

**Evaluation of 55 Enforcement Activities
1984**

R.Q. Brackett
Tim Carnahan
and
John Holmgreen

December, 1984
Final Report
(83)01-01-D1-AB

A Report from the
Texas Transportation Institute
Texas A&M University
College Station, Texas 77843

Prepared for the
Texas Department of Public Safety
and
Texas State Department of Highways
and Public Transportation

This electronic document was created from an
original hard-copy.

Due to its age, it may contain faded, cut-off or
missing text or low-quality images.

DISCLAIMER

The contents of this report reflect the views of the authors who are responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the official views, or policies of the Texas State Department of Highways & Public Transportation National Highway Traffic Safety Administration, or of the Texas Department of Public Safety. This report does not constitute a standard, specification, or regulation.

ABSTRACT

Increased enforcement efforts were implemented on targeted roadways in twenty Texas counties in two Phases in an attempt to increase driver compliance with the 55 MPH National Maximum Speed Limit (NMSL) to 50 percent. Speed and accident data were collected and analyzed in order to measure the impact of increased enforcement manhours and ticketing activity.

Results comparing pre and post-treatment data showed a slight decrease in non-compliance with the NMSL and reductions in mean speed and percentage of vehicles exceeding 60 MPH. There was no significant change in speed variance. There was also no change in the total number of accidents or speed related accidents on target roads or countywide in the treated counties.

These data suggest that sufficiently concentrated enforcement activities can reduce traffic speeds. However, as compliance gets closer to 50 percent more manpower may be necessary to effect changes.

TABLE OF CONTENTS

	PAGE
EXECUTIVE SUMMARY.....	1
1.0 INTRODUCTION.....	4
1.1 Project Goal and Requirements.....	9
2.0 IMPLEMENTATION PLAN.....	11
2.1 Target County Selection.....	12
2.2 Roadway Selection.....	14
2.3 Manpower Allocation.....	14
2.4 Deployment Schedule.....	14
2.5 Patrol Procedures.....	15
3.0 IMPACT EVALUATION.....	16
3.1 Speed Surveys.....	16
3.2 Results of Speed Surveys.....	17
3.2.1 Phase I.....	18
3.2.2 Phase II.....	20
3.2.3 Statewide Speeds.....	21
3.3 Accident Experience.....	23
3.3.1 Phase I.....	25
3.3.2 Phase II.....	25
4.0 ADMINISTRATIVE EVALUATION.....	30
4.1 Data Collection.....	30
4.1.1 Manhours.....	30
4.1.2 Arrest Activity.....	32
4.1.3 Miles Driven.....	38
4.1.4 Costs.....	38
4.2 Cost and Effectiveness Comparisons.....	40
4.2.1 Performance.....	40
4.2.2 Unit Cost of Activity.....	42
4.2.3 Adjudication.....	44
5.0 Conclusions and Recommendations.....	46
5.1 Conclusions.....	46
5.1.1 Speed Data.....	46
5.1.2 Accident Data.....	47
5.1.3 Cost and Effectiveness.....	47
5.2 Recommendations.....	48
References.....	50
Appendix A.....	A-1

	PAGE
Appendix B.....	B-1
Appendix C.....	C-1
Appendix D.....	D-1
Appendix E.....	E-1

LIST OF TABLES

	PAGE
TABLE 1.1 Results of Previous 55 MPH STEPS.....	7
TABLE 3.1 Pre/Post Comparison Using Combined Data from All Counties.....	19
TABLE 3.2 Statewide Quarterly Speed Surveys.....	22
TABLE 3.3 Control Counties Selected for Accident Comparisons.....	24
TABLE 3.4 Countywide Accidents for Phase I and Control Counties.....	26
TABLE 3.5 Countywide Accidents for Phase II and Control Counties.....	27
TABLE 3.6 Accidents on Treatment Roadways for Phase I and Phase II Counties.....	28
TABLE 4.1 Step Enforcement Hours Planned vs. Actual.....	31
TABLE 4.2 Total Project Hours.....	33
TABLE 4.3 Routine Enforcement Hours.....	34
TABLE 4.4 Citations by Month (Overtime).....	35
TABLE 4.5 Warnings Issued by Month.....	36
TABLE 4.6 Summary of Routine Patrol Speed Arrest Activity..	37
TABLE 4.7 Project Mileage by Month.....	39
TABLE 4.8 Performance Comparisons.....	41
TABLE 4.9 Estimated Unit Cost of Enforcement.....	43
TABLE 4.10 Convictions of STEP Arrests (Sept. 84).....	45

LIST OF FIGURES

	PAGE
FIGURE 1.1 Percent of Vehicles in Texas traveling at or Below the Speed Limit and at or Below the Speed Limit Plus 5 MPH.....	5

EXECUTIVE SUMMARY

This report presents the evaluation in two phases of increased efforts by the Texas Department of Public Safety (DPS) to enforce the 55 MPH National Maximum Speed Limit (NMSL) on targeted roadways in twenty Texas counties. Phase I counties were selected using a method of ranking the potential reduction in speed related accidents. Phase II counties were selected by DPS personnel on the basis of their experience. The projected goal was to increase driver compliance to 50 percent. The evaluation included a measure of the impact of increased enforcement manhours and ticketing activity on speeds and accidents. There was also an administrative evaluation of performance.

Data Collection

TTI personnel collected speed data in three different periods for Phase I: pre-treatment to determine the amount of driver non-compliance with the NMSL; treatment, during the period of increased patrol activity on target roadways; and post-treatment in which the effects of enforcement were evaluated against the pre-treatment baseline information. In Phase II, which was of shorter duration, only pretreatment and post-treatment data were collected.

Data for the administrative evaluation was collected by the DPS. This data included; manhours, costs, ticketing activity and accident information.

Impact Evaluation

Results indicate that non-compliance with the NMSL (%>55) decreased for both Phases, as did mean speed and the percentage of vehicles exceeding 60 MPH indicating a positive effect of increased enforcement. Non-compliance in the Phase II counties was initially higher than the that in Phase I. There was no change in speed variance or accident frequency for either Phase.

Administrative Evaluation

The performance data such as: manhours, enforcement activities, and project costs, indicate that the project was an effective means of increasing enforcement in areas of higher non-compliance with the 55 MPH NMSL. The effectiveness was essentially the same regardless of the method of selection of the county for participation.

Recommendations

Based on the conclusions reached in this study, the following recommendations are made:

1. That funds continue to be made available for overtime enforcement activities, but that the funds be allocated to fewer target roadways with increased enforcement man-

hours devoted to each. The enforcement manhours devoted to target roadways should be in excess of 4 hours per mile of roadway per month.

2. The method of selection of target counties should be at the discretion of the Department and the DPS, however, roadways within each county selected for increased enforcement should have high volumes (for maximum exposure) and high non-compliance (greater than 60%) in order to maximize the potential impact.
3. Speed sampling should also take place during peak commuter periods in order to maximize the likelihood of measuring the effect of enforcement.

1.0 INTRODUCTION

As part of the continuing effort to obtain compliance with the 55 MPH National Maximum Speed Law (NMSL), the Texas Department of Public Safety has implemented a series of overtime speed enforcement projects on rural highways zoned for 55 MPH. Although overtime selective traffic enforcement programs (STEPS) had been used in Texas for other types of violations they were not applied to speed control until 1979 when the U.S. Congress set aside special funds specifically for that purpose. Since 1979 these funds, administered by the Traffic Safety Section (TSS) of the State Department of Highways and Public Transportation (SDHPT), have been used each year to conduct speed STEPS of various sizes and durations throughout the state.

This legislative action came after a period when compliance with the NMSL had dropped to its lowest point since its enactment in 1974. Figure 1.1 presents the percentages of vehicles being driven at or below the speed limit from 1969 to 1983. It also presents the percentages of vehicles traveling at or below 5 mph over the speed limit. This figure was developed from speed survey data collected by SDHPT. These surveys, which are conducted each quarter, are compiled annually to provide a representative sample of speeds statewide on roadways zoned for 55 MPH. As can be seen in this figure, there was a steady increase in compliance from 1978 to 1982. During this period, speed STEP projects were conducted on target roadways in selected

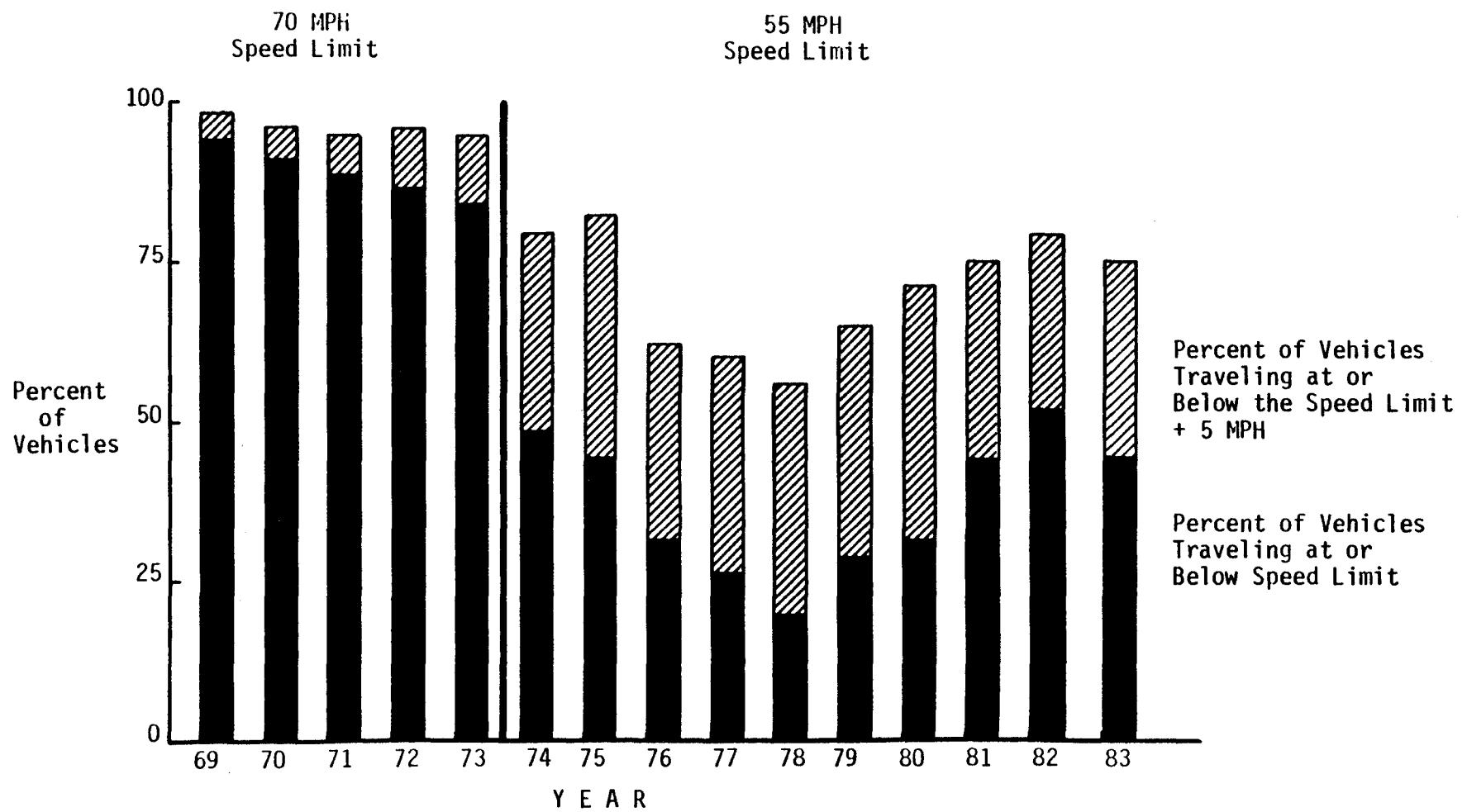


FIGURE 1.1 Percent of Vehicles in Texas traveling at or Below the Speed Limit and at or Below the Speed Limit Plus 5 MPH

counties. Evaluation of the impact of these projects on traffic speeds has demonstrated that, in general, they produce significant reductions in non-compliance (See Table 1.1). In the instance where a reduction was not observed, it was suggested that the concentration of enforcement manpower was not sufficient to create a measurable change.

The word measurable should be explained since the presence of an enforcement vehicle on a given roadway almost without exception produces a reduction in traffic speeds in its vicinity. The magnitude and the extent of this speed reduction effect depend on the configuration of the vehicle (stationary, moving, arrest, etc.) and the prior history of enforcement presence on the roadway. This immediate effect of enforcement is easily measured. However, the objective of STEPS is to create long term reductions in traffic speeds on target roadways. In order for this to occur, enforcement vehicles must be deployed with sufficient frequency over a long enough period of time to develop a reduction in traffic speeds when no enforcement vehicle is present. This approach presupposes that there are a number of repeat drivers on the roadway who are able to detect the increase in enforcement activity and will consequently adjust their driving behavior.

When evaluation of speed STEPS are conducted, speed measurements are taken in the absence of enforcement to measure the enforcement "carry-over" effect. When, after a period of enforcement, no speed reduction effect is detected, it does not imply that the

TABLE 1.1 RESULTS OF PREVIOUS 55 MPH STEPS

Year	Number of Counties	Duration (Months)	Percent Change in Vehicles Exceeding 55 MPH	Percent Change in Accidents on Treated Roadways		Cost (in dollars)
				PDO	Fatal & Injury	
1979	6	4 (Aug-Dec)	-12.9	-17.3	-29.4	455,000
1980	6	8 (Jan-Aug)	-10.9	-11.9	-13.3	631,659
1981	27	7 (Feb-Aug)	No Change	+12.7	+11.6	1,216,455
1982	19	4 (Apr-Aug)	-6.2	-13.3	-10.2	918,936
1983	11	3 (June-Aug)	+3.8	-8.3	No Change	309,488

enforcement application had no effect on traffic speeds, but rather that no "carry-over" effect was created.

The absence of a measurable "carry-over" effect could be attributable to many factors including: taking speed samples too long after enforcement application, and low speeds on the roadway initially. An understanding of these potential sources of bias is necessary to temper the findings of project evaluations.

They were considered in the evaluation of the DPS 55 STEP activities for 1983 which involved increased enforcement in 11 Texas counties. This evaluation indicated an average increase of 3.8 percent from the previous year in the number of motorists exceeding 55 MPH. However, the 1983 statewide figures indicated a 15.5 percent increase in the same category. Thus, although the increased enforcement activity did not reduce non-compliance, it is possible that it slowed its growth rate where it was employed. This possibility is supported by the observed average reduction of 8.7 percent in the number of motorists exceeding 60 MPH on the targeted roadways.

It has been suggested that the non-compliance observed in 1983 would continue to increase in 1984 (Brackett and Carnahan, 1984). In view of this possibility, and because of favorable funding conditions, the SDHPT approved a multi-phased program of increased 55 NMSL enforcement projects. This program included two rural enforcement projects conducted by the DPS. Phase I involved 440 miles

of rural roadways in seven counties for six months. Phase II involved an additional 482 miles of rural roads in 13 other counties for a three month period.

1.1 Project Goal and Requirements

The goal of the 55 MPH STEP projects was to obtain 50 percent compliance with the speed law on targeted roadways. In implementing increased enforcement to achieve this goal, certain operational requirements had to be satisfied. These included:

1. That not less than 95 percent of the enforcement manhours provided for in the operational plans be deployed.
2. That not less than 80 percent of the enforcement manhours charges to the project were deployed at the STEP sites in the performance of directly related duties.
3. That an average violator contact rate of not less than 1.0 per hour be maintained.

The objective of the evaluation of the 55 NMSL STEP projects conducted in 1984 was to determine the effects of the increased enforcement activities. The effects considered can be categorized as either impact effects, such as reductions in speeding behavior and reductions in accidents, or as administrative effects, such as increased patrol hours, ticketing activities and travel mileage.

The results of the impact and administrative evaluations are presented after a brief description of how the increased enforcement was implemented.

2.0 IMPLEMENTATION PLAN

The Evaluation of 55 Enforcement Activities was divided into three periods. The first, pre-treatment, was initiated in February, 1984 for the Phase I counties and April, 1984 for the Phase II counties. During the pre-treatment period speed samples were taken on roadways in the absence of enforcement to, first, gauge the degree of driver non-compliance with the 55 MPH NMSL and secondly, to determine baseline speed measures for future comparisons. The baseline measures provided points of reference that allowed assessment of changes in traffic speeds as a result of increased enforcement activities.

The second period, enforcement, lasted from March 1st to August 31st, 1984 for the Phase I counties and from May 1st to July 31st, 1984 for the Phase II counties. The enforcement phase consisted of increased patrol activity on target roadways. The Texas Transportation Institute (TTI) collected interim speed samples in May and June for the Phase I counties to access trends in speed parameter data and to provide feedback to the enforcement agency for use in the allocation of enforcement resources. No interim speed samples were taken for the Phase II counties because the enforcement period was of short duration.

The final phase, post-treatment, occurred in August for the Phase II counties and in September for the Phase I counties, beginning the first of the month in each case and lasting for approximately 2 weeks.

During post-treatment, speed surveys were conducted using the same sampling procedures employed in the pre-treatment phase.

Before beginning the pre-enforcement period in each Phase it was necessary to select the counties that were to receive increased enforcement. The procedures used to select the counties in Phase I differed from those used in selecting the Phase II counties. These selection procedures will be addressed in the following section.

2.1 Target County Selection

Phase I -Target county selection was based, in part, on an analysis of speed related accident rates across all counties in the State of Texas. This analysis was performed to highlight counties with a potential speed-law non-compliance problem. The accident data used in the analysis was collected for the period of September, 1982 through August, 1983 for rural accidents, as well as those which occurred in cities of less than 5,000 population.

An index was derived from the accident information that indicated the degree of accident over-representation for a county when compared to other counties in the state. Over-representation refers, in this context, to the occurrence of more speed-related accidents than would be expected based on the number of vehicle miles traveled in the county. This index was then multiplied by the vehicle miles driven to illustrate

the severity of the over-representation in terms of vehicle miles traveled.

