024	4.02	13,047	52
1974	246	852	3.47	13,325	54
1975	256	777	3.03	13,731	54
1976	270	809	3.00	14,251	53
1977	281	856	3.05	17,741	63
1978	288	980	3.40	24,357	85
1979	290	881	3.04	24,966	86
1980	285	863	3.03	30,481	107
1981	286	763	2.67	32,043	112
1982	294	581	1.98	33,024	126
1983	305	558	1.83	34,903	114
1984	322	584	1.81	43,502	135
1985	331	610	1.84	40,807	123

MINNESOTA ALCOHOL-RELATED TRAFFIC CRASH LOSSES 1973-1985*

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	73-85 1985	Change
Deaths	573	477	435	453	479	549	493	483	427	325	318	327	342	-40%
Injuries	7,271	6,721	7,128	7,069	7,684	8,556	8,443	7,689	7,436	6,578	6,984	7,251	7,685	NC
Property Damage Only	6,332	6,096	7,585	7,061	7,137	6,744	6,915	5,773	5,358	4,987	5,456	5,715	4,949	-22%

* Applied most recent national index of 56% of all traffic deaths, 17% of injuries and 8% of property-damage-only crashes. Estimates in prior years used more conservative, less precisely derived proportions and thus tended to understate alcohol involvement.

DRINKING DRIVER SUMMARY - 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Drunken Driving Arrests	19,419	16,976	18,078	18,092	22,788	27,034	28,048	32,155	36,638	35,383
Alcohol-Related Driver License Revocations	14,251	17,741	24,357	24,966	30,481	32,043	36,024	41,311	43,502	40,807
For Conviction of DWI Charge	NA	NA	15,512	14,797	17,406	19,009	9,400	5,462	5,334	4,652
Administrative Revocations For Refusing Test	NA	NA	3,344	3,427	3,863	4,427	8,456	11,155	11,413	9,219
For Failing Test (.10 or higher)	NA	NA	5,501	6,742	9,212	8,607	18,168	24,694	26,755	26,936
Drivers Killed	478	476	576	523	519	437	321	345	383	372
Tested (died within 4 hours)	61%	58%	66%	63%	65%	66%	72%	75%	83%	79%
Positive (had been drinking)	64%	60%	63%	58%	69%	62%	54%	56%	58%	47%
Drunk (.10 or higher)	53%	54%	51%	45%	58%	52%	48%	45%	47%	37%

PROJECT TITLE:	Alcohol Countermeasures Coordination
PROJECT NUMBER:	85-04-01
FEDERAL FUNDS OBLIGATED:	$174,300
FEDERAL FUNDS EXPENDED:	$154,901

Task 1. Coordination and Support

Collected and provided information and data on alcohol-related traffic safety subjects to a variety of interested parties, including state and local officials, legislators, researchers, the general public and news media.

Task 2. Criminal Justice System DWI Task Force

Reviewed and made recommendations on DWI control measures, including legislation. Provided a panel representing criminal justice professionals to act as both a sounding board and an ad hoc recommending body.

Task 3. Measurement of the Drinking Driving Problem

Conducted roadside survey to determine alcohol concentrations among drivers on Minnesota roads. A symposium on Minnesota Traffic Safety Futures brought 75 professionals and community leaders together for planning.

Task 4. Training Programs and Conferences

Facilitated attendance of 15 professionals at training conferences and seminars, including those sponsored or co-sponsored by NHTSA, such as Lifesavers and regional meeting.

Task 5. Citizen DWI Reporting

Completed feasibility and planning study for 1986 implementation of a program encouraging citizens to report dangerous or apparently impaired driving and publicizing the ways this can be done most effectively.

PROJECT TITLE:	Prosecutor Training Program
PROJECT NUMBER:	85-04-02
FEDERAL FUNDS OBLIGATED:	$30,000
FEDERAL FUNDS EXPENDED:	$24,269

Task 1. Plan and conduct seminars on prosecution of DWI

Capacity attendance by 125 prosecutors at the two-day DWI Prosecution Seminar in May, 1985. Participant evaluation very favorable.

Small group exercises in DWI trial tactics were conducted in three locations in outstate Minnesota. Each exercise consisted of one and one-half days with 12 participants at each location. Participant evaluation very favorable.

Task 2. DWI/Vehicular Homicide Conference.

Five Minnesota prosecutors attended the annual Traffic Insititute (Northwestern University) DWI/Vehicular Homicide Conference in Chicago. Participant evaluation very favorable.

The Minnesota DWI/Implied Consent Prosecutors Manual was updated, printed and distributed to 1,000 city attorneys, county attorneys and assistant county attorneys.

PROJECT TITLE:	Traffic Court Training
PROJECT NUMBER:	85-04-03
FEDERAL FUNDS OBLIGATED:	$25,000
FEDERAL FUNDS EXPENDED:	$18,629

Task 1. Judicial training scholarships

Ten recently appointed judges attended basic courses at the National Judicial College and the American Academy of Judicial Education dealing with court handling of alcohol-related traffic offenses and two experienced judges received advanced specialized training in this area.

Task 2. In-state judicial training.

Plans to provide training programs in Minnesota dealing with DWI and Implied Consent, Intoxilyzer, and topics related to alcohol-related traffic violations were modified as similar programs were provided within statewide and regional judges' conferences.

PROJECT TITLE:	Local DWI Enforcement and Prevention
PROJECT NUMBER:	85-04-04
FEDERAL FUNDS OBLIGATED:	$164,000
FEDERAL FUNDS EXPENDED:	$145,363

This project provided funds to seven selected metropolitan area communities to enable deployment of extra-duty police officers during night hours with the directed assignment of patrolling for DWI violators.

In 1985 there were 3,072 hours of such extra duty patrolling during which 411 DWI arrests were made. In the same period, arrests by regular duty officers increased slightly over the previous year. The objective of the project, a 25% increase over annual arrests made in the pre-project three-year base period, was exceeded in both the 1984 and 1985 project years.