Each county in the state was evaluated in this manner and ranked from high to low in terms of its potential speed non-compliance reduction. Appendix A presents the precise formulation of the over-representation index and the project county selections from the ranking.

All of the seven counties selected for increased enforcement using this procedure were from the top 25 in the accident evaluation listing. The final county selections were as follows:

- | | | |
|-------------|--------------|---------------|
| 1. Burnet | 2. Galveston | 3. Grimes |
| 4. Harrison | 5. Val Verde | 6. Williamson |
| | 7. Wise | |

Phase II -Target counties for Phase II were selected by the DPS Captains and Sergeants based on the availability of manpower and the perceived speeding problem. The counties selected in this Phase were as follows:

- | | | |
|--------------|---------------|-------------|
| 1. Bastrop | 2. Bowie | 3. Chambers |
| 4. Denton | 5. Ellis | 6. Harris |
| 6. McClellan | 8. Madison | 9. Nolan |
| 10. Sutton | 11. Van Zandt | 12. Waller |
| | 13. Wharton | |

2.2 Roadway Selection

The selection of roadways within each target county was based on two criteria. Preliminary selections were made based on an assessment by target county sergeants of county speed-law non-compliance patterns. Following the preliminary selection, TTI field personnel traveled to each county and sampled speeds to eliminate those roadways with no significant problems. This combined approach allowed the selection of roadways with a demonstrated speed-law non-compliance problem.

2.3 Manpower Allocation

Previous research in the area of rural overtime speed-law enforcement has shown that an effective range of manpower allocation is between 2 and 4 manhours per mile of roadway per month (Roop and Brackett, 1980). This range was used to guide the allocation of manpower on the present project. Appendix B lists the proposed allocation of manpower for each target county in the study.

2.4 Deployment Schedules

The designated days and time periods of increased enforcement were established by target county sergeants based on their assessment of area

needs. Accident data, speed-law non-compliance information and manpower capabilities were used to develop and finalize monthly patrol schedules. The deployment schedules for each county are listed in Appendix B.

2.5 Patrol Procedures

The patrol methods employed in the study were the same as those employed during normal enforcement. Officers patrolled segments of target roadways for pre-determined times to reduce speeds. Both moving and stationary patrols were used.

3.0 IMPACT EVALUATION

Since the goal of the 55 MPH NMSL STEP projects was to achieve 50 percent compliance with the speed law, the primary evaluation measure was the percentage of motorists exceeding the speed limit on the targeted roadways. Other speed parameters were collected and are presented as supplementary information. Accident data was also used to assess the impact of the increased enforcement.

3.1 Speed Surveys

Speed surveys were conducted on target roadways in the Phase I counties during each of the project periods. In the Phase II counties, speeds were sampled during the pre-treatment period and the post-treatment period. Each roadway was surveyed at the same time of day and same day of the week for each period. It should be noted that only a small fraction of the possible hours of increased patrol activity were sampled. The dates for the speed surveys on each roadway are presented in the comment section of the survey summary sheets found in Appendix C.

Speed surveys were conducted using Kustom KR-11 radar sets manufactured by Kustom Electronics, Inc. Each set was mounted on the dash of an unmarked research vehicle and was relatively inconspicuous.

The radar units contain a built-in statistical package which enabled evaluation of traffic parameters during the sampling procedure and as facilitated the compilation of summary data. The units were used in the moving mode, collecting speeds of oncoming vehicles. Like most radars, they have a tendency to lock on the largest and/or fastest moving vehicles, consequently the speed distributions tend to be somewhat skewed to the higher range.

The speed data collected in each period for each project Phase was used to make a pre/post comparison of the effectiveness of increased enforcement on traffic parameters in the target areas. Data obtained during the pre-treatment periods served as a baseline for comparison with data obtained during the post-treatment period. In addition to these comparisons, the SDHPT quarterly speed monitoring report was used to note the trend in speeds across the state as a whole.

3.2 Results of Speed Surveys

The percentage of motorists exceeding 55 MPH was used for three levels of prepost comparisons for each Phase. An initial comparison was made to determine if enforcement had an effect on the the treatment area as a whole. This comparison was based on the combined data from each county.

The effect within a county was then examined by pooling the data from each target roadway within that county. This allowed a closer

examination of differential effects due to either implementation of enforcement activities or to the response of the driving population.

Finally, individual roadways within each county were examined to assess the effects of enforcement on particular roadways and across roadway types.

3.2.1 Phase I

The results for the treatment region indicate that non-compliance decreased slightly (67.17% to 66.32%) from pre- to post-treatment sampling (Table 3.1). This decrease was not statistically significant ($p < .05$). The data on Table 3.1 does indicate significant reductions in mean speed and the percentage of motorists exceeding 60 and 65 MPH. The change in speed variance was not statistically significant.

The analysis by treatment county indicates that of the seven Phase I counties sampled for pre/post comparison, four showed no significant change in the level of non-compliance while two showed a statistically significant decrease and one a significant increase. Of the four counties that did not change, two had slight decreases and two had slight increases in the percentage of motorists exceeding 55 MPH. Data for the individual counties can be found in Appendix C.

An analysis of the individual roadways indicated that of the 24 roadways sampled, one had a statistically significant decrease in

TABLE 3.1 PRE/POST COMPARISON USING
COMBINED DATA FROM ALL COUNTIES

PHASE I

	Mean Speed	Variance	N	%>55	%>60	%>65
PRE	58.48	33.52	4370	67.17	34.06	8.3
POST	57.87*	30.58	3817	66.32	27.86*	5.21*

PHASE II

	Mean Speed	Variance	N	%>55	%>60	%>65
PRE	59.75	31.36	5412	76.77	40.84	10.53
POST	59.29*	28.84	4591	75.29*	36.79*	9.00*

*Significant Decrease
(P<.05)

non-compliance, one had a significant increase and the remainder experienced no significant change. Data for the individual roadways can be found in Appendix C.

An analyses of the percentage of motorists exceeding 60 MPH indicate that six of the seven counties experienced decreases, four of which were statistically significant. Further, 16 of the 24 roadways experienced decreases in the percentage of motorists exceeding 60 MPH. Five of the decreases were significant.

3.2.2 Phase II

The results for the treatment region indicate that like the Phase I region, non-compliance in the Phase II counties decreased slightly (76.77% to 75.29%) from pre- to post-treatment sampling (Table 3.1). However, this decrease was statistically significant ($p<.05$). Again the data on Table 3.1 does indicate significant reductions in mean speed and the percentage of motorists exceeding 60 and 65 MPH. The change in speed variance was not staistically significant.

The analysis by treatment county indicates that of the 13 Phase II counties sampled for prepost comparison, seven showed no significant change in the level of non-compliance while four showed statistically significant decreases and two significant increases. Of the seven counties that did not change, two had slight decreases, one remained the same and four had slight increases in the percentage of motorists

exceeding 55 MPH. Data for the individual counties can be found in Appendix C.

An analysis of the individual roadways indicated that of the 27 roadways sampled, five had statistically significant decreases in non-compliance, four had a significant increase and the remainder experienced no significant change. Data for the individual roadways can be found in Appendix C.

Analyses of the percentage of motorists exceeding 60 MPH indicate at that nine of the 13 counties experienced decreases after enforcement. Four of these were statistically significant ($p < .05$). There were no significant increases. Twenty of the 27 Phase II roadways experienced decreases in the percentage of motorists exceeding 60 MPH. Six of these decreases were significant. Four roadways experienced significant increases.

3.2.3 Statewide Speeds

The speed surveys conducted by the SDHPT indicated that from the quarter ending in March to the quarter ending in September, the percentage of motorists exceeding 55 MPH increased by 1.6% (54.9% to 55.8%). There were also increases in mean speeds and in the percentage of motorists exceeding 60 MPH (see Table 3.2). These surveys suggest that non-compliance was increasing statewide during the same period that increased enforcement was taking place in selected counties.

TABLE 3.2 STATEWIDE QUARTERLY SPEED SURVEYS

Quarter	Mean	%>55	%>60	%>65
Jan Feb Mar	55.7	54.9	25.7	9.9
July Aug Sep	56.1	55.8	27.7	9.8

3.3 Accident Experience

The impact of increased enforcement activities on accidents was evaluated by comparing the percentage change in accident frequency for the enforcement period and a like period one year earlier for treatment and control counties. Counties which had similar rankings to the treatment counties in terms of speed related accidents but had no increased enforcement were selected for the control groups. Different counties were selected for the Phase I and Phase II control groups. The counties selected are listed in Table 3.3.

Comparisons using control counties were made for all accidents, regardless of causative factors, occurring countywide, and countywide speed related accidents. Comparisons were also made using all accidents and speed related accidents on treatment roadways. There were no control road segments, consequently, these are simply pre-treatment/treatment comparisons.

In all comparisons the combined injury and fatal accident frequencies were used because these provided the most stable basis. Because of consistency of reporting changes in property damage accident frequencies are presented for information purposes only.

TABLE 3.3 CONTROL COUNTIES SELECTED FOR ACCIDENT COMPARISONS

Phase I

Collin	Leon
Comal	Montgomery
El Paso	Walker
Hutchinson	

Phase II

Aransas	Hill	Refugio
Brazos	Jackson	Smith
Carson	Jasper	Washington
Erath	Milam	Wilbarger
Grayson		

3.3.1 Phase I

Injury and fatal accidents occurring countywide increased for the treatment counties by 9.4 percent (540 to 591) from 1983 to 1984. During this same period, injury and fatal accidents in the control counties increased 3.2 percent (782 to 807). Countywide speed related injury and fatal accidents increased 18.7 percent (91 to 108) from 1983 to 1984 for the treatment counties. The control counties experienced a 1.6 percent increase (see Table 3.4).

On the treatment roadways, both all injury and fatal accidents and speed related injury and fatal accidents decreased from 1983 to 1984. All injury and fatal accidents decreased 2.1 percent (192 to 188) and speed related accidents decreased 3.7 percent (see Table 3.6). These decreases are too small to be considered anything other than random fluctuation.

3.3.2 Phase II

Injury and fatal accidents occurring countywide increased for the treatment counties by 1.6 percent (1196 to 1215) from 1983 to 1984. During the same period the control counties experienced an 8.6 percent increase (384 to 417). Countywide speed related injury and fatal accidents increased 9.1 percent (99 to 108) in the treatment counties and 11.1 percent (45 to 50) in the control counties.

TABLE 3.4 COUNTYWIDE ACCIDENTS FOR PHASE I AND CONTROL COUNTIES

All Accidents

T R E A T M E N T C O U N T I E S			C O N T R O L C O U N T I E S			
Accident Type	Pre-Treatment (1983)	Treatment (1984)	% Change	Pre-Treatment (1983)	Treatment (1984)	% Change
Property Damage	940	862	-8.3	1044	1064	+1.9
Injury	500	553	+10.6	735	757	+2.9
Fatal	<u>40</u>	<u>38</u>	<u>-5.0</u>	<u>47</u>	<u>50</u>	<u>+2.5</u>
TOTAL	1480	1453	-1.8	1826	1871	+2.5

Speed Related Accidents

T R E A T M E N T C O U N T I E S			C O N T R O L C O U N T I E S			
Accident Type	Pre-Treatment (1983)	Treatment (1984)	% Change	Pre-Treatment (1983)	Treatment (1984)	% Change
Property Damage	66	56	-15.2	68	66	-2.94
Injury	73	92	+26.0	119	119	-0-
Fatal	<u>18</u>	<u>16</u>	<u>-11.1</u>	<u>13</u>	<u>15</u>	<u>15.4</u>
TOTAL	157	164	+4.5	200	200	-0-

TABLE 3.5 COUNTYWIDE ACCIDENTS FOR PHASE II AND CONTROL COUNTIES

All Accidents

T R E A T M E N T C O U N T I E S			C O N T R O L C O U N T I E S			
Accident Type	Pre-Treatment (1983)	Treatment (1984)	% Change	Pre-Treatment (1983)	Treatment (1984)	% Change
Property Damage	1943	2014	+3.79	535	528	-1.3
Injury	1147	1157	+0.9	357	387	+8.4
Fatal	<u>49</u>	<u>58</u>	<u>+18.4</u>	<u>27</u>	<u>30</u>	<u>+11.1</u>
TOTAL	3139	3229	+2.9	919	945	+2.8

27

Speed Related Accidents

T R E A T M E N T C O U N T I E S			C O N T R O L C O U N T I E S			
Accident Type	Pre-Treatment (1983)	Treatment (1984)	% Change	Pre-Treatment (1983)	Treatment (1984)	% Change
Property Damage	81	62	-23.5	18	21	+16.7
Injury	89	95	+6.7	37	40	+8.1
Fatal	<u>10</u>	<u>13</u>	<u>+30.0</u>	<u>8</u>	<u>10</u>	<u>+25.0</u>
TOTAL	180	170	-5.6	63	71	+12.7

TABLE 3.6 ACCIDENTS ON TREATMENT ROADWAYS FOR PHASE I AND PHASE II COUNTIES

All Accidents

Accident Type	PHASE I COUNTIES			PHASE II COUNTIES		
	Pre-Treatment (1983)	Treatment (1984)	% Change	Pre-Treatment (1983)	Treatment (1984)	% Change
Property Damage	368	319	-13.3	233	258	+10.7
Injury	179	176	- 1.7	165	184	+11.5
Fatal	<u>13</u>	<u>12</u>	<u>- 7.7</u>	<u>11</u>	<u>11</u>	<u>-0-</u>
TOTAL	560	507	- 9.5	409	453	+10.8

Speed Related Accidents

Accident Type	PHASE I COUNTIES			PHASE II COUNTIES		
	Pre-Treatment (1983)	Treatment (1984)	% Change	Pre-Treatment (1983)	Treatment (1984)	% Change
Property Damage	27	19	-29.6	9	12	+33.3
Injury	21	23	+ 9.5	11	18	+63.6
Fatal	<u>6</u>	<u>3</u>	<u>-50.0</u>	<u>1</u>	<u>1</u>	<u>-0-</u>
TOTAL	54	45	-16.7	21	31	+47.6

On the roadways selected for increased enforcement, all injury and fatal accidents increased by 10.8 percent (176 to 195). Speed related injury and fatal accidents increased from 12 to 19 (58.3%). These results, presented in Table 3.6, suggest that the speed reductions observed did not influence accident frequencies.

4.0 ADMINISTRATIVE EVALUATION

The administrative evaluation was based upon several sources of information. This discussion includes data regarding manhours spent on patrol and in supervisory capacities; contact and arrest activities; operational, administrative, and judicial costs. These variables are discussed in terms of the levels of effort and expenditures incurred beyond those under normal operations and to similar enforcement efforts in other areas of the State of Texas.

4.1 Data Collection

The Statistical Services and Accounting Sections of the DPS collected most of the data used in the administrative evaluation. The project staff collected the remaining data. The following sections summarize the data collected.

4.1.1 Manhours

The manhours devoted to project activities can be categorized as enforcement hours or administrative hours. Table 4.1 presents the enforcement manhours planned and the actual manhours worked during the project period for Phase I and Phase II. As can be seen on this table, the percentage of actual to planned enforcement hours is

TABLE 4.1 STEP ENFORCEMENT HOURS
Planned vs. Actual

PHASE I

	Mar		Apr		May		June		July		Aug		TOTAL	
	Planned	Actual												
Burnet	403	403	411	413	440	445	550	543	412	409	518	488	2734	2701
Galveston	390	380	362	390	364	390	416	416	400	320	230	1906	2152	
Grimes	320	320	320	320	320	320	400	400	320	320	288	288	1968	1968
Harrison	456	456	384	384	392	392	480	464	336	336			2048	2032
Val Verde	400	320	320	320	320	312	400	384	320	304	320	256	2080	1896
Williamson	360	360	394	357	326	318	450	433	450	403	183	183	2163	2054
Wise			376	376	384	376	480	464	384	384	392	344	2016	1944
--TOTAL--	2329	2239	2205	2532	2572	2527	3150	3104	2638	2556	2021	1789	14915	14747

PHASE II

	May		June		July		TOTAL	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Bastrop	416	431	536	509	687	687	1639	1627
Bowie	352	344	648	648	480	480	1480	1472
Chambers	576	528	692	616	692	624	1960	1768
Denton	608	609	800	801	640	624	2048	2034
Ellis	240	241	240	240	240	240	720	721
Harris	234	232	376	352	408	400	1018	984
McLennan	600	600	600	600	600	600	1800	1800
Madison	240	224	240	256	240	240	720	720
Nolan	240	232	320	272	256	152	816	656
Sutton	320	263	400	360	320	306	1040	929
Van Zandt	352	336	440	464	320	280	1112	1080
Waller	240	240	400	392	320	312	960	944
Wharton	248	248	280	280	336	336	864	964
--TOTAL--	4666	4528	5972	5790	5539	5281	16177	15599

higher than the target value of 95 percent for both Phases. Based on data included in Appendix D, it is estimated that well over 90 percent of the enforcement hours were spent on target roadways which exceeds the goal of 80 percent. The total project hours, including administrative and enforcement hours, are presented in Table 4.2.

The number of routine enforcement hours for each project period is compared to the number of routine enforcement hours during the same months of 1983. These figures are presented in Table 4.3. In both Phases, routine enforcement in the target counties increased indicating that the increased enforcement effort did not adversely affect routine patrol.

4.1.2 Arrest Activity

The number of arrests accumulated during the project period of each phase is presented in Table 4.4. The information is presented in terms of arrests made for speed-law non-compliance and other violations. There were 16,766 speeding arrests and 5,759 other violations for a total of 22,525 arrests for the six month period of Phase I, and 20,350 arrests and 5,597 other violations for a total of 25,966 arrests in the three month period of Phase II. Table 4.5 presents the number of warnings issued during the overtime enforcement program, a total of 4,663 in Phase I and 6,969 in Phase II.