Because more Minnesota courts are imposing jail sentences in DWI cases, and because the arresting jurisdiction bears incarceration costs, the project sought to overcome this disincentive for local government participation by paying for incarceration when imposed on a person arrested by project-paid officers. An increasing number of such arrests are of repeat offenders who typically recieve longer jail sentences. A result is that the cost of an arrest and incarceration has risen to $350 compared with $200 cost for the arrest only when similar local extra-duty DWI programs were begun in 1980.

Experience with this project has made possible better analysis of the cost of making a DWI arrest since the activity is separated from general duty policing as well as from other more general traffic policing.

PROJECT TITLE: ADVANCED POLICE TRAFFIC TRAINIG
PROJECT NUMBER: 85-05-01
FEDERAL FUNDS OBLIGATED: $46,000.00
FEDERAL FUNDS EXPENDED: $38,350.00

The following training activities were performed in the project during federal fiscal year 1985:

Out of state training:

Captain Clarence Swanson - 10 week course at Northwestern University Traffic Institute, Evanston, IL. Police Staff & Command- January 7, 1985 through March 15, 1985.

Lt. Gene Halvorson - 10 week course at Northwestern University Traffic Institute, Evanston, IL. Police Staff & Command- April 1, 1985 through June 7, 1985.

Lt. Wesley Greve - 4 week course "Principles of Police Management" at Institute of Police Traffic Management, Jacksonville, No. Florida - January 21, 1985 - February 15, 1985.

Lt. Anne Beers - 1 week course at SIR training in Chicago, IL.

Cpl. Malcolm Lundgren - 2 day course at Institute of Police Traffic Management, Jacksonville, No. Florida- "Tire Forensics for the Traffic Accident Investigation" and "Investigation of Motorcycle Accident".

Field Courses in Minnesota:

Staff & Command course by Institue of Police Traffic Management - University of No. Florida. March 25 through April 5, 1985. (32 students)

Police Training Office course by Institute of Police Traffic Management - University of No. Florida. May 6 through May 10, 1985 (32 students)

DWI Instructor course by Institute of Police Traffic Management - University of No. Florida. April 22 through April 26, 1985 (36 students)

Basic Police Supervision course by institute of Police Traffic Management - University of No. Florida. September 23 through September 27, 1985 (37 students)

PROJECT TITLE: "55"/C.A.R.E.
PROJECT NUMBER: 85-05-02
FEDERAL FUNDS OBLIGATED: $390,000.00
FEDERAL FUNDS EXPENDED: $345,694.00

During the twelve (12) months duration of this project (October 1, 1984 through September 30, 1985) the activities of the State Patrol were as follows:

Arrests	6,176	
Written warnings	10,509	
Motorists assists	1,569	
Unattended vehicle checks	201	
Hours worked	11,635	(allocation 12,000)
Enforcement contacts	16,957	
Enforcement contacts/hour	1.43	
Miles driven	233,600	

During Federal FY 1985, 97 percent of all Project 55/CARE hours allocated were worked, which is a clear demonstration of the commitment of all District personnel to the success of the Project. In addition the enforcement contact rate of 1.43 contacts per hour does represent an increase over the levels achieved during the previous year. The results of this effort can be seen in the FY 1985 annual speed summary report which shows that only 53.9% of all vehicles are exceeding 55 MPH and the speedometer correction factor reduces this to quite a remarkable 39.2% of all motorists exceeding the 55 MPH speed limit in our state.

PROJECT TITLE:	Computerized Crash Analysis & Police Deployment
PROJECT NUMBER:	85-05-03
FEDERAL FUNDS OBLIGATED:	$75,000.00
FEDERAL FUNDS EXPENDED:	$67,481.16
LOCAL/STATE FUNDS EXPENDED:	$17,157.09

Task 1 - Administer Project

One State Patrol Trooper with the rank of Lieutenant is assigned to the administration of this project on a half-time basis. The position has been responsible for the requisitioning of all hardware and software necessary to develop the data collection and analysis system and to acquire the necessary training to operate the system. The position also maintains the numerous line of communication and coordination involved a complex undertaking of this nature.

Task 2 - Contract for Consultant Services

The consultant provided training for the project administrator and technical expertise in developing and debugging the complex data collection and processing system. Work also involved the development of technical specifications for a computer graphics system.

Task 3 - Purchase Computer and Graphics Software

During the fourth quarter the following graphic software packages were purchased: Graphtalk, DGraph and Autocad.

Task 4 - Purchase Computer and Graphics Equipment

During the fourth quarter requisitions were submitted for the computer graphics hardware system.

Task 5 - Purchase Driver Monitoring Equipment

One Golden River classifier and all of the necessary accessories were purchased.

Task 6 - Conduct Public Information Program

Due to the fact that the project did not become operational during F.Y. 1985 no public information activity was conducted. A special brochure was developed which will be handed out to motorists who are arrested by troopers to inform them of the nature of the project and its goals and objectives. Special roadway signs were fabricated which will alert drivers to the fact that they are

entering a special enforcement area. The signs will not be ere
the project is underway. A special questionnaire form was also
which will be used to periodically measure public awareness of t

EVALUATION OF EFFECTIVENESS

Due to continued problems, this project was still not operational
September 30, 1985. The Minnesota Department of Transportation d
get the roadway loop detectors and equipment cabinets installed wh
necessary in order to monitor driver behavior. Some real world ex
was gained in terms of use of the monitoring hardware by using a D
speed monitoring site on the 35E Interstate Parkway. Malfunctions
been occurring with the Golden River classifiers and have had to be
in for repairs. It had become increasingly clear that a project of
type takes a great deal of time to implement and there is a strong
ment on the part of the State Patrol to achieve full implementation
will take place some time in Fiscal Year 1986.