TABLE 4.2 TOTAL PROJECT HOURS

PHASE I

	Mar		Apr		May		June		July		Aug		TOTAL	
	Enforce	Admin												
Burnet	403	68	413	68	445	78	543	61	409	51	488	62	2701	388
Galveston	380	57	362	57	364	64	416	68	400	64	230	64	2152	374
Grimes	320	40	320	32	320	48	400	56	320	48	288	24	1968	248
Harrison	456	92	384	96	392	68	464	94	336	82			2032	432
Val Verde	320	24	320	36	312	48	384	53	304	67	256	70	1896	298
Williamson	360	37	357	58	318	39	433	31	403	43	183	42	2054	250
Wise			376	55	376	40	464	46	384	38	344	48	1944	227
--TOTAL--	2239	318	2532	402	2527	385	3104	409	2556	393	1789	310	14747	2217

PHASE II

	May		June		July		TOTAL	
	Enforce	Admin	Enforce	Admin	Enforce	Admin	Enforce	Admin
Bastrop	431	66	509	71	687	137	1627	274
Bowie	344	79	648	94	480	129	1472	302
Chambers	528	72	616	120	624	104	1768	296
Denton	609	116	801	153	624	130	2034	399
Ellis	241	32	240	32	240	24	721	88
Harris	232	32	352	48	400	48	984	128
McLennan	600	72	600	88	600	80	1800	240
Madison	224	24	256	48	240	33	720	105
Nolan	232	32	272	48	152	42	656	122
Sutton	263	73	360	81	306	57	929	211
Van Zandt	336	62	464	58	280	60	1080	180
Waller	240	24	392	56	312	24	944	104
Wharton	248	48	280	86	336	74	864	208
--TOTAL--	4528	732	5790	983	5281	942	15599	2657

TABLE 4.3 ROUTINE ENFORCEMENT HOURS

PHASE I

	Mar 1983	1984	Apr 1983	1984	May 1983	1984	June 1983	1984	July 1983	1984	Aug 1983	1984	TOTAL 1983	1984
Burnet	449	419	451	433	406	570	315	391	483	365	356	370	2460	2548
Galveston	1144.5	1517.5			1185	1060	936	1183	630	1299	640	1333	4535.5	6392.5
Grimes	218	336	262	224	302	212	229	236	360	272	230	284	1601	1564
Harrison	842	910	739	760	799	664	680	935	856	645			3916	3914
Val Verde	311	317	399	289	246	260	440	249	516	330	245	279	2157	1724
Williams	1626	1755	1388	1341.5	1201	1110	918	1355	1048	1103	2304	2477.5	8485	9142
Wise			670	696	588	597	537	788	620	884	600	935	3015	3900
--TOTAL--	4590.5	5254.5	3909	3743.5	4727	4473	4055	5137	4513	4898	4375	5678.5	26169.5	29184.5

PHASE II

	May 1983	1984	June 1983	1984	July 1983	1984	TOTAL 1983	1984
Bastrop	2050	2193.5	493	402	459	416	3002	3011.5
Bowie	956	917	780	769	957	836	2693	2522
Chambers			752	697	592	446	1344	1143
Denton	2002	2099	2160	2296	2373	1676	6535	6071
Ellis	1643	1487	1585	1457	1671	1664	4899	4608
Harris	1200	1232	1256	1016	1048	1184	3504	3432
McLennan	1265	1120	1202	1140	1379	1232	3846	3492
Madison	451	409	460	426	522	485	1433	1320
Nolan	602	305	495	373	633	368	1730	1046
Sutton	314	77	284	47	499	137	1097	261
Van Zandt	840	856	1050	936	854	845	2744	2637
Waller	376	179	291	200	385	400	1052	779
Wharton	803	1018	705	1008	754	807	2262	2833
--TOTAL--	12502	11892.5	11513	10767	12126	10496	36141	33155.5

TABLE 4.4 CITATIONS BY MONTH
(Overtime)

PHASE I

	Mar		Apr		May		June		July		Aug		TOTAL	
	Speed	Other												
Burnet	582	197	530	151	607	208	842	198	675	132	785	210	4021	1096
Galveston	216	63	179	157	194	325	273	432	252	134	157	262	1271	1345
Grimes	441	45	425	62	365	60	478	68	373	55	363	50	2445	340
Harrison	599	76	524	57	486	54	613	57	341	38			2563	282
Val Verde	279	61	254	54	224	52	235	63	207	55	218	58	1417	343
Williamson	652	242	655	305	542	234	591	391	562	341	212	154	3214	1667
Wise			407	159	337	151	424	153	349	120	318	103	1835	686
--TOTAL--	2769	684	2974	945	2755	1084	3456	1362	2759	875	2053	837	16766	5597

PHASE II

	May		June		July		TOTAL	
	Speed	Other	Speed	Other	Speed	Other	Speed	Other
Bastrop	699	386	799	439	1370	763	2868	1588
Bowie	492	76	984	119	615	96	2091	291
Chambers	627	200	687	177	638	266	1952	643
Denton	481	336	538	335	399	276	1418	947
Ellis	488	72	506	73	470	64	1464	209
Harris	362	82	469	139	399	135	1230	356
McLennan	970	97	813	125	811	175	2594	397
Madison	227	43	240	76	262	79	729	198
Nolan	433	48	463	43	250	29	1146	120
Sutton	184	37	231	47	149	26	564	110
Van Zandt	522	71	732	92	432	39	1686	194
Waller	358	59	700	186	463	136	1521	381
Wharton	300	51	380	59	407	63	1087	173
--TOTAL--	6143	1558	7542	1910	6665	2147	20350	5607

TABLE 4.5 WARNINGS ISSUED BY MONTH

PHASE I

	March	April	May	June	July	August	TOTAL
Burnet	157	119	104	134	69	100	683
Galveston	137	140	106	109	96	97	685
Grimes	76	53	62	75	75	49	390
Harrison	97	109	74	106	132		518
Val Verde	152	126	128	168	114	101	789
Williamson	115	97	90	112	125	42	581
Wise		186	243	283	190	155	1047
--TOTAL--	734	830	807	987	801	544	4693

PHASE II

	May	June	July	TOTAL
Bastrop	202	182	351	735
Bowie	151	252	196	599
Chambers	228	238	206	672
Denton	265	329	333	927
Ellis	111	77	97	285
Harris	97	216	157	470
McLennan	208	196	207	611
Madison	154	184	142	480
Nolan	146	137	54	337
Sutton	126	188	115	429
Van Zandt	99	117	90	306
Waller	103	155	108	366
Wharton	255	220	277	752
--TOTAL--	2145	2491	2333	6969

TABLE 4.6 SUMMARY OF ROUTINE PATROL SPEED
ARREST ACTIVITY

PHASE I

MONTH	1983	1984
March	3745	4016
April	3342	5021
May	3708	3516
June	3266	4144
July	3938	3767
August	3538	4718
--TOTAL--	21537	25182

PHASE II

MONTH	1983	1984
May	8116	8504
June	7960	7081
July	9471	8004
--TOTAL--	25547	23589

The project was designed to insure that normal enforcement operations did not decline as a result of the overtime activity. Table 4.6 shows that number of speed citations issued under normal enforcement activity for the project period and for the same months of 1983. In 1983 during Phase I there were 21,537, and during Phase II, 25,547 routine speeding arrests. In 1984, 25,182 speeding arrests were made in Phase I, and 23,589 in Phase II, or 3,645 more speeding citations, an increase of 17% in Phase I, and a decrease of 1,958 speeding citations in Phase II, a decrease of 8%.

4.1.3 Miles Driven

The miles driven by the troopers in each county are listed in Table 4.7. These figures reflect only the mileage charged to either phase of this project. Total project mileage was 300,882 for Phase I and 325,875 for Phase II.

4.1.4 Costs

The approximate expenditure during both project phases was \$813,200. This figure represents operational costs (including first line supervision) and administrative costs, excluding judicial cost increase associated with the increased case load the project generated. The judicial costs cannot be accurately estimated. It is assumed that whatever the amount of revenue generated for the county

TABLE 4.7 PROJECT MILEAGE BY MONTH

PHASE I

	March	April	May	June	July	August	TOTAL
Burnet	8725	8537	10188	10453	8934	9686	56523
Galveston	7736		6257	7727	7975	5446	35141
Grimes	7359	7170	7299	8754	6876	6077	43535
Harrison	7314	6303	6809	7492	5571		33489
Val Verde	8263	8112	8834	9274	8267	7644	50394
Williamson	7643	7923	6710	8999	8861	4827	44963
Wise		7118	8108	8094	7157	6360	36837
--TOTAL--	47040	45163	54205	60793	53641	40040	300882

PHASE II

	May	June	July	TOTAL
Bastrop	11426	10257	23026	44709
Bowie	7297	10206	8675	26178
Chambers	12672	13718	15075	41465
Denton	11879	14023	10685	36587
Ellis	3703	4502	4538	12743
Harris	5206	7483	7026	19715
McLennan	13879	14002	14019	41900
Madison	4081	4869	4763	13713
Nolan	5322	4894	3419	13635
Sutton	7303	6951	6050	20304
Van Zandt	7796	8373	5923	22092
Waller	4035	5987	5006	15028
Wharton	6283	5104	6419	17806
--TOTAL--	100882	110369	114624	325875

by fines imposed resulting from arrests offset these costs. This figure also includes salaries, per diem, mileage and miscellaneous costs.

4.2 Cost and Effectiveness Comparisons

The information presented in the previous section indicates that, while small reductions were observed in the percentage of vehicles exceeding 55 MPH, no accident reductions were experienced. The information presented thus far in this section indicates that the patrol activity also incurred substantial cost. Certainly, cost can be expressed in many ways, but for purposes of understanding the relative efficiency of this particular enforcement technique, cost is assessed by performance activity, and rating the dollar value of those activities. Cost-benefit ratios cannot be developed because no accident reduction was observed.

4.2.1 Performance

Performance can be measured by comparing the rate of occurrence of contact and arrest activities during each project phase with that occurring in the state at large. The bases for establishing these rates are hours and miles. The data used to develop the statewide rates are included in Appendix E, and the performance comparisons are presented in Table 4.8.

TABLE 4.8 PERFORMANCE COMPARISON
PHASE I

RATE	PROJECT	STATEWIDE	% DIFFERENCE
Contact/ Manhour	2.89	1.15	+151
Arrest/ Manhour	2.51	0.67	+275
Miles/ Contact	8.44	24.00	-64.8
Miles/ Arrest	9.72	31.68	-69.3

PHASE II

RATE	PROJECT	STATEWIDE	% DIFFERENCE
Contact/ Manhour	2.11	1.15	+83.5
Arrest/ Manhour	1.66	0.67	+148
Miles/ Contact	9.89	24.00	-58.8
Miles/ Arrest	12.55	31.68	-60.4

As can be seen in this table, contacts and arrests per manhour are higher for each project phase than for the statewide averages and exceeded the performance objective of 1.0 contacts per manhour. This is understandable since the project manpower was geared to produce this type of activity. Thus, these rates represent a concentration of arrests to the exclusion of other duties such as processing warrants, court time, and accident investigation work. The reduction in miles per contact and per arrest also reflects this concentration.

4.2.2 Unit Cost of Activity

The cost per contact and arrest also provides a means of comparing the effectiveness of the project operation. The statewide costs can be computed using the average salaries of the troopers and the associated travel mileage according to the following formula:

$$\begin{aligned}\text{Average Cost/Contact} = & (\text{average hourly wage} \times \text{hours/contact}) + \\ & (\$.20 \times \text{miles/contact})\end{aligned}$$

A similar formula can estimate the average cost per arrest. The data base for determining these figures is included in Appendix E. Table 4.9 presents the unit cost of enforcement figures.

TABLE 4.9 ESTIMATED UNIT COST OF ENFORCEMENT

	<u>PROJECT</u>	<u>STATEWIDE</u>
Average Cost Per Contact*	\$11.85	\$16.74
Average Cost Per Arrest	\$14.29	\$22.10

*Contacts are defined as arrests plus warnings.

4.2.3 Adjudication

Another means of assessing effectiveness involves the number of convictions obtained for STEP arrests. This provides an indication of how well the projects were received by the court systems of each county. The Target conviction percentage for this effort was 85 percent. The actual conviction percentages are presented in Table 4.10 for each Phase. Overall the actual is far below the target. This, unfortunately, is due to a lag in the adjudication process. There is often a delay of 30-90 days between arrests and trial. The figures presented in Table 4.10 include the number of convictions obtained at the end of August. The conviction percentages will undoubtedly increase with time.

TABLE 4.10 CONVICTIONS OF STEP ARRESTS
(Sept. 1984)

PHASE I

County	STEP Charges Filed	STEP Charges Convicted	%
Burnet	4021	568	14.1
Galveston	1271	100	7.9
Grimes	2445	1470	60.1
Harrison	2563	1646	64.2
Val Verde	1417	107	7.6
Williamson	3214	317	9.9
Wise	1835	857	46.7
--TOTAL--	16766	5365	31.9

PHASE II

County	STEP Charges Filed	STEP Charges Convicted	%
Bastrop	2868	1230	42.9
Bowie	2091	1076	51.5
Chambers	1952	399	20.4
Denton	1418	305	21.5
Ellis	1464	704	48.1
Harris	1230	230	18.7
McLennan	2594	2256	87.0
Madison	729	218	30.2
Nolan	1146	732	63.9
Sutton	564	275	48.8
Van Zandt	1686	1199	71.1
Waller	1521	810	53.3
Wharton	1087	233	21.4
--TOTAL--	20350	9667	47.5

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The following statements summarize the conclusions resulting from the analyses performed in Sections 3.0 and 4.0.

5.1.1 Speed Data

A decrease was observed in the percentage of vehicles exceeding 55 MPH after the enforcement period for both Phases of the project. The 1.3 percent decrease observed for Phase I was not statistically significant. The 1.9 percent decrease observed for Phase II was significant at the .05 level of probability. Both Phases experienced significant reductions in the percentage of motorists exceeding 60 MPH. The majority of counties and treated roadways within those counties in both Phases experienced decreases in this parameter. This seems to indicate that the increased enforcement effort was effective in reducing speed. However, the greatest effect was on the higher end of the speed distribution. Apparently, some motorists, when exposed to increased enforcement activity, are willing to reduce their speed to below 60 MPH but not lower than 55 MPH. This may be a function of a perceived 5 MPH "tolerance" before a citation is issued.

There was no major difference in speed reduction based on the method of selection of target counties. Those that were selected by the speed related accident method had slightly lower initial non-compliance figures (%>55) and slightly greater reductions in the percentage of motorists exceeding 60 MPH.

5.1.2 Accident Data

There was no noticeable change in speed related or total accidents on the target roadways in either Phase on a countywide basis when compared with the accident records of control counties. The slight differences in accident frequencies that were observed are probably attributable to random variations.

The low initial speed variance and lack of change after enforcement could be used as a possible explanation of this finding since, theoretically, reductions in speed variance should produce reductions in accident frequency.

5.1.3 Cost and Effectiveness

The performance data indicate that the project was an effective means of increasing the number of traffic contacts and arrests with a reasonable mileage commitment. Unit cost for the project is lower than normal enforcement figures even considering the overtime rate of

1 1/2 times the normal rate which made a significant contribution to the project figures. All initial performance objectives were satisfied.

The performance measure of conviction rate was incomplete at the time of the report due to the lag in court processing and reporting time.

5.2 Recommendations

Based on the conclusions reached in this study, the following recommendations are made:

1. That funds continue to be made available for overtime enforcement activities, but that the funds be allocated to fewer target roadways with increased enforcement man-hours devoted to each. The enforcement manhours devoted to target roadways should be in excess of 4 hours per mile of roadway per month.

2. The method of selection of target counties should be at the discretion of the Department and the DPS, however, roadways within each county selected for increased enforcement should have high volumes (for maximum exposure) and high non-compliance (greater than 60%) in order to maximize potential impact.

3. Speed sampling should also take place during peak commuter periods in order to maximize the likelihood of measuring the effect of enforcement.

REFERENCES

1. Brackett, Q. and Carnahan, T. Trends in Noncompliance with the 55 MPH Speed Limit and Gasoline Prices; ITE Journal, April 1984.
2. Roop, S. and Brackett, Q. Evaluation of Project Increased Traffic Law Enforcement, Final Report #(80)05-09-C1-AA, SDHPT, December, 1980.

APPENDIX A

SPEED RELATED ACCIDENTS

In an effort to highlight potential problem counties for speed related accidents the following ratios were produced. The accident data was collected for the period September 1982 thru August 1983. In addition only rural (population less than 5000) accidents were included. The accident file was subdivided for those accidents that had "exceeded the speed limit" as a contributing factor. These totals were collapsed across county by accident severity using injury and fatal accidents only. These county totals were used to determine the percentage of severe speed related accidents experienced by each county with respect to the total number that occurred statewide.

A similar procedure was followed to ascertain the percentage of vehicle miles traveled daily in each county with respect to the total daily mileage travel statewide.

It would be expected that if a county had 5% of the daily vehicle miles traveled in the state that it would experience 5% of the accidents.

Example 1.

$$\frac{\# \text{ of serious accidents in county}}{\# \text{ of serious accidents statewide}} = .05 \times 100 = 5\%$$

$$\frac{\# \text{ of vehicle miles traveled daily in county}}{\# \text{ of vehicle miles traveled daily statewide}} = .05 \times 100 = 5\%$$

The expected ratio of these two numbers would be one.

Example 2.

$$\frac{\% \text{ accidents}}{\% \text{ of daily vehicle miles}} = \frac{5\%}{5\%} = \frac{.05}{.05} = 1.00$$

Any county having a ratio greater than 1.00 would be having more speed related accidents than would be expected. For example, suppose county "A" had 10% of the speed related accidents and only 5% of the daily vehicle miles. Then the ratio would be 2.00 or 2 times as many accidents as would have been expected based on the vehicle miles traveled.