PROJECT TITLE: LOCAL "55"/SPEED ENFORCEMENT
PROJECT NUMBER: 85-05-04
FEDERAL FUNDS OBLIGATED: $365,000.00
FEDERAL FUNDS EXPENDED: $339,130.00

The Local "55" Speed Enforcement Project was conducted during the summer of 1985 (May 1, 1985 through September 30, 1985.) The activities generated by the twenty-seven participating counties chosen on the basis of accident statistics were as follows:

Total Hours:	14,769
Total Miles:	260,148
Total Arrests:	4,705
Total Speed Arrests:	3,921
DWI Arrests:	46
Total Warnings:	11,200
Total Speed Warnings:	9,719

Contact Average for the program was 1.08.

During Federal FY 1985, 93 percent of all Federal Funds allocated to the Local "55"/Speed Enforcement project were expended. This achievement could only be made possible with the complete cooperation of all participating counties in fulfilling their planned objectives. This commitment to the success of the project is also evident in the overall motorist contact rate of 1.08 contacts per hour which did exceed the established goal for the program of 1.0 contacts per hour by 8 percent which also is a significant achievement.

PROJECT TITLE.	Crash Control Through Selective Resource Deployment
PROJECT NUMBER:	85-05-05
FEDERAL FUNDS OBLIGATED:	$77,600.00
FEDERAL FUNDS EXPENDED:	$75,006.30
LOCAL/STATE FUNDS EXPENDED:	$34,257.60

Task 1 - Administer Project

In addition to the Project Director, there were two engineering aides assigned to this project of which one was federally funded. The primary responsibility in this task was the collection and analysis of the data produced by the driver behavior monitoring system as well as analysis of the police accident reports. All of this information is shared with the Minneapolis Police Department.

Task 2 - Contract for Consultant Services

Under a contract executed with Applied Management Corporation, assistance was provided to the city on the interfacing of the new graphics system with the existing microcomputer system. They also assisted in documenting the new procedures on operation of the system. They developed the computer software to permit automatic retrieval of data collected in the field by electronic monitors. They also conducted training courses for personnel involved with the project.

Task 3 - Develop Computer Graphics System

A computer graphics system was purchased and installed and became operational during the fiscal year. The system has the capability of superimposing crash data, enforcement activity and driver behavior data and provides a pictorial display for enforcement personnel to gauge progress made in reducing crashes as well as alerting them to problems in their particular precinct.

Task 4 - Develop On-Line Monitoring System

Telephone lines were installed and modems purchased for two monitoring sites which in effect automates data retrieval and eliminates the necessity of a person going out to the site and manually retrieve the data on a monthly basis. The automated system also permit the issuance of instructions to the monitoring site as to changes in the type of data to be collected.

Task 5 - Expand Monitoring Site System

Three Golden River Classifiers and the necessary accessories were purchased to enable a total of 10 target areas to be monitored for hazardous driving behavior and to provide data to the Police Department.

EVALUATION OF EFFECTIVENESS

The objective of the TACT project was to reduce accident levels to a practical base and attempt to hold them at that level. Based on that premise, the TACT project has been highly successful from 1982 thru 1984 but 1985 crashes and injuries increased significantly as indicated below:

	TOTAL ACCIDENTS			INJURY ACCIDENTS			INJURIES & FATALITIES		
	1984	1985	% CHANGE	1984	1985	% CHANGE	1984	1985	% CHANGE
TACT AREAS	1279	1587	+24%	662	825	+25%	969	1194	+23%
REST OF CITY	4238	4835	+14%	1904	2159	+13%	2876	3058	+ 6%

Two major changes occurred in 1985 that affected the accident picture. First and foremost, a massive area-wide freeway repair project was undertaken by the Minnesota Department of Transportation which severely restricted traffic flow and forced many motorists onto the Minneapolis roadway network. This impact first started to appear in May of 1985 and was significant in the third quarter of 1985. TACT area streets make up the majority of the major north-south and some of the major east-west alternative routes to the freeway system. The traffic volumes increased up to 50 percent more than normal on these routes and, compared to 1984, increased as much as two and one-half times the traffic volume. These volumes in most cases returned to normal in October (the same time that repair efforts ended on the freeway system). Accidents in this same third quarter had an extremely high increase as indicated below:

	TOTAL ACCIDENTS		INJURY ACCIDENTS	
	1984/1985	3rd QUARTER 1984/1985	1984/1985	3rd QUARTER 1984/1985
TACT AREAS	+24%	+42%	+25%	+44%
REST OF CITY	+14%	+ 9%	+12%	+11%

Obviously, there was a direct correlation between the increased volumes in the third quarter and increased accidents.

Second, in 1985 a new TACT area was added to the system (35th - 36th St.) which contributed additional accidents to the TACT area totals which previously had been a part of the "rest of City". This will continue to affect our figures from 1985 on; however, it was determined that in order to be dynamic in the review of the total City accident management, this area should be added to the TACT system.

Also, it should be noted that enforcement levels in the TACT areas decreased by 26 percent while citywide the decline was only 4 percent. It would appear the reduced enforcement level also contributed to the problem in the TACT areas. How much is difficult to determine, but can probably be evaluated better over a longer period.

Finally, as bad as 1985 appears to have been, the four years before (including 1985) TACT versus four years after TACT summaries still indicated a TACT-wide accident reduction of 29 percent. In addition, the latest Accident Facts data published by the National Safety Council indicated that, of all cities in the U.S. with a population over 350,000, Minneapolis had the least number of traffic fatalities and ranked number three by population rate, and number one by registration rate in 1984.

The strict numerical comparison of 1984 versus 1985 again was a change of very serious negative proportions. However, it was hopefully brought about by unusual circumstances that appear to be explainable and that perhaps without the TACT project would have resulted in even more serious consequences. Only time will bear this out, but we remain confident in the system and know that without it in place, little of the above analysis would have even been possible.

TOTAL ACCIDENT REDUCTION

BEFORE TACT: AVERAGE 1977-1980
AFTER TACT: AVERAGE 1982-1985

AREA	LOCATION	BEFORE TACT	AFTER TACT	REDUCED	CHANGE
A	LOWRY-CENTRAL-BROADWAY	193	139	54	DOWN 28%
B	HENNEPIN-1ST AVE	205	115	90	DOWN 44%
C	W. BROADWAY-LYNDALE	181	137	44	DOWN 24%
D	3RD AVE S	81	61	20	DOWN 25%
E	BLAISDELL-NICOLLET-1ST AVE	155	114	41	DOWN 26%
F	HENNEPIN AVE S	94	76	18	DOWN 19%
G	LYNDALE AVE S	193	136	57	DOWN 30%
H	W LAKE ST	198	141	57	DOWN 29%
I	FRANKLIN-BLOOMINGTON-CEDAR	204	163	41	DOWN 20%
J	E. LAKE ST	245	178	67	DOWN 27%
K	HIAWATHA-MINNEHAHA	100	53	47	DOWN 47%
	ALL TACT	1849	1313	536	DOWN 29%

CITY WIDE HAZARDOUS CITATIONS

MONTH	1978	1979	1980	1981	1982	1983	1984	1985	1986
JANUARY	858	1039	814	1734	1530	3017	2278	2906	
FEBRUARY	1144	1040	1014	1590	2174	3342	4013	3257	
MARCH	1422	1374	1119	2179	2970	5040	3971	3115	
APRIL	1210	1258	1033	2006	3962	4258	4278	2810	
MAY	1156	1415	1092	1822	3253	3467	3808	3205	
JUNE	1156	1184	1181	1835	3580	3721	3561	3614	
JULY	1050	1023	801	2228	3672	3115	2952	3380	
AUGUST	1113	1183	782	1582	3936	3618	3195	3978	
SEPTEMBER	1352	862	1211	1772	4521	3313	2911	3543	
OCTOBER	1411	845	1380	2326	3627	2623	3180	3835	
NOVEMBER	1366	731	1399	1954	3707	2889	3411	2865	
DECEMBER	1226	762	1691	1917	3041	1451	2733		
1ST QTR.	3424	3453	2947	5503	6674	11399	10262	9278	
2ND QTR.	3522	3857	3306	5663	10795	11446	11647	9629	
3RD QTR.	3515	3068	2794	5582	12129	10046	9058	10901	
4TH QTR.	4003	2338	4470	6197	10375	6963	9324		
YEAR TOT.	14464	12716	13517	22945	39973	39854	40291	29808	

TACT AREA HAZARDOUS CITATIONS

MONTH	1978	1979	1980	1981	1982	1983	1984	1985	1986
JANUARY					1232	1377	923	1146	
FEBRUARY					1184	1545	2480	1055	
MARCH					1887	1936	1996	966	
APRIL					2141	1411	1806	918	
MAY					1474	1598	1780	1089	
JUNE					1252	1542	1703	1048	
JULY				769	1597	1637	1249	1334	
AUGUST				645	1856	1858	1223	1436	
SEPTEMBER				1005	1793	1596	1324	1364	
OCTOBER				1000	1807	1693	1359	1417	
NOVEMBER				1230	1543	1444	1477	1039	
DECEMBER				1410	1508	1315	1097	784	
1ST QTR.					4303	4858	5399	3167	
2ND QTR.					4867	4551	5289	3055	
3RD QTR.				2419	5246	5091	3796	4134	
4TH QTR.				3640	4858	4452	3933	3240	
YEAR TOT.				6059	19274	18952	18417	13596	

PROJECT TITLE:	Police Traffic Services Coordination & Support
PROJECT NUMBER:	85-05-06
FEDERAL FUNDS OBLIGATED:	$21,300.00
FEDERAL FUNDS EXPENDED:	$19,676.17
LOCAL/STATE FUNDS EXPENDED:	$0.00

The purpose of this project was to provide additional capability and support for the police traffic services project. A Research Analyst in the Office of Traffic Safety was moved into the position of Safety Program Coordinator Trainee at the midpoint of the fiscal year. Much of this person's time was spent in becoming oriented to the operational aspects of the program. Activities included attending the NHTSA Highway Safety Project Management Course. Job performance was judged to be satisfactory.

PROJECT TITLE:	Youth Over-Involvement
PROJECT NUMBER:	85-06-01
FEDERAL FUNDS OBLIGATED:	$189,900
FEDERAL FUNDS EXPENDED:	$189,900

The main activities of this project included conducting an alcohol education and occupant restraint program for young people, and a teen crash study.

The Youth Alcohol Education Program ("CONTROL FACTOR") was conducted. Nineteen regional seminars were held for 426 high school juniors and seniors who, in turn, conducted the "Control Factor" for 9,683 high school students. In addition, the "Kids Teaching Kids" project for Kindergarten through sixth grade was conducted in seven school districts and reached nearly 3,000 students ("Kids Teaching Kids" emphasizes both alcohol and seat belt use.)

The regional workshops were held for 200 driver education teachers. These workshops emphasized the importance of teaching proper safety belt use and safe speed selection. Curriculum outlines were developed and distributed at the workshops.

PROJECT TITLE:	Bicycle Safety Project
PROJECT NUMBER:	85-06-02
FEDERAL FUNDS OBLIGATED:	$83,248.04
FEDERAL FUNDS EXPENDED:	$99,500.00 (State FY 85)

The purpose of this project was to provide coordination and support for community bicycle safety projects. State funds were used for salaries, travel costs, supplies, and a Pedal Power bicycle camp for teenagers. Federal funds were used as "pass through" monies for community-based bicycle projects.

Twenty-five communities had federally-sponsored bicycle safety programs and 52 communities ran locally-funded programs. The size of the federal grants ranged from $296.00 to 5,142.00. Activities conducted by the communities included; bicycle safety classes, bike rodeos, bike riding tests, bike safety checks, bicycle patrol seminars, and bike patrol (enforcement staff and equipment).