Example 3.

$$\frac{\% \text{ accidents}}{\% \text{ daily vehicle miles}} = \frac{10\%}{5\%} = \frac{.10}{.05} = 2.00$$

This would tend to indicate that this county should be considered for special enforcement activity, however a problem may exist when resources are limited.

Suppose two counties had the same ratio (2.00) but one county had many more vehicle miles and accidents than the other.

Example 4.

County A

$$\frac{\% \text{ accidents}}{\% \text{ daily vehicle miles}} = \frac{10\%}{5\%} = \frac{.10}{.05} = 2.00$$

County B

$$\frac{\% \text{ accidents}}{\% \text{ daily vehicle miles}} = \frac{5\%}{2.5\%} = \frac{.05}{.025} = 2.00$$

It would be prudent to invest the limited resources where the potential payoff is greater. Since the ratio simply identifies a problem some other means must be used to determine its magnitude.

One method that can do this is to multiply the daily vehicle miles traveled in a county by its ratio. This number represents the number

of vehicle miles that would be associated with a given ratio.

Example 5.

County C has 10,000 vehicle miles daily and a ratio of 2.00

$$10,000 \times 2.00 = 20,000$$

Then the county has an accident experience that would be expected from a county having 20,000 miles driven in it daily. To highlight this increase the difference is determined between the adjusted vehicle miles daily and the actual vehicle miles daily.

Example 6.

County C has 10,000 vehicle miles daily and 20,000 adjusted vehicle miles daily.

$$20,000 - 10,000 = 10,000$$

This represents a potential savings of 10,000 vehicle miles. This adjustment can be used to determine that an investment of resources should take place.

This procedure was used to select and rank order, from highest to lowest, all counties in the state by potential savings of vehicle miles. All counties are presented in the following pages.

RANKS OF THE COUNTIES FROM WORST TO BEST
FOR SPEED RELATED ACCIDENTS

RANK	COUNTY	POTENTIAL	ADJUSTED	RATIO	ACCIDENTS			DVM	MILES
		REDUCTION	DVM		INJURY	FATAL	TOTAL		
1	HARRISON	1084058	2144929	2.0219	45	8	80	1060871	371.3
2	HARRIS	1010183	7851250	1.1477	172	22	328	6841067	278.7
3	EL PASO	1008396	1578344	2.7693	31	8	60	569948	150.3
4	TRAVIS	931616	2185400	1.7430	50	4	89	1253784	241.8
5	SMITH	895041	2509162	1.5545	55	7	84	1614121	480.3
6	BANDERA	728862	849878	7.0229	18	3	37	121016	194.6
7	HENDERSON	625045	1173640	2.1394	22	7	38	548595	315.6
8	KERR	582426	930818	2.6718	17	6	33	348392	249.6
9	GALVESTON	573841	1173640	1.9567	24	5	59	599799	79.3
10	COMAL	510283	971289	2.1069	21	3	36	461006	177.2
11	BURNET	507818	890348	2.3275	19	3	42	382530	270.3
12	MONTGOMERY	501110	3035277	1.1977	66	9	115	2534167	323.7
13	SHELBY	478524	849878	2.2886	20	1	32	371354	324.5
14	JACK	472668	728467	2.8478	17	1	28	255799	257.7
15	VAL VERDE	444189	647526	3.1845	14	2	24	203337	299.1
16	LEON	410261	1011759	1.6821	21	4	36	601498	322.6
17	COLLIN	389220	971289	1.6687	22	2	50	582069	264.1
18	GRIMES	387527	728467	2.1366	15	3	33	340940	272.2
19	RUSK	377778	1092700	1.5284	23	4	45	714922	454.3
20	HUNT	361742	1133170	1.4689	25	3	48	771428	433.1
21	POLK	347218	1133170	1.4418	23	5	46	785952	327.9
22	KENDALL	315836	607055	2.0845	13	2	21	291219	152.3
23	NUECES	292016	1173640	1.3312	25	4	39	881624	295.0
24	WARD	288055	647526	1.8013	15	1	21	359471	199.7
25	HUTCHINGSON	286617	526115	2.1967	9	4	17	239498	178.6
26	WILLIAMSON	283204	1133170	1.3332	24	4	43	849966	388.1
27	HOCKLEY	279910	607055	1.8556	13	2	23	327145	319.5
28	LLANO	257062	485644	2.1246	7	5	12	228582	222.8
29	PALO PINTO	256438	728467	1.5433	16	2	23	472029	322.5
30	WALKER	252624	930818	1.3725	22	1	30	678194	244.3
31	WISE	244951	971289	1.3372	21	3	36	726338	296.0
32	MCLENNAN	233298	1133170	1.2593	26	2	47	899872	327.6
33	GRAYSON	228131	809407	1.3925	18	2	31	581276	285.4
34	WOOD	194168	566585	1.5214	10	4	22	372417	374.3
35	BOSQUE	187975	445174	1.7309	10	1	12	257199	329.8
36	THROCKMORTON	182154	242822	4.0025	6	0	8	60668	164.6
37	HOOD	180684	445174	1.6831	11	0	19	264490	150.1
38	JEFF DAVIS	177159	283293	2.6692	7	0	11	106134	220.4
39	RUNNELS	172778	404704	1.7450	9	1	13	231926	312.5
40	LAMPASAS	171558	364233	1.8904	9	0	14	192675	200.6
41	BELL	171063	1214111	1.1640	27	3	42	1043048	342.0
42	DAWSON	168264	445174	1.6076	9	2	11	276910	303.8
43	DEWITT	156300	404704	1.6292	8	2	15	248404	294.3
44	ARCHER	153354	404704	1.6101	9	1	15	251350	235.6
45	SAN SABA	151944	242822	2.6720	6	0	6	90878	204.4
46	PRESIDIO	142506	242822	2.4206	6	0	11	100316	251.1
47	DELTA	141671	242822	2.4006	4	2	10	101151	162.6
48	ERATH	139401	526115	1.3605	11	2	21	386714	348.4
49	SUTTON	131619	404704	1.4820	8	2	16	273085	212.9
50	BREWSTER	128333	242822	2.1209	6	0	6	114489	284.2
51	SCHLEICHER	126154	242822	2.0813	5	1	11	116668	175.8
52	HUDSPETH	117018	768937	1.1795	17	2	31	651919	292.8
53	DALLAS	116318	364233	1.4692	9	0	14	247915	10.3
54	COOKE	113248	607055	1.2293	12	3	25	493807	276.6
55	KINNEY	111234	202352	2.2208	5	0	7	911118	195.5
56	LEE	110294	526115	1.2652	10	3	26	415821	180.1
57	UVALDE	109441	404704	1.3707	10	0	13	295263	315.0
58	SOMERVELL	108265	202352	2.1507	4	1	11	94087	85.1
59	SHACKELFORD	103626	242822	1.7445	6	0	8	139196	168.7
60	WHEELER	102301	485644	1.2669	10	2	15	383343	228.1
61	FANNIN	99532	404704	1.3261	9	1	16	305172	404.7
62	JONES	94205	404704	1.3034	10	0	14	310499	379.0
63	COKE	93380	242822	1.6249	6	0	11	149442	167.5
64	WILLACY	91862	323763	1.3961	7	1	9	231901	210.9
65	RAINS	90163	202352	1.8037	5	0	5	112189	119.1
66	MEDINA	89850	485644	1.2270	12	0	17	395794	279.9
67	KAUFMAN	85447	1092700	1.0848	22	5	46	1007253	335.8
68	KIMBLE	84825	323763	1.3550	6	2	10	238938	254.0
69	BURLESON	84558	526115	1.1915	11	2	17	441557	222.8
70	REEVES	76863	526115	1.1711	12	1	13	449252	361.9
71	KENT	76156	121411	2.6828	3	0	3	45255	150.7
72	BROWN	74911	404704	1.2271	10	0	20	329793	297.7
73	REAL	73477	121411	2.5329	3	0	3	47934	144.3

RANKS OF THE COUNTIES FROM WORST TO BEST
FOR SPEED RELATED ACCIDENTS

RANK	COUNTY	POTENTIAL	ADJUSTED	RATIO	ACCIDENTS			DVM	MILES
		REDUCTION	DVM		INJURY	FATAL	TOTAL		
74	ROCKWALL	72416	242822	1.4250	6	0	7	170406	61.4
75	HIDALGO	72400	1578344	1.0481	38	1	75	1505944	519.4
76	DICKENS	70976	161881	1.7808	4	0	5	90905	189.8
77	EDWARDS	67827	121411	2.2658	2	1	5	53584	237.1
78	WEBB	67759	526115	1.1478	9	4	15	458356	303.1
79	MATAGORDA	67441	607055	1.1250	14	1	24	539614	303.2
80	MILAM	66871	526115	1.1456	13	0	21	459244	312.7
81	DENTON	65413	1011759	1.0691	21	4	44	946346	284.6
82	TERRELL	57279	121411	1.8931	2	1	4	64132	161.7
83	CROSBY	56539	202352	1.3877	3	2	6	145813	246.0
84	ROBERTS	54769	121411	1.8218	3	0	6	66642	112.5
85	CAMERON	54151	1133170	1.0502	20	8	52	1079019	415.0
86	CALHOUN	51944	323763	1.1911	8	0	13	271819	156.2
87	WINKLER	47281	202352	1.3049	4	1	9	155071	128.1
88	STONEWALL	47053	121411	1.6328	2	1	4	74358	148.0
89	ROBERTSON	43701	364233	1.1363	6	3	12	320532	272.9
90	BASTROP	42706	647526	1.0706	16	0	26	604820	289.1
91	BRAZOS	42573	526115	1.0880	12	1	28	483542	196.5
92	KLEBERG	38993	323763	1.1369	7	1	14	284770	122.0
93	MONTAGUE	37249	445174	1.0913	8	3	21	407925	323.3
94	FALLS	34237	364233	1.1038	7	2	15	329996	321.2
95	LAVACA	33791	323763	1.1165	8	0	15	289972	297.6
96	RED RIVER	30370	283293	1.1201	5	2	17	252923	345.7
97	TARRANT	29892	526115	1.0602	13	0	24	496223	79.9
98	BORDEN	29858	80941	1.5845	1	1	2	51083	171.9
99	LUBBOCK	26622	687996	1.0403	14	3	28	661374	361.0
100	LOVING	25137	40470	2.6394	1	0	1	15333	33.7
101	MASON	19406	121411	1.1902	1	2	4	102005	187.9
102	HEMPHILL	16266	161881	1.1117	4	0	8	145615	176.6
103	TOM GREEN	15499	566585	1.0281	10	4	25	551086	308.8
104	TRINITY	7950	202352	1.0409	4	1	10	194402	191.5
105	YOUNG	7320	323763	1.0231	7	1	14	316443	330.2
106	FLOYD	7249	161881	1.0469	4	0	6	154632	292.0
107	RANDALL	7037	445174	1.0161	8	3	15	438137	235.3
108	BROOKS	6786	242822	1.0288	6	0	11	236036	112.3
109	HARTLEY	4981	202352	1.0252	5	0	7	197371	244.1
110	OCHILTREE	4090	161881	1.0259	3	1	6	157791	203.1
111	LIBERTY	3570	849878	1.0042	19	2	39	846308	292.9
112	CHILDRESS	2011	202352	1.0100	4	1	5	200341	194.4
113	COLLINGSWORTH	652	80941	1.0081	2	0	2	80289	206.5
114	GILLESPIE	265	242822	1.0011	4	2	9	242557	261.7
115	DEAF SMITH	-1647	202352	0.9919	4	1	8	203999	260.9
116	HALL	-1993	121411	0.9839	2	1	6	123404	196.7
117	HASKELL	-2129	161881	0.9870	3	1	6	164010	271.6
118	KARNES	-3122	283293	0.9891	5	2	15	286415	308.5
119	GARZA	-4227	202352	0.9795	3	2	5	206579	164.2
120	LASALLE	-4648	202352	0.9775	4	1	9	207000	186.2
121	MOORE	-8423	283293	0.9711	4	3	9	291716	189.0
122	FOARD	-11352	40470	0.7809	0	1	1	51822	145.5
123	CASTRO	-12360	161881	0.9291	4	0	6	174241	246.2
124	LYNN	-14690	202352	0.9323	5	0	9	217042	292.2
125	CROCKETT	-15060	283293	0.9495	6	1	12	298353	299.8
126	DALLAM	-15949	202352	0.9269	5	0	5	218301	278.8
127	CULBERSON	-16019	323763	0.9529	6	2	13	339782	277.2
128	CRANE	-16456	161881	0.9077	3	1	4	178337	133.3
129	MOTLEY	-17105	40470	0.7029	1	0	1	57575	156.5
130	BAYLOR	-17511	121411	0.8740	2	1	3	138922	209.9
131	CORYELL	-23584	283293	0.9231	6	1	7	306877	297.1
132	YOAKUM	-26025	121411	0.8235	2	1	9	147436	191.4
133	HOUSTON	-26167	283293	0.9154	6	1	15	309460	359.5
134	FRANKLIN	-29189	161881	0.8472	4	0	5	191070	116.6
135	CONCHO	-32849	121411	0.7871	3	0	4	154260	195.9
136	ATASCOSA	-34120	526115	0.9391	11	2	19	560235	362.6
137	UPSHUR	-34917	445174	0.9273	10	1	16	480091	296.1
138	MARTIN	-35333	242822	0.8730	5	1	13	278155	235.6
139	MENARD	-4028C	40470	0.5012	1	0	4	80750	166.3
140	SWISHER	-43900	202352	0.8217	4	1	8	246252	258.2
141	GREGG	-50157	768937	0.9388	13	6	33	819094	153.9
142	BRISCOE	-50585	0	0.0000	0	0	0	50585	159.6
143	MIDLAND	-50948	728467	0.9346	17	1	25	779415	204.9
144	BEXAR	-50957	1416463	0.9653	30	5	67	1467420	289.3
145	IRION	-51420	40470	0.4404	0	1	1	91890	120.9
146	LAMAR	-53192	364233	0.8726	9	0	17	417425	386.5

RANKS OF THE COUNTIES FROM WORST TO BEST
FOR SPEED RELATED ACCIDENTS

RANK	COUNTY	POTENTIAL	ADJUSTED	RATIO	ACCIDENTS			DVM	MILES
		REDUCTION	DVM		INJURY	FATAL	TOTAL		
147	HAYS	-59487	607055	0.9108	13	2	28	666542	176.0
148	SCURRY	-61648	283293	0.8213	5	2	13	344941	259.2
149	STEPHENS	-63841	121411	0.6554	3	0	6	185252	250.4
150	NACOGDOCHES	-63860	526115	0.8918	13	0	17	589975	323.1
151	HANSFORD	-63863	40470	0.3879	1	0	4	104333	248.5
152	JIM HOGG	-66082	40470	0.3798	0	1	2	106552	143.1
153	ANDREWS	-68715	283293	0.8048	6	1	9	352008	231.7
154	REAGAN	-69569	40470	0.3678	1	0	3	110039	158.0
155	LIPSCOMB	-72133	0	0.0000	0	0	1	72133	181.5
156	WICHITA	-72259	323763	0.8175	8	0	15	396022	236.3
157	COTTELL	-72271	0	0.0000	0	0	1	72271	187.3
158	CALDWELL	-73309	283293	0.7944	6	1	11	356602	237.3
159	ARANSAS	-76089	121411	0.6147	3	0	5	197500	63.4
160	MADISON	-77878	364233	0.8239	8	1	15	442111	228.9
161	KNOX	-78879	40470	0.3391	1	0	3	119349	202.7
162	COLEMAN	-80056	121411	0.6026	3	0	5	201467	293.8
163	MCMULLEN	-81380	0	0.0000	0	0	0	81380	151.9
164	COCHRAN	-82455	0	0.0000	0	0	4	82455	223.2
165	BLANCO	-85122	80941	0.4874	1	1	2	166063	176.1
166	BAILEY	-88798	40470	0.3131	1	0	1	129268	203.5
167	SABINE	-93323	80941	0.4645	2	0	4	174264	210.3
168	UPTON	-93398	40470	0.3023	1	0	4	133868	183.6
169	CAMP	-93408	40470	0.3023	1	0	2	133878	101.1
170	SHERMAN	-94127	80941	0.4623	2	0	4	175068	189.3
171	KING	-95677	0	0.0000	0	0	1	95677	93.0
172	FREESTONE	-97609	566585	0.8530	11	3	23	664194	316.8
173	LAME	-100506	161881	0.6170	3	1	6	262387	330.9
174	COMANCHE	-102082	161881	0.6133	2	2	5	263963	332.3
175	FISHER	-106204	40470	0.2759	1	0	3	146674	267.5
176	ZAVALA	-108434	80941	0.4274	2	0	4	189375	249.8
177	GOLIAD	-108731	121411	0.5275	3	0	4	230142	246.3
178	WILSON	-112664	242822	0.6831	5	1	12	355486	297.3
179	MAVERICK	-112916	80941	0.4175	1	1	3	193857	193.3
180	GLASSCOCK	-113363	40470	0.2631	1	0	2	153833	136.8
181	STERLING	-113532	40470	0.2628	0	1	3	154002	98.4
182	GRAY	-114829	323763	0.7382	7	1	14	438592	269.2
183	HAMILTON	-116201	40470	0.2583	1	0	1	156671	277.9
184	SAN AUGUSTINE	-116303	40470	0.2581	0	1	2	156773	238.2
185	FORT BEND	-121260	1537874	0.9269	35	3	61	1659134	282.1
186	CLAY	-121543	323763	0.7271	6	2	13	445306	304.0
187	MORRIS	-124013	161881	0.5662	4	0	6	285894	113.7
188	GAINES	-131105	202352	0.6068	4	1	6	333457	267.6
189	TITUS	-132295	283293	0.6817	7	0	12	415588	173.6
190	STARR	-132503	242822	0.6470	5	1	12	375325	223.7
191	MARION	-132808	80941	0.3787	2	0	5	213749	144.0
192	HOWARD	-137041	404704	0.7470	10	0	15	541745	253.2
193	MILLS	-141803	0	0.0000	0	0	0	141803	202.2
194	ANDERSON	-143620	323763	0.6927	7	1	21	467383	398.3
195	NEWTON	-144035	121411	0.4574	3	0	4	265446	255.3
196	DIMMIT	-144656	40470	0.2186	1	0	1	185126	239.6
197	FAYETTE	-155547	607055	0.7960	13	2	18	762602	384.1
198	PANOLA	-163402	323763	0.6646	6	2	14	487165	284.8
199	ANGELINA	-166226	445174	0.7281	9	2	15	611400	288.8
200	HALE	-167740	202352	0.5468	5	0	16	370092	345.0
201	LIMESTONE	-171185	121411	0.4149	2	1	4	292596	344.6
202	CHEROKEE	-171522	364233	0.6799	9	0	14	535755	458.3
203	JOHNSON	-171874	485644	0.7386	10	2	35	657518	281.1
204	POTTER	-172681	445174	0.7205	9	2	17	617855	155.6
205	SAN JACINTO	-176532	121411	0.4075	3	0	4	297943	210.8
206	MCCULLOCH	-178192	0	0.0000	0	0	2	178192	280.1
207	OLDHAM	-178214	242822	0.5767	6	0	7	421036	110.2
208	ZAPATA	-179674	40470	0.1838	1	0	2	220144	120.3
209	ARMSTRONG	-181294	0	0.0000	0	0	1	181294	148.8
210	TERRY	-182578	80941	0.3060	1	1	5	264519	261.7
211	MITCHELL	-183767	121411	0.3978	3	0	10	305178	215.5
212	KENEDY	-186211	40470	0.1785	1	0	3	226681	46.7
213	DONLEY	-187022	80941	0.3021	2	0	6	267963	164.2
214	GONZALES	-188413	364233	0.6591	8	1	14	552646	381.3
215	DUVAL	-189245	121411	0.3908	3	0	6	310656	300.3
216	PARMER	-191725	40470	0.1743	1	0	1	232195	237.6
217	HARDEMAN	-195047	0	0.0000	0	0	3	195047	188.2
218	TYLER	-200733	121411	0.3769	3	0	4	322144	231.8
219	ORANGE	-209741	364233	0.6346	8	1	13	573974	101.2