1985 was a fairly bright year for Minnesota in terms of bicycle accident reductions. Fatalities dropped from 15 in 1984 to 10 in 1985, which ties the all-time low. Although accidents increased slightly (from 1,282 in 1984 to 1,310 in 1985), there is some indication that this may be the result of increased reporting of accidents due to changes in the accident report form and officer training courses.

PUBLIC INFORMATION AND EDUCATION

PROJECT TITLE:	Public Information and Education Program Support
PROJECT NUMBER:	85-07-01
FEDERAL FUNDS OBLIGATED:	$143,100.00
FEDERAL FUNDS EXPENDED:	$137,599.77
LOCAL/STATE FUNDS EXPENDED:	$45,611.71

Task 1 - Administer Project

This task involved three full-time positions of which one-half of their time was spent on traffic safety issues. One position resigned at the end of the fiscal year and was not replaced because of budgetary cutbacks. A considerable amount of time was spent at the annual state fair and 13 county fairs.

Task 2 - Conduct Surveys

Although no surveys were conducted at driver license examining stations or the State Fair to determine public knowledge and attitudes on traffic safety issues, special surveys relating to bicycle and motorcycle safety were conducted in the summer of 1985 in conjunction with the annual occupant restraint survey.

The bicycle survey revealed the following:

* Two-thirds of the respondents owned a bicycle
* 94 percent use a bicycle primarily for exercise or fun and six percent use it for transportation.
* Slightly less men use bicycles than women but men are more likely to ride bicycles for transportation purposes.
* The age group most likely to use bikes for exercise and fun is the 25 to 39 year-olds.
* Only 2.2 percent of the people responded that they wear a helmet when they ride a bicycle. (Actual observations revealed that six percent of the bicyclists were wearing a helmet.)
* Over 80 percent of the respondents felt some degree of uneasiness when there was a bicycle in traffic with them.

The motorcycle survey revealed the following:

* Of the drivers interviewed, 9 percent had a motorcycle endorsement and 4 percent had an operator's permit.

* Only 78 percent of those who have a motorcycle registered in their name said that they had an endorsement or permit. (This may be due to the fact that certification is not required for the purchase or registration of a motorcycle.)

* 34 percent of the licensed motorcyclists indicated they had taken a motorcycle safety course.

* 53 percent of the motorcyclists said they always wear a helmet and women were more likely to wear helmets than men.

* About two-thirds of the licensed motorcyclists were in favor of a mandatory helmet law.

* More than 50 percent of the respondents felt that motorcyclists are less safe operators than car drivers.

* 66 percent of those surveyed felt some degree of uneasiness when there was a motorcycle in traffic with them.

Task 3 - Conduct DWI Program

A new brochure entitled "Decisions" was developed. Bumper stickers and a lapel sticker with the theme "Drinking Drivers Lose" were printed and distributed statewide. Three full-page public service ads on the dangers of drinking and driving were published in the St. Paul Pioneer Press through the support of various car dealers and one of the ads was reproduced as a colored poster. A television news presentation focused on the dangers of drinking and driving over the Christmas-New Year holiday period. The television PSA entitled "Slider" appeared on one metro television station 20 times which is equivalent to $5,165 of paid advertising. A toll-free telephone number and a local number for the metro area was installed for Mothers Against Drunk Driving and a brochure describing the MADD organization was printed for distribution by MADD members in their recruitment efforts.

Task 4 - Improve Film Library

A total of 122 prints of 35 different traffic safety films were ordered by the film library.

Task 5 - Conduct Bicycle Safety Program

A bicycle registration brochure and poster were printed. A bicycle registration/safety message was inserted with 2.5 million vehicle registration renewal notices. Two brochures ("You and Your Bike" and "Be a Bike Expert") were reprinted. Two issues of Bike Safety Scene (a bicycle safety newsletter) were

printed and sent to communities and law enforcement officers throughout Minnesota. A bicycle safety conference was held in February and Minnesota Bike Safety Week was observed in May. Several radio and TV public service announcements were produced and distributed together with several news releases sent out to all the media.

Task 6 - Conduct Occupant Restraint Program

(See Project No. 85-03-01)

Task 7 - Conduct 55 Information Program

A television news presentation accented the speed enforcement program. The speed limit was also promoted during public service time on radio. Eighty billboards were posted with the theme "Watch Your Speed....We Are!" REACT teams served refreshments at interstate highway rest areas and handed out safety literature during major holiday weekends during summer months. Unfortunately, the speed monitoring data collected by the Minnesota Department of Transportation in Fiscal Year 1985 showed increases in all six of the speed categories when compared with Fiscal Year 1984 as shown in the table below:

				Percent Exceeding		
Year	Average Speed	Median Speed	85th %tile	55 mph	60 mph	65 mph
1985	54.7	55.1	61.2	53.9(39.2)*	24.6	9.3
1984	53.7	54.3	60.0	50.5(34.6)*	18.6	5.3

*Adjusted for speedometer error

Task 8 - Conduct Traffic Safety Conference

The annual Governor's Traffic Safety Conference was held in May 1985 and included significant involvement of members of Mothers Against Drunk Driving. The national president of MADD spoke at the opening day luncheon. Any analysis of the critique forms submitted after the conference by the attendees revealed that 87 percent were satisified to highly satisfied with the overall program. In terms of information received which would be useful to their community, 93 percent were satisfied to highly satisfied.

COMMENTS: There is considerable confusion regarding NHTSA news releases and video tapes. Our experience with the news releases is that they arrive in our office often 10 days to two weeks after they are dated. Perhaps the mailing procedures should be checked. More of a problem is the procedure on video tapes. They are sent first to all television media and then as an apparent afterthought, NHTSA sends them to us with the expectation that somehow further exposure will occur by having Public Safety's name attached. It would behoove NHTSA to share with us the initial copies so that we can know what they are doing. The problem is illustrated recently with tapes produced for the national All-America Buckle Up. They arrived in our department late in November and early December. The news release regarding Barbara Mandrell arrived the first part of December.

PLANNING AND ADMINISTRATION

PROJECT TITLE: Program Management

PROJECT NUMBER: 85-08-01

FEDERAL FUNDS OBLIGATED: $150,000.00

FEDERAL FUNDS EXPENDED: $147,015.25

LOCAL/STATE FUNDS EXPENDED: $160,922.67

The primary objectives of Program Management for Fiscal Year 1985 were to complete a computerized equipment inventory control system, consolidate policies, procedures, directives, etc, into a single updated manual, increase our capability of more in-depth analysis of crash data and improve monitoring of projects to insure that goals and objectives are being met.

The following addresses the four areas specifically mentioned for Fiscal Year 1985:

1. Completion of a computerized equipment inventory control system.

   The Barrister Information Management System, a data base management software package, was integrated with the existing basic word processing software program, Text Editor. Our data based inventory could be accessed by an IBM Personal Computer. The personal computer could be used as a terminal or a computer.

   The new software allows the review of files by groups to determine average residual value based on historical data. Currently used values were established manually and are based on historical data when available.

   Certifications are computer generated with each file updated to reflect the current status.

2. Consolidation of Policies, procedures, directives, etc. into a single updated manual.

We are continuing to make progress toward completion of a new consolidated policy and procedure manual. A staff person is assigned this responsibility. Materials are reviewed by other staff and the director.

3. Increasing capability of more in-depth analysis of Crash data.

The change from a temporary entry level research analayst position to permanent status will provide the continuity necessary to meet our objective. This could include special studies as well as program evaluation.

4. Improve montioring of projects to insure that goals and objectives are being met.

The documentation of project monitoring has improved and at least one on-site visit per project has been made.

The Program Management staff consists of an office director, four coordinators, a coordinator trainee, two research analysts, two support staff, an accountant and an auditor. The audit function was discontinued as of June 30, 1985.

The program director, four coordinators, one research analyst, and one clerical position did not change personnel or class assignments during fiscal year 1985. One clerical position was upgraaded, from a Clerk Typist 3 to a Clerk Typist 4. Management of the computer based inventory of Federally Funded equipent was assigned to the upgraded position. The temporary, entry level, research analyst position was changed to permanent status on October 31, 1984.

The Office of the Legislative Auditor, for the State of Minnesota, conducts an annual organization-wide audit as required by the Single Audit of 1984 and the Federal Office of Management and Budget (OMB) Circular A-128. A Financial and Compliance Report on Federally Assisted Programs for the year ending June 30, 1985 was issued.

It should be noted that Legislative Auditors generally rely on the Internal Audit Staff when auditing immaterial federal funds awarded to the Department of Public Safety.

The Safety Program Coordinators, as well as the Traffic Safety Director, spent a significant amount of time during F.Y. 1985 as members of various advisory committees, as noted below:

Hazardous Materials Safety Advisory Committee

Minnesota Occupant Restraint Committee

Minnesota Operations Lifesaver Committee

National Traffic Records Committee

Users Subcommittee

Motorcycle Safety Advisory Committee

State Bike Safety Committee

Bicycle Registration Subcommittee

Pedalpower Planning Committee

NAGHSR Occupant Restraint Committee

Minnesota Accident Report Form Revision Committee

Department of Public Safety DWI Committee

Youth Alcohol Planning Committee

Presidential Commission on Drunk Driving

Minnesota Criminal Justice DWI Task Force

Interdepartmental Chemical Dependency Coordinating Committee

Committee on Auto Safety for Persons with Physical Disabilities

SAFETY CONSTRUCTION & OPERATIONAL IMPROVEMENTS

This program area is administered by the Minnesota Department of Transportation (DOT) and consists of four general areas related to safety in the highway environment. The four areas are: Identification and Surveillance of Accident Locations, Evaluation of Crash Performance of Roadside Appurtenances, Traffic Engineering Services and Pedestrian Safety.

This is an evaluation of an administrative project which strengthens the highway construction program by promoting and supporting improved safety planning, training and operational activities.

Identification and Surveillance of Accident Locations

85-09-11
Federal Funds Obligated: $240,200.00
Federal Funds Expended : $150,185.25

To enhance the safety improvement and evaluation process, activities in this area provide road authorities through the Minnesota Transportation Information System (TIS) a comprehensive accident, roadway and traffic data file and a photolog film file for viewing roadway features.

The Minnesota Department of Transportation, in providing data on all roadways, is continuing to develop an on-going status program with County Engineers for verifying and updating township road data in TIS (modeled after bridge status program). Using District 4 as a pilot, we are working with a task force of County Engineers and the District 4 State Aid Engineer to update District 4 township road data. We are developing procedures with them for an on-going update that would involve an annual status report being sent to the County Engineers on their township road data which they could mark with corrections and additions, and return for entering into TIS. We have also completed the coding of eight counties in District 6. A primary use of this local road data is in the analysis of accident data, e.g., correlating accident rates with physical roadway characteristics. During the 1985 program period, 540 maps were distributed to agencies for use in coding accident locations.

In the Photologging task, eight special requests (Detours, Construction Zones, High Accident Locations, etc.) and five Railroad-Highway grade crossing accident sites were photologged during this program year. Mn/DOT Districts 2, 8, 9 and Cook County were also photologged and films were edited and distributed to Districts 1, 3, 4 and the Office of Traffic Engineering.

Development continues on designing automated graphic capabilities for displaying Transportation Information System (TIS) accident data in diagram and map form. The goal is to be on line in early 1987 and, to this point, the following occurred this past year:

1. Software (AUTOCAD)* was upgraded to include new features.

   Evaluated supplementary software including word processor (to highlight features on maps), and advanced BASIC C compiler. The hard disk management package was upgraded.

   The AUTOCAD* upgrade has improvements which result in faster refresh of the screen, combined and enhanced user command strings, and three-dimensional capability. The BASIC C compiler allows further modification of the AUTOCAD* software by virtue of programming interfaces and subroutines. The word processor will allow text to supplement the graphical product.