RANKS OF THE COUNTIES FROM WORST TO BEST
FOR SPEED RELATED ACCIDENTS

RANK	COUNTY	POTENTIAL	ADJUSTED	RATIO	ACCIDENTS			DVM	MILES
		REDUCTION	DVM		INJURY	FATAL	TOTAL		
220	NAVARRO	-214229	445174	0.6751	8	3	20	659403	390.3
221	SAN PATRICIO	-219296	647526	0.7470	16	0	17	866822	272.4
222	GUADALUPE	-229195	607055	0.7259	14	1	38	836250	294.1
223	CALLAHAN	-233336	283293	0.5483	5	2	11	516629	268.8
224	JIM WELLS	-236880	404704	0.6308	9	1	15	641584	244.7
225	TAYLOR	-241621	242822	0.5012	6	0	8	484443	266.2
226	AUSTIN	-248603	323763	0.5657	6	2	12	572366	234.5
227	JEFFERSON	-252332	768937	0.7529	18	1	42	1021269	165.5
228	FRIO	-254778	80941	0.2411	2	0	4	335719	271.3
229	CASS	-279407	202352	0.4200	5	0	6	481759	370.4
230	HILL	-288370	566585	0.6627	10	4	21	854955	423.5
231	WILBARGER	-291137	40470	0.1220	1	0	1	331607	276.5
232	REFUGIO	-293401	121411	0.2927	2	1	6	414812	184.6
233	VAN ZANDT	-297425	647526	0.6852	14	2	26	944951	433.3
234	BOWIE	-297669	768937	0.7209	18	1	29	1066606	379.5
235	ELLIS	-298624	728467	0.7093	14	4	35	1027091	386.0
236	WHARTON	-317794	566585	0.6407	12	2	20	884379	370.6
237	JACKSON	-321900	121411	0.2739	3	0	4	443311	259.8
238	BEE	-326151	121411	0.2713	3	0	7	447562	269.6
239	HARDIN	-332147	323763	0.4936	7	1	10	655910	212.8
240	WASHINGTON	-340662	121411	0.2628	1	2	4	462073	247.4
241	WALLER	-341604	202352	0.3720	4	1	11	543956	190.0
242	COLORADO	-357736	485644	0.5758	12	0	19	843380	268.2
243	ECTOR	-371262	526115	0.5863	11	2	18	897377	198.3
244	CARSON	-393686	80941	0.1705	2	0	5	474627	257.4
245	NOLAN	-393787	80941	0.1705	2	0	7	474728	205.9
246	VICTORIA	-393986	364233	0.4804	9	0	14	758219	214.1
247	HOPKINS	-416226	161881	0.2800	4	0	8	578107	327.3
248	PARKER	-419252	323763	0.4357	8	0	19	743015	229.3
249	BRAZORIA	-428526	971289	0.6939	22	2	46	1399815	301.1
250	EASTLAND	-433851	161881	0.2717	4	0	9	595732	348.7
251	PECOS	-435971	121411	0.2178	3	0	6	557382	553.6
252	LIVE OAK	-502160	121411	0.1947	3	0	11	623571	333.3
253	JASPER	-E58979	121411	0.1784	2	1	6	680390	303.0
254	CHAMBERS	-859972	121411	0.1237	3	0	11	981383	225.3

APPENDIX B

TEXAS DEPARTMENT OF PUBLIC SAFETY
OPERATIONAL PLAN FOR
55 MPH SELECTIVE TRAFFIC ENFORCEMENT PROGRAMS (STEPS)

The efficient deployment of additional enforcement manpower for the purpose of reducing non-compliance with the 55 MPH National Maximum Speed Law (NMSL) requires the identification of those locations where non-compliance exists, and then patrolling those locations at the appropriate times in sufficient numbers using the best patrol procedures. The deployment schedules which attempt to satisfy these requirements are set forth in an Operational Plan. The process of determining how well the Operational Plan satisfied the requirements of efficient deployment is described in an Evaluation Plan.

The Operational Plan for the implementation of 55 MPH STEPS for the period beginning February 1, 1984 and ending August 31, 1984 is described in the following sections. The plan for evaluating the efficiency of the increased deployment during this period is presented following the Operational Plan.

OPERATIONAL PLAN

Site Selection (Where)

One roadway was selected to receive additional enforcement. These counties were selected on the basis of their ranking in terms of speed related accidents and manpower constraints. Speed related fatal and injury accidents were used as a surrogate since no comprehensive repository of traffic speeds exists. A detailed description of the ranking procedure, which takes into account traffic volume, is presented as Appendix A.

The counties selected were from the top fifty worst counties in terms of speeding accidents. The locations of these counties are presented in Figure 1. The rank of each county along with additional information which will be referred to later in the plan is presented in Table 1.

The roadways selected to receive the increased enforcement within each of the seven counties are also presented in Table 1. In all, 27 roads and 440 miles of roadway were selected.

These roadways include 33 miles of Interstate Highway, 198 miles of US Highway, 171 miles of State Highway, and 39 miles of farm to market, ranch roads or Recreational roads which are zoned for 55 MPH. These roads carry approximately 758.607 vehicles daily. The potential reduction on these roadways would be 17 injury or fatal accidents during the treatment period.

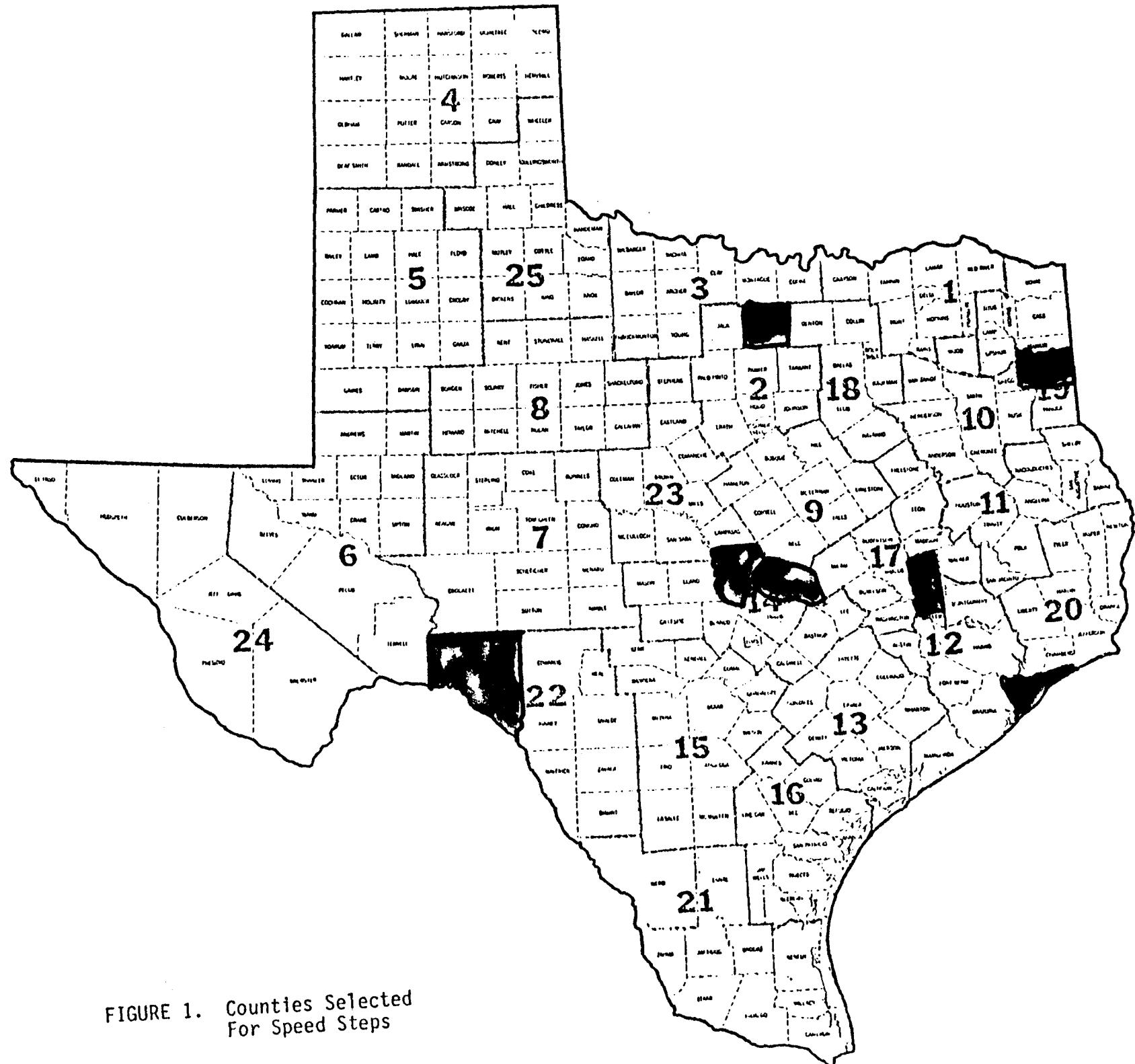


TABLE 1. Counties Selected f.. Increased Enforcement

BURNET RANK 11
District 14

Highway	Cont/Sec	Length	DVM	INJ/FAT	Ratio	Pot.Red
2 US281	251.7	11.84	27207	0	0.00	0.00
2 US281	251.8	6.29	15100	0	0.00	0.00
3 US281	252.1	10.61	44950	0	0.00	0.00
3 US281	252.2	6.4	21137	0	0.00	0.00
1 US183	273.2	10.83	19676	0	0.00	0.00
1 US183	273.3	9.78	21092	2	2.59	1.23
4 SH71	700.1	14.68	39212	0	0.00	0.00
5 FM1431	1378.3	15.78	7708	0	0.00	0.00
5 FM1431	1378.4	10.19	43454	0	0.00	0.00
Total for Targets		96.4	239536	2		1.23
TOTAL for COUNTY		382530		14		9.65

HARRISON RANK 1
District 19

Highway	Cont/Sec	Length	DVM	INJ/FAT	Ratio	Pot.Red
1 IH20		495.8	16.9	247773	8	1.27
Total for Targets				247773	8	1.27

TOTAL for COUNTY 1060899 27 11.67

GALVESTON
District 12

Highway	Cont/Sec	Length	DVM	INJ/FAT	RATIO	Pot.Red
3 SH3	51.3	15.9	25494	0	0	0
1 SH6	192.4	17.06	60659	0	0	0
4 SH87	307.5	1.27	839	0	0	0
4 SH87	367.2	10.01	32331	1	1.28	0.22
4 SH87	367.3	8.72	19357	0	0	0
4 SH87	367.4	11.92	30169	1	1.37	0.27
4 SH87	367.5	.01	46	0	0	0
2 SH146	389.6	5.58	63623	4	2.61	2.47
2 SH146	389.7	3.8	63623	1	0.65	0
Total for Targets		74.27	296141	7		2.96

TOTAL for COUNTY 663422 16 5.93

VAL VERDE RANK 15
District 7

Highway	Cont/Sec	Length	DVM	INJ/FAT	Ratio	Pot.Red
1 US90	22.5	11.9	8327	0	0	0
1 US90	22.6	8.66	6575	0	0	0
1 US90	22.7	10.81	10231	0	0	0
2 US277		160.4	6982	1	4.16	0.76
2 US277		160.5	13181	3	6.61	2.55
Total for Targets		60.04	45296	4		3.31

TOTAL for COUNTY 203337 7 5.76

WILLIAMSON
District 14

Highway	Cont/Sec	Length	DVM	INJ/FAT	RATIO	Pot.Red
7 IH35		15.8	210765	2	.45	0
4 SH29		151.3	23179	0	0	0
1 US183		151.4	36377	1	1.3	.23
3 US79		204.1	26719	0	0	0
3 US79		204.2	30376	0	0	0
3 US79		204.3	23269	1	2.03	.51
2 US79		204.4	53906	1	.88	0
1 US183		273.4	31533	2	2.99	1.33
5 SH29		337.1	37402	0	0	0
6 SH195		440.1	18123	0	0	0
6 SH195		440.2	12964	0	0	0
Total for Targets		98.97	504613	7		2.07

TOTAL for County 849966 18 10.08

GRIMES RANK 18
District 17

Highway	Cont/Sec	Length	DVM	INJ/FAT	Ratio	Pot.Red.
1 SH6	50.3	11.34	64556	0	0	0
5 SH90	315.4	6.63	26760	0	0	0
4 SH105	338.1	16.86	54749	3	2.34	1.72
3 FM1227	643.6	7.48	1672	1	25.49	0.96
2 FM244	3177.1	5.67	3174	1	13.43	0.93
Total for Targets		47.98	150911	5		3.61

TOTAL for COUNTY 340940 8 5.63

WISE RANK 21
District 2

Highway	Cont/Sec	Length	DVM	INJ/FAT	RATIO	Pot.Red
1 US81		13.6	50477	2	1.92	0.96
4 SH101		134.6	16324	0	0	0
2 US380		134.7	55923	0	0	0
2 US380		134.8	48694	0	0	0
3 SH114		352.1	48149	2	2.01	1.01
3 SH114		353.1	26528	0	0	0
Total for Targets		48.25	246095	4		1.97

TOTAL for COUNTY 726338 15 7.87

TABLE 3 Weekly Patrol Hours

Time of Day	Patrol Unit Hours	Percent
5		
6	31	4.68
7	36	5.43
8	37	5.58
9	35	5.28
10	37	5.58
11	37	5.58
12n	32	4.83
1	44	6.64
2	52	7.84
3	48	7.24
4	48	7.24
5	49	7.39
6	40	6.03
7	33	4.98
8	30	4.52
9	25	3.77
10	20	3.02
11	14	2.11
12m	10	1.51
1	5	0.75
2		
3		
TOTAL	663	100.

Enforcement Times (When)

The allocation of patrol unit hours by day of week is presented in Table 2. As this Table indicates, 611 patrol units are distributed close to the recommended allocation of 50%, Monday through Thursday and 17% each Friday, Saturday and Sunday. It may be recalled that this distribution was proposed to ensure weekday enforcement.

The distribution of enforcement unit hours by time of day is presented in Table 3. As can be seen in the Table, enforcement is concentrated in the peak travel times.

Patrol Procedures (How)

The ratio of 3 to 4 patrol unit hours per mile of road per month has been demonstrated to be the amount of enforcement necessary to effect significant reductions in the percentage of vehicles exceeding 55 MPH. The monthly patrol unit ratio for each county presented in Table 4. As can be seen in this Table all counties meet or exceed the minimum patrol requirements.

The patrol tactics to be used during the enforcement period include moving and stationary patrol using radar to monitor speeds. The predominate tactic will be moving patrol. There is no plan to use pack procedures, however, on occasion two units may operate independently on the same roadway. Although the Operational Plan is developed on the basis of patrol units, these units may be occupied by one or two men.

TABLE 2 Weekly Patrol Unit Hours
By Day of Week

County	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	TOTAL
Burnet	12	12	16	22	12	8	9	91
Galveston	16	8	16	16	16	16	16	104
Grimes	16		16		16	16	16	80
Harrison		8	8		24	16	24	80
Val Verde			16	16	16	16	16	80
Williamson	20		17		39		14	90
Wise	16	16	16	16	14	8		86
TOTAL	80	44	105	70	137	80	95	611
Percent	13.09	7.2	17.18	11.46	22.42	13.09	15.55	100

TABLE 4 Monthly Patrol Unit Ratios

County	Unit Hours	Miles	Ratios
Burnet	364	99.2	3.67
Galveston	416	71.9	5.79
Grimes	320	38.8	8.25
Harrison	320	16.9	18.93
Val Verde	320	56	5.71
Williamson	360	100.2	3.59
Wise	344	57	6.04

This assumes a 4 week month

EVALUATION PLAN

I. Impact Evaluation

Dependent Measures - The evaluation of the impact of increased enforcement activities will focus on the following speed parameters:

- (1) Mean Speed - reflecting the average driving speed of the population.
- (2) Percent exceeding 55 MPH - reflecting the degree of non-compliance with the 55 MPH NMSL.
- (3) Speed Variance - indicating the variation in driving speed of the population on a given roadway segment.