2. Acquired high resolution color monitor.

   This level of resolution permits greater accuracy of the mapping product and should decrease operator discomfort after extended periods at the workstation.

3. Negotiated contract with consultant to develop digitizing process.

   This contract will help Mn/DOT acquire, at reasonable expense, key expertise for developing the necessary techniques and processes in data (x & y) extraction and encryption. The consultant has parallel development occurring with two other agencies at this time.

4. Developed boundary files for state, county, region, and district limits.

   This will provide the "typical" framework within which, research has determined, most maps will be produced. A user in one of Mn/DOT's outlying districts, for example, might wish to see only that data in his or her work area (in this case the district). The mainframe select software, currently being written, will allow that user the option of selecting only that data which applies. This data will then be represented graphically, in the form of a line map, with the district parameters both outlining the map and limiting the data as well.

* Trademark of AUTODESK, Inc.

In addition, 1985 saw the Minnesota Department of Transportation (Mn/DOT) complete its evaluation of two pilot projects related to this program. In the first, an investigation of SAS** - a mainframe statistical package - limited mapping potential was demonstrated but the software was highly proprietary in that it could not be modified to the Department's needs. It was also more expensive to run, since it was a mainframe application, than a CAD package designed for micros. The second evaluation was based on a pilot project with the Minnesota Land Management Information Center wherein an attempt was made to marry their computer capabilities with data needs and requirements of Mn/DOT. Major difficulties arose around the issues of data management and product turnaround. The decision to proceed with a micro-based system has since been made.

Mn/DOT also continued to support other agencies with a wide array of TIS statistical and general reports with the approximate 1985 total of almost 20,000 queries. It is to be further noted that, as TIS evolves into a mature system, an increasingly high percentage of these reports are of an end-user nature rather than maintenance. TIS has also been designed in such a fashion as to allow other system utilities to access the data (in addition to the TIS specific software) and user activity in this area also grew.

Many training sessions were held and TIS continued to be actively involved in the Department Data Processing magazine (UNITE) and Systems Standing Committee (Information Planning Advisory Committee - IMPAC).

The expenditure for the 1985 program in the Identification and Surveillance of Accident Locations project are as follows:

Task 1 Implement and Enhance the Transportation Information System (TIS) -- $94,997.49

Task 2 Promote T.I.S. and Accident Analysis Subsystem -- no costs were charged against this task, however, promoting was accomplished by individual office budgets.

Task 3 Provide Photographic Services on State and Local Roads -- $44,451.01

Task 4 Computer Graphics for Safety -- $10,733.75

Evaluation of Crash Performance of Roadside Appurtenances

85-09-20
Federal Funds Obligated: $25,000
Federal Funds Expended : -0-

** Trademark of SAS Institute, Inc.

- Three Cable Guardrail - Crash Test

  In 1984, one 60 mph/25 degree crash test of an 1800 lb. car into Mn/DOT's standard three-cable guardrail system resulted in successful redirection, but snagging caused subsequent return to the guardrail and the vehicle overturned. The test is documented in "Performance Limits of Longitudinal Barrier Systems" Contract DT-FH-61-82-C-00051. This test was the second conducted by FHWA under that contract. The previous test was with a 4500 lb. car at 25 degrees and 60 mph. That vehicle was successfully contained and redirected, although it took the system close to its ultimate strength. Further study and tests were proposed in 1985 by FHWA to see if a better performance could be obtained. The contract for this test was suspended, but has now been reactivated and tests should be performed during the latter part of the summer of 1986. This calls for computer simulations toward a design revision, interaction with Mn/DOT specialists, and two tests on a revised installation using one full size and one subcompact vehicle.

  No funds were expended on this project due to the suspended FHWA contract.

Traffic Engineering

85-09-31
Federal Funds Obligated: $199,820.96
Federal Funds Expended : $106,643.40

Tasks in this area provided for sign inventories, a traffic control device inventory management plan, traffic engineering assistance to local road authorities, a study of the monitoring of work zones and training in traffic engineering subject. The following is a summary of these activities:

- Conduct Signing Inventories

  The 1984 annual evaluation reported the possibility of the Hazard Elimination Safety Program (HES) funds being approved for this task and the task would then be dropped from the 402 Program. This event has taken place and the Office of Traffic Engineering has been conducting informational meetings related to the Township Sign Inventory Program with local road authorities throughout the State to solicit their interest.

- Provide Traffic Engineering Services

  This task, as in the past, is accomplished by state forces and funding. District Traffic Engineers and the Central Office Traffic Engineer assist local road authorities in identifying traffic engineering problems and provide direction to appropriate solutions.

- Management of Traffic Control Device Inventory

  The "402" supported sign inventory software package for microcomputers developed by a consultant for the City of Minneapolis is in the testing phase. Upon completion of the testing (December, 1986), the software package will be made available to other county and city road authorities possessing microcomputers.

- Equipment Purchase for Traffic Studies, Etc.

  In the spring of 1985, Mn/DOT activated existing speed loops on I-35E to provide a test site for Department of Public Safety to test software/hardware/telephone communication on their enforcement-accident reduction project. Equipment, power and telephone hookup, and monthly charges were the major expenditures. Power and telephone line surge protection equipment was also purchased.

- Purchase and/or Print Safety-Related Manuals

  The following manuals were printed or purchased with Section 402 funds:

  -- Flagger Manuals (5,000 copies, $955.00)

  -- Appendix B to Minnesota MUTCD, "Traffic Control for Short Term Street or Highway Zones" (7,500 copies, $6,935.00)

  -- Revision No. Three - Uniform Traffic Control Devices (1,600 copies by Kentucky, $4,284.37)

  Mn/DOT will issue a new Minnesota Manual on Uniform Traffic Control Devices, including a new Appendix B as indicated above. Four color printing was necessary to be consistent with Federal MUTCD and to show color for construction zone signing.