Sampling Schedule - The sampling schedule for the study is, weather permitting, as follows:

Pre-enforcement Data

February/March

Interim

May/June

Post-enforcement Data

September

Method - Speed data collection will be accomplished using Kustom KR-11 stat-pac radars in unmarked, moving research vehicles. The days-of-week and times-of-day established during the pre-treatment sampling period will remain constant for each treatment roadway selected for enforcement.

Treatment Sites - The Department of Public Safety (DPS) identified 27 roadway segments in seven counties to be patrolled on an overtime basis. All roads in all counties will have speed samples taken during the pre- and post-enforcement periods. Interim samples will be taken from half of the counties in May and the remaining half in June.

Accident Data - Accident data will be collected for each county and treatment roadway for a time period equivalent to the treatment period, in 1983. These figures will be used to evaluate the impact of overtime enforcement on accident rates both on target roadways and within treatment counties.

Control Data - Comparison (control) data will be collected from matched counties and statewide figures provided by the DPS (for accidents) and the SDHPT (for speeds). Speed data collected on the

treatment roadways will be compared to like roadways sampled for the SDHPT quarterly speed monitoring report. Statewide accident data and data from matched counties will be used to assess the rate of change in accidents on treatment roads and in treatment counties.

II. Administrative Evaluation

The administrative evaluation will focus on project man-hours, both patrol and supervisory, contact and arrest activity, operational and administrative cost, and estimated judicial costs. The Statistical Services and Accounting Sections of the DPS will provide this material as it becomes available.

These data will be used to construct benefit/cost analysis relating the benefits derived from project activities to the costs incurred in the implementation of those activities.

Contacts and Arrests - Information on citations, types and rates of issue, and their adjudication will be provided by the DPS personnel in the field. These data will be transmitted to TTI via the DPS administrative office in Austin.

County of BurnetDPS OPERATIONAL PLAN - 55 mph
DWT (circle one)

STEP SITE NUMBER	SITE DESCRIPTION	MILES OF ROADWAY	TIME(S) OF DAY	DAY(S) OF WEEK	NO. OF PATROL UNITS HRS. PER/WEEK
	US-183 Williamson County Line to Lampasas County Line	20.3	7A- 4P 6P-10P	Sunday Wednesday	4 units/20 hrs
			6P-10P 6P-10P	Friday Saturday	
	US-281 Burnet to Lampasas County Line	24.7	10A- 2P 2P- 6P 10A- 2P 1P- 5P 1P- 5P	Monday Monday Thursday Friday Saturday	5 units/20 hrs
	US-281 Blanco County Line to Burnet	21.1	6A-10A 6A-10A 6A-10A 2P- 6P 2P- 8P	Monday Tuesday Wednesday Wednesday Thursday	5 units/22 hrs
	SH-71 Blanco County Line to Llano County line	10.1	10A- 2P 10A- 2P	Tuesday Wednesday	2 units/ 8 hrs
	FM-1431 Travis County line to Llano County line	23.0	2P- 6P 6A- 6P 1P- 5P	Tuesday Thursday Friday	3 units/20 hrs
	SUMMARY				19 units/90 hrs per week

STEP Administration hours planned per month 61

County of GALVESTON

DPS OPERATIONAL PLAN - 55 mph DWI (Circle One)

STEP Administration hours planned per month 55

County of GRIMES

DPS OPERATIONAL PLAN - (55 mph) DWI (Circle One)

STEP Administration hours planned per month 40

County of Harrison

DPS OPERATIONAL PLAN - **55 mph** (circle one)
DWI

STEP Administration hours planned per month 32

County of Val Verde

DPS OPERATIONAL PLAN - 55 mph
DWI (circle one)

STEP Administration hours planned per month 32

County of WilliamsonDPS OPERATIONAL PLAN - 55 mph XXX (circle one)

STEP SITE NUMBER	SITE DESCRIPTION	MILES OF ROADWAY	TIME(S) OF DAY	DAY(S) OF WEEK	NO. OF PATROL UNITS HRS. PER/WEEK
1	US183 -- Leander to Burnet County Line	21.0	3P - 9P 6A - 9A 6A - 9A 6A - 9A 4P - 8P	Sunday Monday Wed. Friday Friday	5 Units/ 19 Hrs
2	US79 -- Taylor to Milam County Line	11.7	6A - 10A 6A - 10A 6A - 10A 6P - 10P	Monday Wed. Friday Friday	4 Units/ 16 Hr
3	US79 -- Taylor to Round Rock	16.0	6A - 10A 6A - 10A 6A - 10A 6P - 10P	Monday Wed. Friday Friday	4 Units/ 16 Hr
4	Tx29 -- Seward Junction to Burnet County Line	6.3	6A - 9A 6A - 9A 6A - 9A	Monday Wed. Friday	3 Units/ 9 Hrs
5	Tx29 -- Seward Junction to Georgetown	12.1	6A - 9A 6A - 9A 6A - 9A	Monday Wed. Friday	3 Units/ 9 Hrs
6	Tx195 -- Florence to IH-35	17.3	5P - 2A 5P - 2A	Sunday Friday	2 Units/ 16 Hrs
7	IH-35 -- Georgetown to Bell County Line	15.8	6A - 9A 7P - 9P	Monday Friday	2 Units/ 5 Hrs

STEP Administration hours planned per month 29

County of WISE

DPS OPERATIONAL PLAN - **55 mph**
DWI (circle one)

STEP Administration hours planned per month 71½

TEXAS DEPARTMENT OF PUBLIC SAFETY
OPERATIONAL PLAN FOR
55 MPH SELECTIVE TRAFFIC ENFORCEMENT PROGRAMS (STEPS)

The efficient deployment of additional enforcement manpower for the purpose of reducing non-compliance with the 55 MPH National Maximum Speed Law (NMSL) requires the identification of those locations where non-compliance exists, and then patrolling those locations at the appropriate times in sufficient numbers using the best patrol procedures. The deployment schedules which attempt to satisfy these requirements are set forth in an Operational Plan. The process of determining how well the Operational Plan satisfied the requirements of efficient deployment is described in an Evaluation Plan.

The Operational Plan for the implementation of 55 MPH STEPS for the period beginning May 1, 1984 and ending July 31, 1984 is described in the following sections. The plan for evaluating the efficiency of the increased deployment during this period is presented following the Operational Plan.

The data presented in Tables 1 through 4 are good estimates as reflected by available information. Rounding error, reporting error and interpretation error have been minimized as much as possible resulting in the most reliable information available.

OPERATIONAL PLAN

Site Selection (Where)

Thirteen counties were selected to receive additional enforcement. The counties were selected by the Department of Public Safety. This selection was based on available manpower needed to provide the increased enforcement and the experiences of personnel familiar with the areas.

The location of these counties are presented in Figure 1. The rank of each county relative to speed related injury and accidents is presented in Table 1 along with additional information which will be referred to later in this plan.

The roadways selected to receive the increased enforcement within each of the thirteen counties are also presented in Table 1. In all, 29 roadway segments and 482.8 miles of roadway were selected.

These roadways include 165.6 miles of Interstate Highway, 195 miles of US Highway, 109.2 miles of State Highway, and 13 miles of farm to market roads which are zoned for 55 MPH. These roads carry approximately 113,337 vehicles daily. The potential reduction on these roadways would be 7.45 injury or fatal accidents during the treatment period.

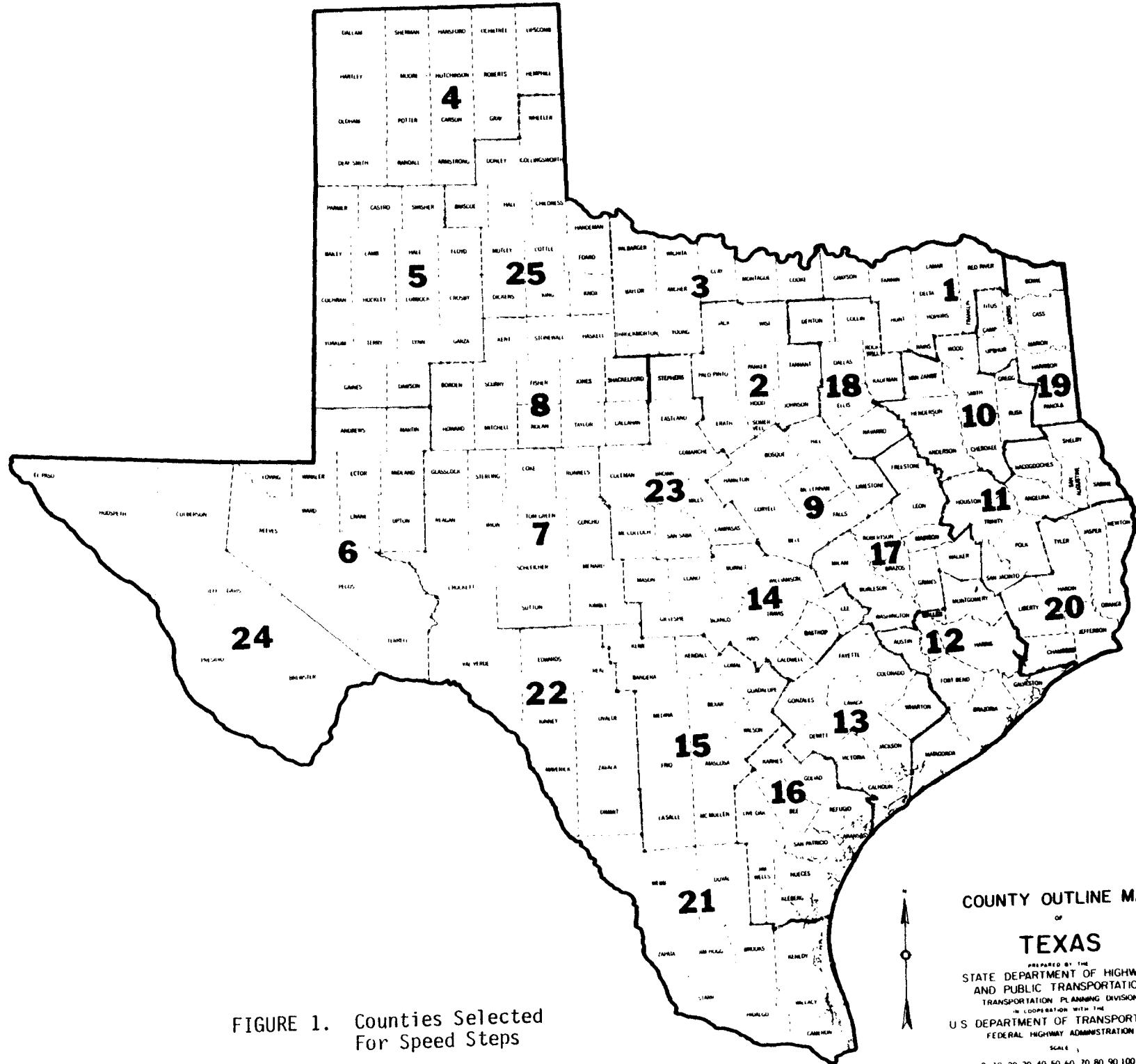


FIGURE 1. Counties Selected For Speed Steps

TABLE 1 Counties Selected for Increased Enforcement

**BASTROP Rank 90
District 14**

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
SH21E	472.1	11.86	34171	0	0	0
SH21W	471.5	13.81	21255	0	0	0
SH71	265.3	8.15	81038	0	0	0
"	265.4	5.89	68438	0	0	0
"	265.5	9.63	78613	2	2.20	1.09
US290	114.4	4.99	34348	0	0	0
"	114.5	8.91	49076	0	0	0
"	114.6	8.55	45776	0	0	0
Total for Targets		71.79	412715	2		1.09
TOTAL for County		289.14	604819	7		

**ELLIS Rank 235
District 18**

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
IH35 E	48.4	17.82	114166	0	0	0
Total for Targets		17.82	114166	0	0	0
TOTAL for County		386.01	1027091	4		

**BOWIE Rank 234
District 19**

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
IH30	610.5	17.3	161570	0	0	0
"	610.6	13.61	173946	0	0	0
"	610.7	11.86	217194	2	1.40	0.57
Total for Targets		42.77	552710	2		0.57
TOTAL for County		379.46	1066606	7		

**HARRIS Rank 2
District 12**

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
US290	50.6	17.82	270049	1	0.48	0
FR529	1006.1	17.26	120752	0	0	0
Total for Targets		35.08	390801	1		0
TOTAL for County		279.37	6851747	53		

**CHAMBERS Rank 254
District 20**

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
IH10	508.2	16.16	327706	1	2.99	0.67
"	504.3	17.23	287842	0	0	0
SH124	367.1	13.56	41260	0	0	0
Total for Targets		46.95	656808	1		0.67
TOTAL for County		225.35	981384	1		

**MCLENNAN Rank 32
District 9**

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
SH6 NW	258.8	11.47	34724	0	0	0
IH35 N	14.8	10.42	210695	1	0.53	0
"	14.9	7.33	64183	0	0	0
IH35 S	15.1	22.89	109236	4	4.12	3.03
"	15.2	4.26	53811	1	2.09	0.52
Total for Targets		56.37	472649	6		3.55
TOTAL for County		327.57	899872	8		

**DENTON Rank 81
District 18**

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
SH114	353.2	14.01	76302	0	0	0
US340	134.9	15.01	42149	0	0	0
"	135.10	17.29	56133	0	0	0
Total for Targets		46.34	174584	0		0
TOTAL for County		284.63	946346	5		

**MADISON Rank 160
District 17**

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
IH45 N	675.5	18.63	256294	0	0	0
US190 W	117.5	15.85	35057	0	0	0
Total for Targets		34.48	291351	0	0	0
TOTAL for County		228.88	442111	2		

TABLE 1 (contd.)

NOLAN Rank 245
District 9

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
IH20	6.2	13.17	130468	0		0
US84	53.12	9.81	43062	0		0
Total for Targets		22.98	173530	0		0

TOTAL for County : 204.34 457306 1

WALLER Rank 241
District 12

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
US290	50.5	5.26	68830	0		0
"	114.11	7.05	40041	1	6.79	0.85
SH6	50.4	8.33	49383	0		0
Total for Targets		20.64	154254	1		0.85

TOTAL for County : 190.03 543759 2

SULLIVAN Rank 44
District 7

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
US277 N	159.6	9.5	22431	0		0
US277 S	160.1	9.1	25923	1	3.51	0.72
"	160.2	12.37	19534	0		0
Total for Targets		30.97	67888	1		0.72

TOTAL for County : 212.88 273085 3

WHARTON Rank 236
District 13

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
US59	89.6	12.79	132225	0		0
"	89.7	15.4	180582	0		0
"	89.8	9.88	131939	0		0
SH60	241.1	13.17	39926	0		0
US90A	27.4	12.23	47911	0		0
Total for Targets		63.47	532533	0		0

TOTAL for County : 370.63 884379 1

VAN ZANDT Rank 233
District 10

Highway	Cont/Sec	Length	DVM	Inj/Fat	Ratio	Pot.Red
IH20	495.2	13.96	244323	0		0
"	495.3	16.26	261118	0		0
Total for Targets		30.22	505441	0		0

TOTAL for County : 433.34 744951 5

Enforcement Times (When)

The allocation of patrol unit hours by day of week is presented in Table 2. As this Table indicates, 56.27 percent of the 1,336 patrol unit hours are distributed Monday through Thursday and 43.73% occur Friday, Saturday, and Sunday. This distribution meets the objective of insuring additional weekday enforcement.

The distribution of enforcement unit hours by time of day is presented in Table 3. For the most part, enforcement is concentrated in peak travel times.

Patrol Procedures (How)

The ratio of 3 to 4 patrol unit hours per mile of road per month has been demonstrated to be the amount of enforcement necessary to effect significant reductions in the percentage of vehicles exceeding 55 MPH. The monthly patrol unit ratio for each county is presented in Table 4. As can be seen in this Table all counties meet or exceed the minimum patrol requirements.

The patrol tactics to be used during the enforcement period include moving and stationary patrol using radar to monitor speeds. The predominate tactic will be moving patrol. There is no plan to use pack procedures, however, on occasion two units may operate independently on the same roadway. Although the Operational Plan is developed on the basis of patrol units, these units may be occupied by one or two men.

TABLE 2 Weekly Patrol Unit Hours
By Day of Week

County	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	TOTAL
Bastrop	10.82	23.12	13.31	25.52	12.02	19.21	4	108
Bowie		16		16	32	32	32	128
Chambers			48		48		48	144
Denton	32	32	32	32	32			160
Ellis	16	16	16	16	16			80
Harris	9.6	9.6	9.6	9.6	9.6		24	72
Madison	7.5	15	12	6	12		7.5	60
McLennan	40	40	40	40	40			200
Nolan		16		16	16		16	64
Sutton			16	16	16	16	16	80
Van Zandt	8	8	8	16	16	16	16	88
Waller		32			48			80
Wharton	16		16		16		24	72
TOTAL	139.92	207.72	210.91	193.12	313.62	83.21	187.50	1336
PERCENT	10.47	15.55	15.79	14.46	23.47	6.23	14.03	100

TABLE 3 Weekly Patrol Hours

Time of Day	Patrol Unit Hours	Percent
5		
6	35.75	2.68
7	55.44	4.15
8	58.64	4.39
9	86.35	6.46
10	100.70	7.54
11	88.77	6.64
12	77.45	5.80
1	107.82	8.07
2	136.07	10.18
3	117.66	8.81
4	109.29	8.18
5	102.09	7.64
6	73.06	5.47
7	53.13	3.98
8	47.83	3.58
9	41.61	3.11
10	20.80	1.56
11	14.40	1.06
12	9.14	.70
1		
2		
3		
4		
TOTAL	1,336	100

TABLE 4 Monthly Patrol Unit Ratios

County	Unit Hours per Month	Miles	Ratios
Bastrop	432	67.6	6.39
Bowie	512	42	12.19
Chambers	576	45.5	12.66
Denton	640	41	15.61
Ellis	320	11	29.09
Harris	288	34	8.47
Madison	320	28	11.43
McLennan	800	44.1	18.14
Nolan	256	20.6	12.43
Sutton	320	32	10.00
Van Zandt	352	28	12.57
Waller	320	26	12.31
Wharton	288	63	4.57

This assumes a 4 week month

TABLE 5 Pre-Enforcement Sample Results

BASTROP
District 14

	Roadway	Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
	US290	predata	59.6	64.8	5.3	198	75	40	9
		interim							4/19/84 5p-6p
		postdata							
	SH21w	predata	59.9	65	5.9	122	77	42	9
		interim							4/19/84 3p-4p
		postdata							
	SH71	predata	58.4	63.3	5.3	197	73	29	5
		interim							4/19/84 12n-1p
		postdata							
	SH21e	predata	57.5	62.9	5.8	152	63	25	6
		interim							4/19/84 8a-9a
		postdata							
TOTAL	County-wide	predata	58.82	63.96	5.52	669	72.05	33.72	7.14
		interim							
		postdata							

TABLE 5 (contd.)

DENTON
District 18

District 10								Date, Time	
Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	Comments
SH380	Through County predata interim postdata	56.8	62	6.3	161	60	21	5	4/11/84 345-430p
SH114	Through County predata interim postdata	58.2	63.4	5.7	156	71	32	5	4/11/84 445-520p
TOTAL	County-wide predata interim postdata	57.49	62.69	6	317	65.41	26.41	5	

ELLIS
District 18

District 16								Date, Time		
Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	Comments	
IH35E	FM66-US77	predata	60.1	65.2	5.7	203	80	44	11	4/12/84 7a-7:30a
		interim								
		postdata								
TOTAL	County-wide	predata	60.1	65.2	5.7	203	80	44	11	
		interim								
		postdata								

TABLE 5 (contd.)

McLENNAN
District 9

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
SH6W	predata	58.2	63.3	5	158	70	30	2	4/18/84 5p-6p
	interim								
	postdata								
IH35s	predata	60.3	65	4.6	224	83	43	10	4/18/84 4p-5p
	interim								
	postdata								
IH35n	predata	59	63.6	4.8	163	78	34	4	4/18/84 12n-1p
	interim								
	postdata								
SH21e	predata	57.5	62.9	5.8	152	63	25	6	4/19/84 8a-9a
	interim								
	postdata								
TOTAL	County-wide								
	predata	58.91	63.83	5	697	74.52	34.02	5.91	
	interim								
	postdata								

TABLE 5 (contd.)

HARRIS
District 12

		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
Roadway US290	predata	59	64.5	5.5	240	68	38	7	4/27/84 4p-5p
	interim								
	postdata								
FM529	predata	59.6	65.7	6	156	75	41	13	4/27/84 5p-6p
	interim								
	postdata								
TOTAL	County-wide	59.24	64.97	5.7	396	70.76	39.18	9.36	
	predata								
	interim								
	postdata								

TABLE 3 (contd.)

MADISON
District 17

		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
Roadway	IH45								
	predata	60.8	65.8	5.5	186	83	46	13	4/16/84 410-450p
	interim								
	postdata								
US190									
	predata	60.5	65.3	5.3	165	85	47	10	4/18/84 450-530p
	interim								
	postdata								
TOTAL	County-wide								
	predata	60.66	65.56	5.41	351	83.94	46.47	11.59	
	interim								
	postdata								

NOLAN
District 8

		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
Roadway	IH20								
	predata	59.5	64.8	5.6	285	78	36	11	4/13/84 5p-6p
	interim								
	postdata								
US84									
	predata	60.5	65.6	5.3	183	83	44	12	4/13/84 4p-5p
	interim								
	postdata								
TOTAL	County-wide								
	predata	59.89	65.11	5.48	468	79.96	39.13	11.39	
	interim								
	postdata								

APPENDIX C

TABLE 1

ALL TARGET COUNTIES

County	Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65
Burnet							
predata	58.84	64.81	6.06	802	68.73	37.7	9.37
interim	58.32	62.98	4.96	781	70.75	29.02	4.8
postdata	59.11	63.8	5.27	767	77.15	34.98	6.11
Galveston							
predata	55.94	61.59	5.87	786	50.03	19.18	3.19
interim	56.17	61.99	5.94	671	53.97	19.2	3.99
postdata	55.37	60.78	5.74	640	47.67	13.48	1.81
Grimes							
predata	58.3	64.2	5.88	523	63.01	34.77	8.01
interim	59.12	64.65	6	647	74.94	37.64	9.88
postdata	57.42	63.38	5.83	534	61.1	27.92	2.75
Harrison							
predata	60.3	64	5.7	681	80	49	14
interim	58.3	63.7	5.9	247	67	35	7
postdata	57.2	61.5	5.5	246	62	18	6
Val Verde							
predata	59.38	65.59	7.66	108	66.43	36.19	16.98
interim	56.59	63.47	6.79	115	51.03	25.84	5.97
postdata	59.05	65.59	6.38	127	75.36	31.64	13.23
Williamson							
predata	59.58	64.72	5.52	829	75.52	39.83	9.8
interim	59.02	63.83	5.3	814	74.11	32.63	8.46
postdata	59.25	63.4	4.76	856	78.28	35.22	6.11
Wise							
predata	57.81	62.52	5.38	641	65.34	23.47	3.99
interim	58.01	63.36	5.7	711	64.27	30.03	6.55
postdata	57.44	63.44	6.23	647	60.29	26.88	6.49
TOTAL							
predata	58.48	63.7	5.79	4370	67.17	34.06	8.3
interim	58.12	63.38	5.61	3986	67.33	29.96	6.72
postdata	57.87	63	5.53	3817	66.32	27.86	5.21

TABLE 2

Roads by Type

Type		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65
IH	(2)							
	predata	60.75	64.81	5.61	879	82.03	51.48	15.8
	interim	59.72	65.16	5.86	433	75.16	42.73	12.58
	postdata	59.29	63.28	5.06	168	75.79	36.68	8.67
US	(7)							
	predata	59.09	64.86	6.03	805	71.86	37.64	8.8
	interim	58.46	63.03	4.92	786	71.56	27.84	4.79
	postdata	58.8	63.76	5.31	1146	74.33	28.82	6.18
SH	(14)							
	predata	57.51	62.92	5.73	2203	58.6	26.93	6.69
	interim	57.68	63.12	5.79	2291	64.44	27.83	6.41
	postdata	57.07	62.59	5.8	2093	59.85	24.44	4.08
FM	(1)							
	predata	55.1	62	6.3	160	43	17	3
	interim	56.6	61.8	5.7	157	60	22	3
	postdata	57.5	61.6	4.6	123	67	21	3
TOTAL								
	predata	58.43	63.68	5.79	4047	65.71	34	8.94
	interim	58.04	63.29	5.61	3667	67.04	29.34	6.65
	postdata	57.75	62.97	5.56	3530	65.56	26.32	4.94

BURNET
District 14

TABLE 3

Roadway	Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
SH71								
predata	60.8	65.6	5.8	152	81	49	13	2/22/84 12n-1p
interim	58.5	63.1	4.8	151	72	31	3	5/23/84 12n-1p
postdata	59.9	64.8	5.7	150	76	44	9	9/5/84 12n-1p
US281s								
predata	58	64.1	6.3	175	66	32	6	2/22/84 5p-6p
interim	58.7	63.5	4.9	167	70	32	5	5/23/84 5p-6p
postdata	58.3	62.8	5.1	163	74	28	1	9/5/84 5p-6p
US183								
predata	61	68.5	6.6	124	78	52	20	2/22/84 630p-730p
interim	59.5	63.7	4.3	154	83	31	7	5/23/84 630p-730p
postdata	59.8	64.3	5.1	167	83	42	5	9/5/84 630p-730p
US281n								
predata	59.8	64.8	5.5	191	77	42	8	2/24/84 4p-5p
interim	58.3	62.8	5.1	152	69	29	6	5/25/84 4p-5p
postdata	59.7	65	5.7	164	83	37	12	9/7/84 4p-5p
RR1431								
predata	55.1	62	6.3	160	43	17	3	2/24/84 3p-4p
interim	56.6	61.8	5.7	157	60	22	3	5/25/84 3p-4p
postdata	57.5	61.6	4.6	123	67	21	3	9/7/84 3p-4p
TOTAL County-Wide								
predata	58.84	64.81	6.06	802	68.73	37.7	9.37	
interim	58.32	62.98	4.96	781	70.75	29.02	4.8	
postdata	59.11	63.8	5.27	767	77.15	34.98	6.11	

GALVESTON
District 12

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
SH146	Kemah-Texas City								
	predata	53.6	59.7	6.6	160	36	11	2	2/20/84 4p-5p
	interim	56.6	61.9	5.9	172	52	19	6	5/7/84 4p-5p
	postdata	55.1	60	5.9	168	41	12	3	9/10/84 4p-5p
SH6	SH3-Brazoria Co.								
	predata	55.3	60.8	5.3	198	47	14	1	2/20/84 5p-6p
	interim	55.6	62	6.3	166	51	21	3	5/7/84 5p-6p
	postdata	55.7	61.4	5.2	207	49	16	0	9/10/84 5p-6p
SH3									
	predata	55.6	61	5.9	150	48	14	4	2/21/84 6:45a-8a
	interim	55.8	61	5.3	170	55	14	1	5/8/84 7a-8a
	postdata	54.1	60.1	6.3	134	42	9	0	9/4/84 7a-8a
SH87									
	predata	57.94	63.55	5.85	278	61.37	30.37	5	2/29/84 4p-5p
	interim	56.7	63.1	6.3	163	58	23	6	5/9/84 4p-5p
	postdata	56.5	61.5	5.8	131	60	16	5	9/5/84 4p-5p
TOTAL	County-wide								
	predata	55.94	61.59	5.87	786	50.03	19.18	3.19	
	interim	56.17	61.99	5.94	671	53.97	19.2	3.99	
	postdata	55.37	60.78	5.74	640	47.69	13.48	1.81	

GRIMES
District 17

Roadway	Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
SH6								
predata	59.3	65.3	6.1	261	70	42	10	2/24/84 4p-5p
interim	60.1	65.8	6	287	80	48	13	5/11/84 4p-5p
postdata	58.2	64.6	6	209	64	31	4	9/7/84 4p-5p
SH105								
predata	58.4	64.5	6	132	62	36	9	2/22/84 5p-6p
interim	58.8	64.2	5.8	172	73	32	10	5/9/84 5p-6p
postdata	57.6	62.6	5.3	153	64	27	3	9/5/84 6p-630p
SH90								
predata	56.2	61.7	5.3	130	50	19	3	2/24/84 5p-6p
interim	57.9	63.3	6.2	188	69	27	5	5/11/84 5p-6p
postdata	56.3	62.6	6.1	172	55	25	1	9/7/84 5p-6p
TOTAL	County-wide							
predata	58.3	64.2	5.88	523	63.01	34.77	8.01	
interim	59.12	64.65	6	647	74.94	37.64	9.88	
postdata	57.42	63.38	5.83	534	61.1	27.92	2.75	

C
E

HARRISON
District 19

Roadway	Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
IH20								02/21/84
predata	60.3	64	5.7	681	80	49	14	6-7,7-8,11-12,12-1
interim	58.3	63.7	5.9	247	67	35	7	5/15/84 12-1p
postdata	57.2	61.5	5.5	246	62	18	6	9/11/84 12-1p
TOTAL	County-wide							
	predata	60.3	64	5.7	681	80	49	14
	interim	58.3	63.7	5.9	247	67	35	7
	postdata	57.2	61.5	5.5	246	62	18	6

**VAL VERDE
District 9**

Roadway	Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
SH277								
predata	59.8	68	7.3	43	58	41	23	2/24/84 3p-4:30p
interim	56.3	62.4	6.6	59	52	20	5	4/12/84 4p-5p
postdata	59.4	66	6.5	52	73	34	15	9/27/84 8a-945a
SH90								
predata	59.1	64	7.9	65	72	33	13	2/24/84 10a-1p
interim	56.9	64.6	7	56	50	32	7	4/12/84 8a-9a
postdata	58.8	65.3	6.3	75	77	30	12	9/7/84 4p-5p
TOTAL County-wide								
predata	59.38	65.59	7.66	108	66.43	36.19	16.98	
interim	56.59	63.47	6.79	115	51.03	25.84	5.97	
postdata	59.05	65.59	6.38	127	75.36	31.64	13.23	

WILLIAMSON
District 14

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
US79	predata	58.7	63.3	5.5	162	72	32	4	2/24/84 6a-7a
	interim	57.3	61.6	5	156	66	19	0	5/11/84 6a-7a
	postdata	58	62.1	4	186	70	24	2	9/7/84 6a-7a
US183	predata	58.3	64.5	6.5	153	67	33	9	2/24/84 7a-8a
	interim	58.5	63.5	5.3	157	70	28	6	5/11/84 7a-8a
	postdata	58.5	63.6	5.6	154	72	26	7	9/7/84 7a-8a
SH29	predata	58.7	63.4	4.8	157	72	32	3	2/24/84 8a-9a
	interim	58	62.7	5	153	68	24	5	5/11/84 8a-9a
	postdata	58.4	62	4.8	164	79	28	2	9/7/84 8a-9a
SH195	predata	59.2	64.1	5.6	159	74	37	8	2/24/84 6p-7p
	interim	59.2	63.6	5.3	162	78	35	9	5/11/84 6p-7p
	postdata	59	63.6	5.1	155	75	34	7	9/7/84 6p-7p
IH35	predata	62.3	67.6	5.3	198	89	60	22	2/24/84 7p-8p
	interim	61.6	67.1	5.8	186	86	53	20	5/11/84 7p-8p
	postdata	61.9	65.5	4.5	197	93	60	12	9/7/84 7p-8p
TOTAL	County-Wide								
	predata	59.58	64.72	5.52	829	75.52	39.83	9.8	
	interim	59.02	63.83	5.3	814	74.11	32.63	8.46	
	postdata	59.25	63.4	4.76	856	78.28	35.22	6.11	

WISE
District 2

Roadway		AvgSpd	85%Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
SH114	Bridgeport to Denton Co.								
	predata	57.1	61.6	5.3	161	63	19	3	3/5/84 6a-7a
	interim	59	64	5.6	211	72	34	9	5/14/84 6a-7a
	postdata	56.3	62.6	6.2	150	54	21	4	9/10/84 6a-7a
US380	Bridgeport to Denton Co.								
	predata	58.8	63.3	5.7	170	72	27	5	3/5/84 7a-8a
	interim	59.3	64.4	5.3	164	76	39	8	5/14/84 7a-8a
	postdata	59.6	66	6.3	174	72	40	14	9/10/84 7a-8a
US287	Alvord to Montague co.								
	predata	59.5	64.6	5.2	153	71	35	8	3/5/84 12n-1p
	interim	58.8	64.6	5.9	155	65	35	7	5/14/84 12n-1p
	postdata	57.6	62.5	5.5	150	66	22	2	9/10/84 12n-1p
SH101	Bridgeport to Chico								
	predata	55.8	60.6	5.3	157	55	13	0	3/5/84 5p-6p
	interim	55	60.6	6	181	44	13	2	5/14/84 5p-6p
	postdata	56.1	62.4	6.8	173	49	23	5	9/10/84 5p-6p
TOTAL	County-wide								
	predata	57.81	62.52	5.38	641	65.34	23.47	3.99	
	interim	58.01	63.36	5.7	711	64.27	30.03	6.55	
	postdata	57.44	63.44	6.23	647	60.29	26.88	6.49	

ALL TARGET COUNTIES

TABLE 1

County		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65
Bastrop	predata	58.82	63.96	5.52	669	72.05	33.72	7.14
	postdata	58.16	62.72	5.15	539	71.07	28.68	5.5
Bowie	predata	61.61	66.2	5.57	404	86.05	55.62	14.78
	postdata	61.08	65.74	5.05	357	86	51.35	12.9
Chambers	predata	60.8	66.67	6.14	617	80.16	47.32	17.56
	postdata	60.73	65.99	5.53	469	83.86	46.98	18.51
Denton	predata	57.49	62.69	6	317	65.41	26.41	5
	postdata	58.62	63.29	4.77	341	74.04	26.26	6.09
Ellis	predata	60.1	65.2	5.7	203	80	44	11
	postdata	60.1	63.5	4.4	156	87	46	2
McLennan	predata	59.3	64.09	4.78	545	77.74	36.54	5.89
	postdata	59.89	64.04	5.57	638	80.51	38.93	7.08
Harris	predata	59.24	64.97	5.7	396	70.76	39.18	9.36
	postdata	57.75	63.27	5.91	354	63.86	28.08	7.54
Madison	predata	60.66	65.56	5.41	351	83.94	46.47	11.59
	postdata	59.21	65.25	5.87	339	72.54	34.88	12.06
Nolan	predata	59.89	65.11	5.48	468	79.96	39.13	11.39
	postdata	60.42	66.14	5.51	335	77.47	45.27	14.67
Sutton	predata	58.55	63.97	6.06	160	67.65	28.93	7.38
	postdata	58.53	64.09	5.59	195	68.87	32.08	6.63
Van Zandt	predata	61	67	6.5	204	79	50	19
	postdata	60.9	65.5	4.6	205	83	48	11
Waller	predata	59.67	64.87	5.43	504	77	42.64	8.07
	postdata	57.6	62.87	5.66	353	63.19	28.19	4.89
Wharton	predata	59.66	65.13	5.52	574	75	40.25	10.69
	postdata	58.1	63.15	5.3	310	68.5	29.48	3.99
TOTAL All Counties	predata	59.75	65.02	5.6	5412	76.77	40.84	10.53
	postdata	59.29	64.24	5.37	4591	75.29	36.79	9