- Billboard Safety Campaign

  In the winter of 1983-1984, Mn/DOT experienced a record number (78) of accidents involving snowplows. Most of these were cases where the plow was rear-ended by another vehicle, and in all cases, the lact of visibility created by the snow cloud thrown up by the plow was a major factor.

  A series of public service announcements, both radio and television, were prepared for statewide use. Since a disproportionate share (38%) of the accidents were in the southern third of the State, it was felt a little something extra was needed in this area. We asked for, and got, excellent coverage in the area newspapers so many well-read people were aware of the problem.

Mn/DOT approached the owner of Vogel Outdoor Advertising, asking if he could help out with some billboard advertising on the subject. After some negotiation, a proposal was made that involved Vogel and two other companies. They would furnish 25 billboards, furnishing a good geographic spread across southern Minnesota. Mn/DOT was to pay a "posting fee" of $50 per board, representing the average cost of sending a crew out to put up the poster. Mn/DOT was to pay the actual cost of printing the posters, estimated at $50 per board. The sign companies donated the space. Vogel donated the design/art work.

Federal Safety Funds were approved and the posters went up in late January of 1985. Some boards were up for only the guaranteed 30 days, but many stayed up until spring. The biggest single value obtained from the overall effort on this campaign was in the morale of the snowplow operators. They heard the radio slots, saw the television shots, read the news articles and either saw or heard about the billboards. They realized that Mn/DOT management cared about them, about their safety and was attempting to do something about it. They appreciated the effort.

The feeling is that the efforts to get the accident stories to the news media were very effective. The television public service announcements were well accepted by most TV stations and were effective. The radio public service announcements were not universally accepted, but were very effective where they were used with any degree of consistency. The billboard campaign was dramatic.

The simple fact that three companies donated space and we developed the campaign impressed our maintenance workers, and thereby, improved morale. But the billboards themselves did not seem to be as effective as we had hoped. Donated space is a billboard that cannot be rented out in the slack winter periods. You don't get the prime locations and visibility. You get the secondary locations. The art work was designed by a Vogel artist. It looked good on paper. Being very cost conscious, we kept the number of colors down. When it appeared on an actual billboard, under drab winter conditions, it proved to lack impact. Many people who regularly drove past these boards never saw the message.

The nature of a billboard campaign limits its flexibility. It must be planned months ahead of time. The time of its use cannot be changed, once committed.

A billboard campaign can be effective for a generic message that does not have changing factors of timeliness. For instance, "Buckle Up" or "Don't Drink and Drive" are messages that are important and effective any time. "Give Them Room To Plow" looks incongruous when you have had a February thaw and there is no snow on the road.

In conclusion, it is felt that the billboard part of this safety campaign was the least effective of its several parts. The subject is something that demands a flexible program that can be accelerated or dropped according to conditions. These factors are not present in a billboard campaign.

- Monitoring of Work Zones

A traffic safety subcommittee reviewed three state and one county project. Also, Central Office traffic engineering technicians visited approximately 25 state construction projects.

- Vehicle Monitoring Study

The Traffic Count/Speed/Classification equipment is operational at approximately 55 sites out-state and providing data on a daily basis. The seven county metropolitan area sites should be operational during Federal Fiscal Year 1987.

- Safety-Related Training

This task provides training in safety-related subjects to state and local road authorities. During this program year, five courses were provided as follows:

-- Geometric Design Policy Revisions
Participants 52 (State 38 - FHWA 14)

-- Traffic Engineering for Engineers
Participants 27 (State 22 - Locals 5)

-- Traffic Signal Workshop
Participants 38 (State 26 - Locals 12)

-- Traffic Signal Technician Training for Signal Maintenance Employees
Participants 30 (State 11 - Locals 19)

-- Train the Trainer Course - Revised "Appendix B" Minnesota Manual on Uniform Traffic Control Devices
Participants 52 (State 32 - Locals 20)

In addition to the above courses, six individuals received training from Georgia Institute of Technology, Atlanta, Georgia. The two courses they attended were "Traffic Signal Operation at Local Intersections" and "Traffic Signal Operation in Coordinated Systems".

The overall evaluation of these courses by the participants was good and, in the majority of cases, the training was applicable to their work situations.

Under an agreement with the University of Minnesota, Matthew Huber and the Mn/DOT video studio developed a video course on "Traffic Control for Short Term Street or Highway Work Zones" covering material from the new Appendix B of the Minnesota Manual on Uniform Traffic Control Devices.

This task also provided funds on an 80/20 ratio for the purchase of a video camera and accessory equipment. The Department of Transportation has a growing need for video as a medium to train and educate road authorities and the general public in highway safety.

The expenditures for the 1985 program in the Traffic Engineering Services project are as follows:

-- Equipment Purchase for Traffic Studies, Etc.

$4,713.74 - These costs were for materials and installation costs related to the enforcement/accident reduction program underway in the Department of Public Safety.

-- Monitoring of Work Zones

$900.06 - Travel expenses related to the field inspections to evaluate the traffic management and control in various construction projects.

-- Purchase and/or Print Safety-Related Manuals, Documents, Pamphlets, Etc.

$14,730.18 - Costs of printing the Flag Person Manual, Traffic Control for Short Term Street or Highway Work Zones, Revision No. 3 - Uniform Traffic Control Devices, and costs related to the Billboard Campaign.

-- Safety Related Training Tasks

$86,299.42 - Costs for five courses given at the Mn/DOT Training Center and two courses at Georgia Institute of Technology, the development of the course for "Traffic Control for Short Term Street or Highway Work Zones. On a 80/20 ratio, funded the purchase of a video camera and related equipment.

Pedestrian Safety

85-09-41
Federal Funds Obligated: $3,500.00
Federal Funds Expended : -0-

Mn/DOT, through the Office of Traffic Engineering and the District Engineers, continued to provide local government agencies with assistance in related pedestrian problems.

No charges were made to the Pedestrian Safety project. However, the above activities were accomplished using state funds.