Roads by Type

TABLE 2

Type		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65
IH	predata	60.44	65.69	5.56	2113	81.43	46.07	13.29
	postdata	60.78	65.68	5.25	1842	83.41	47.94	13.03
US	predata	59.62	64.92	5.49	1844	75.49	40.41	9.16
	postdata	58.2	63.43	5.51	1339	68.05	30.35	6.07
SH	predata	58.58	63.89	5.78	1451	70.35	32.08	7.51
	postdata	58.4	63.19	5.4	1370	71.25	28.36	6.45
FM	predata	59.6	65.7	6	156	75	41	13
	postdata	57.8	62.7	5.4	172	69	25	6
TOTAL	predata	59.66	64.97	5.61	5564	76.39	40.4	10.41
	postdata	59.25	64.21	5.37	4723	75	36.44	8.89

BASTROP
District 14

TABLE 3

	Roadway	Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time	Comments
	US290									
	predata	59.6	64.8	5.3	198	75	40	9	4/19/84	5p-6p
	postdata	58.6	62.5	4.5	158	78	31	6	8/9/84	
	SH21W									
	predata	59.9	65	5.9	122	77	42	9	4/19/84	3p-4p
	postdata	58.4	62.5	5	112	71	33	6	8/9/84	
	SH71									
	predata	58.4	63.3	5.3	197	73	29	5	4/19/84	12n-1p
	postdata	57.8	62.8	5.6	137	69	27	5	8/9/84	1p-130p
C-12	SH21e									
	predata	57.5	62.9	5.8	152	63	25	6	4/19/84	8a-9a
	postdata	57.8	63.1	5.6	132	65	24	5	8/9/84	
TOTAL	County-wide									
	predata	58.82	63.96	5.52	669	72.05	33.72	7.14		
	postdata	58.16	62.72	5.15	539	71.07	28.68	5.5		

BOWIE
District 19

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time	Comments
IH30										
	predata	62.3	67.1	6.1	191	85	63	19	4/23/84	11a-12n
	postdata	61.3	65.9	5	161	86	53	14	8/20/84	
IH30(same)										
	predata	61	65.4	5.1	213	87	49	11	4/23/84	1230-115p
	postdata	60.9	65.6	5.1	196	86	50	12	8/20/84	
TOTAL	County-wide									
	predata	61.61	66.2	5.57	404	86.05	55.62	14.78		
	postdata	61.08	65.74	5.05	357	86	51.35	12.9		

C-13

CHAMBERS
District 20

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time	Comments
IH10										
	predata	60.8	66.5	5.8	444	81	49	17	4/21/84	4p-5p
	postdata	61.8	67.3	5.5	307	88	57	23	8/3/84	
SH124										
	predata	60.8	67.1	7	173	78	43	19	4/19/84	5p-6p
	postdata	58.7	63.5	5.6	162	76	28	10	8/3/84	
TOTAL	County-wide									
	predata	60.8	66.67	6.14	617	80.16	47.32	17.56		
	postdata	60.73	65.99	5.53	469	83.86	46.98	18.51		

DENTON
District 18

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
SH380	Through County								
	predata	56.8	62	6.3	161	60	21	5	4/11/84 345-430p
	postdata	59.1	64.1	5.1	178	75	32	8	8/22/84
SH114	Through County								
	predata	58.2	63.4	5.7	156	71	32	5	4/11/84 445-520p
	postdata	58.1	62.4	4.4	163	73	20	4	8/22/84
TOTAL	County-wide								
	predata	57.49	62.69	6	317	65.41	26.41	5	
	postdata	58.62	63.29	4.77	341	74.04	26.26	6.09	

ELLIS
District 18

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
IH35E	FM66-US77								
	predata	60.1	65.2	5.7	203	80	44	11	4/12/84 7a-7:30a
	postdata	60.1	63.5	4.4	156	87	46	2	8/23/84
TOTAL	County-wide								
	predata	60.1	65.2	5.7	203	80	44	11	
	postdata	60.1	63.5	4.4	156	87	46	2	

MCLENNAN
District 9

		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
Roadway SH6W									
	predata	58.2	63.3	5	158	70	30	2	4/18/84 5p-6p
	postdata	58.5	63	6.1	184	72	29	6	8/15/84
IH35s									
	predata	60.3	65	4.6	224	83	43	10	4/18/84 4p-5p
	postdata	60.6	64.6	5.6	236	83	42	8	8/15/84
IH35n									
	predata	59	63.6	4.8	163	78	34	4	4/18/84 12n-1p
	postdata	60.3	64.3	5.1	218	85	44	7	8/15/84
TOTAL	County-wide								
	predata	59.3	64.09	4.78	545	77.74	36.54	5.89	
	postdata	59.89	64.04	5.57	638	80.51	38.93	7.08	

C-15

HARRIS
District 12

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
US290									
	predata	59	64.5	5.5	240	68	38	7	4/27/84 4p-5p
	postdata	57.7	63.8	6.4	182	59	31	9	8/10/84
FM529									
	predata	59.6	65.7	6	156	75	41	13	4/27/84 5p-6p
	postdata	57.8	62.7	5.4	172	69	25	6	8/10/84
TOTAL	County-wide								
	predata	59.24	64.97	5.7	396	70.76	39.18	9.36	
	postdata	57.75	63.27	5.91	354	63.86	28.08	7.54	

C-16

MADISON
District 17

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
IH45									
	predata	60.8	65.8	5.5	186	83	46	13	4/16/84 410-450p
	postdata	59.8	66.9	6.1	184	73	39	18	8/13/84
US190									
	predata	60.5	65.3	5.3	165	85	47	10	4/18/84 450-530p
	postdata	58.5	63.3	5.6	155	72	30	5	8/13/84
TOTAL	County-wide								
	predata	60.66	65.56	5.41	351	83.94	46.47	11.59	
	postdata	59.21	65.25	5.87	339	72.54	34.88	12.06	

NOLAN
District 8

Roadway		AvgSpd	85%Spd	S.D.	N	%>55	%>60	%>65	date,time Comments
IH20									
	predata	59.5	64.8	5.6	285	78	36	11	4/13/84 5p-6p
	postdata	60.7	66.7	5.6	179	77	49	17	8/17/84
US84									
	predata	60.5	65.6	5.3	183	83	44	12	4/13/84 4p-5p
	postdata	60.1	65.5	5.4	156	78	41	12	8/17/84
TOTAL	County-wide								
	predata	59.89	65.11	5.48	468	79.96	39.13	11.39	
	postdata	60.42	66.14	5.51	335	77.47	45.27	14.67	

SUTTON
District 7

Roadway		AvgSpd	85%Spd	S.D.	N	%>55	%>60	%>65	date,time Comments
US277n									
	predata	58.3	63.5	5.7	116	66	27	6	4/11/84 2p-3p
	postdata	59	64.8	6.1	118	74	38	9	8/15/84
US277s									
	predata	59.2	65.2	7	44	72	34	11	4/11/84 4p-5p
	postdata	57.8	63	4.8	77	61	23	3	8/15/84
TOTAL	County-wide								
	predata	58.55	63.97	6.06	160	67.65	28.93	7.38	
	postdata	58.53	64.09	5.59	195	68.87	32.08	6.63	

VAN ZANDT
District 10

Roadway		AvgSpd	85%Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
IH20	Through County								
	predata	61	67	6.5	204	79	50	19	4/11/84 12-1p
	postdata	60.9	65.5	4.6	205	83	48	11	8/22/84
TOTAL	County-wide								
	predata	61	67	6.5	204	79	50	19	
	postdata	60.9	65.5	4.6	205	83	48	11	

WALLER
District 12

Roadway		AvgSpd	85%Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
SH6									
	predata	59.8	65	5.3	180	77	42	10	4/27/84 1p-2p
	postdata	59	63.8	5.5	170	72	37	8	8/10/84
US290									
	predata	59.6	64.8	5.5	324	77	43	7	4/27/84 3p-330p
	postdata	56.3	62	5.8	183	55	20	2	8/10/84
TOTAL	County-wide								
	predata	59.67	64.87	5.43	504	77	42.64	8.07	
	postdata	57.6	62.87	5.66	353	63.19	28.19	4.89	

WHARTON
District 13

Roadway		Avg Spd	85% Spd	S.D.	N	%>55	%>60	%>65	date, time Comments
US59									
	predata	59.6	65.1	5.3	395	75	39	11	4/23/84 3p-340p
	postdata	58.2	63.2	5.6	154	68	32	5	8/20/84
US90A									
	predata	59.8	65.2	6	179	75	43	10	4/23/84 4p-5p
	postdata	58	63.1	5	156	69	27	3	8/20/84
TOTAL	County-wide								
	predata	59.66	65.13	5.52	574	75	40.25	10.69	
	postdata	58.1	63.15	5.3	310	68.5	29.48	3.99	

APPENDIX D

TICKETING ACTIVITY - PHASE 1

COUNTY BURNET

ROAD	MONTH	HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
FM1431	MARCH	59	100	29
	APRIL	38	49	19
	MAY	18	11	5
	JUNE	4	5	0
	JULY	11	19	4
	AUGUST	17	27	7
OTHER	APRIL	4	9	8
	MAY	15	25	0
	JUNE	1	2	0
	JULY	8	7	1
	AUGUST	4	7	0
SH29	MAY	2	1	0
SH71	MARCH	38	97	25
	APRIL	75	140	39
	MAY	67	140	34
	JUNE	56	130	31
	JULY	75	118	11
	AUGUST	82	106	21
US183	MARCH	82	164	25
	APRIL	60	128	10
	MAY	153	257	39
	JUNE	177	340	33
	JULY	129	289	13
	AUGUST	170	319	31

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

COUNTY BURNET

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
US281	MARCH	220	396	78
	APRIL	188	349	39
	MAY	191	356	36
	JUNE	231	426	46
	JULY	187	405	42
	AUGUST	207	499	39
	ROAD			
FM1431	TOTAL	147	211	64
OTHER	TOTAL	32	50	9
SH29	TOTAL	2	1	0
SH71	TOTAL	393	731	161
US183	TOTAL	771	1497	151
US281	TOTAL	1224	2431	280

TICKETING ACTIVITY - PHASE 1

COUNTY GALVESTO

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
OTHER	JUNE	2	7	0
	JULY	9	23	4
	AUGUST	17	44	4
SH146	MARCH	106	108	33
	APRIL	145	110	56
	MAY	101	95	38
	JUNE	214	236	53
	JULY	16	7	1
SH3	MARCH	62	66	28
	APRIL	28	24	15
	MAY	88	81	27
	JUNE	66	57	16
	JULY	81	81	19
	AUGUST	37	39	29
SH6	MARCH	142	142	44
	APRIL	120	127	39
	MAY	133	127	37
	JUNE	107	126	33
	JULY	137	128	45
	AUGUST	118	131	47
	SEPTEMBER	7	6	0
SH87	MARCH	60	58	27
	APRIL	69	48	32
	MAY	14	21	4

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

COUNTY GALVESTON

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
SH87	JUNE	20	15	14
	JULY	158	143	28
	AUGUST	84	68	24
ROAD				
OTHER	TOTAL	28	74	8
SH146	TOTAL	582	556	181
SH3	TOTAL	362	348	134
SH6	TOTAL	764	787	245
SH87	TOTAL	405	353	129

TICKETING ACTIVITY - PHASE 1

COUNTY GRIMES

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
FM105	APRIL	3	6	1
	MAY	3	0	0
	JULY	5	1	4
	AUGUST	6	7	5
FM1227	MARCH	12	6	2
	APRIL	6	2	1
	MAY	2	0	1
FM244	MARCH	20	13	6
	APRIL	17	13	4
	MAY	9	5	0
	JULY	2	0	0
	AUGUST	1	0	0
OTHER	MARCH	13	22	2
	APRIL	13	30	3
	MAY	4	7	0
	JULY	6	7	0
	AUGUST	6	6	0
SH105	MARCH	57	64	11
	APRIL	45	60	9
	MAY	105	91	23
	JULY	32	37	5
	AUGUST	36	40	10
SH30	MAY	9	16	0
	JULY	1	1	0

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

COUNTY GRIMES

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
SH30	AUGUST	1	2	1
SH6	MARCH	150	296	25
	APRIL	173	314	24
	MAY	432	705	75
	JULY	233	330	52
	AUGUST	188	272	21
SH90	MARCH	57	64	23
	APRIL	62	66	7
	MAY	148	133	20
	JULY	48	50	8
	AUGUST	49	65	14
ROAD				
FM105	TOTAL	17	14	10
FM1227	TOTAL	20	8	4
FM244	TOTAL	49	31	10
OTHER	TOTAL	41	72	5
SH105	TOTAL	275	292	58
SH30	TOTAL	11	19	1
SH6	TOTAL	1175	1917	197
SH90	TOTAL	364	378	72

TICKETING ACTIVITY - PHASE 1

COUNTY HARRISON

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
IH20	MARCH	400	672	98
	APRIL	352	580	113
	MAY	352	540	75
	JUNE	400	670	109
	JULY	280	366	69
ROAD				
IH20	TOTAL	1784	2828	464

TICKETING ACTIVITY - PHASE 1

COUNTY VALVERDE

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
US277	MARCH	160	131	44
	APRIL	152	150	59
	MAY	144	118	51
	JUNE	190	146	59
	JULY	143	114	48
	AUGUST	161	134	50
US90	MARCH	161	210	105
	APRIL	168	167	75
	MAY	160	153	75
	JUNE	192	144	108
	JULY	160	147	79
	AUGUST	144	140	51
ROAD				
US277	TOTAL	950	793	311
US90	TOTAL	985	961	493

TICKETING ACTIVITY - PHASE 1

COUNTY WILLIAMS

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
IH35	MARCH	119	301	15
	APRIL	18	62	0
	MAY	20	63	0
	JUNE	24	74	1
	AUGUST	17	36	2
SH195	MARCH	64	105	8
	APRIL	70	142	6
	MAY	63	180	13
	JUNE	96	199	13
	AUGUST	37	50	4
SH29	MARCH	143	337	55
	APRIL	68	183	18
	MAY	54	88	13
	JUNE	72	159	38
	AUGUST	36	65	7
US183	MARCH	141	348	80
	APRIL	69	177	35
	MAY	61	169	39
	JUNE	60	131	17
	AUGUST	45	88	11
US79	MARCH	282	645	77
	APRIL	126	317	30
	MAY	116	311	24
	JUNE	170	405	43

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

COUNTY WILLIAMS

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
US79	AUGUST	87	147	23
ROAD				
IH35	TOTAL	198	536	18
SH195	TOTAL	330	676	44
SH29	TOTAL	373	832	131
US183	TOTAL	376	913	182
US79	TOTAL	781	1825	197

TICKETING ACTIVITY - PHASE 1

COUNTY WISE

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
OTHER	APRIL	4	9	2
	MAY	1	2	0
	JUNE	3	1	2
SH101	APRIL	34	39	16
	MAY	33	32	19
	JUNE	40	22	30
	JULY	33	31	22
	AUGUST	21	12	9
SH114	APRIL	122	183	49
	MAY	145	189	105
	JUNE	174	207	121
	JULY	138	163	69
	AUGUST	121	146	60
US287	JUNE	8	9	7
	JULY	9	14	5
US380	APRIL	149	227	96
	MAY	134	187	79
	JUNE	183	231	135
	JULY	156	212	82
	AUGUST	140	181	57
US81	APRIL	64	98	22
	MAY	64	94	48
	JUNE	57	96	32
	JULY	40	57	18

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

COUNTY WISE

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
US81	AUGUST	58	80	18
ROAD				
OTHER	TOTAL	8	12	4
SH101	TOTAL	161	136	96
SH114	TOTAL	700	888	404
US287	TOTAL	17	23	12
US380	TOTAL	762	1038	449
US81	TOTAL	283	425	138

TICKETING ACTIVITY - PHASE 1

TOTAL

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH			
FM105	APRIL	3	6	1
	MAY	3	0	0
	JULY	5	1	4
	AUGUST	6	7	5
FM1227	MARCH	12	6	2
	APRIL	6	2	1
	MAY	2	0	1
FM1431	MARCH	59	100	29
	APRIL	38	49	19
	MAY	18	11	5
	JUNE	4	5	0
	JULY	11	19	4
	AUGUST	17	27	7
FM244	MARCH	20	13	6
	APRIL	17	13	4
	MAY	9	5	0
	JULY	2	0	0
	AUGUST	1	0	0
IH20	MARCH	400	672	98
	APRIL	352	580	113
	MAY	352	540	75
	JUNE	400	670	109
	JULY	280	366	69
IH35	MARCH	119	301	15

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

TOTAL

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
IH35	APRIL	18	62	0
	MAY	20	63	0
	JUNE	24	74	1
	AUGUST	17	36	2
OTHER	MARCH	13	22	2
	APRIL	21	48	13
	MAY	20	34	0
	JUNE	6	10	2
	JULY	23	37	5
	AUGUST	27	57	4
SH101	APRIL	34	39	16
	MAY	33	32	19
	JUNE	40	22	30
	JULY	33	31	22
	AUGUST	21	12	9
SH105	MARCH	57	64	11
	APRIL	45	60	9
	MAY	105	91	23
	JULY	32	37	5
	AUGUST	36	40	10
SH114	APRIL	122	183	49
	MAY	145	189	105
	JUNE	174	207	121
	JULY	138	163	69

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

TOTAL

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH			
SH114	AUGUST	121	146	60
SH146	MARCH	106	108	33
	APRIL	145	110	56
	MAY	101	95	38
	JUNE	214	236	53
	JULY	16	7	1
SH195	MARCH	64	105	8
	APRIL	70	142	6
	MAY	63	180	13
	JUNE	96	199	13
	AUGUST	37	50	4
SH29	MARCH	143	337	55
	APRIL	68	183	18
	MAY	56	89	13
	JUNE	72	159	38
	AUGUST	36	65	7
SH3	MARCH	62	66	28
	APRIL	28	24	15
	MAY	88	81	27
	JUNE	66	57	16
	JULY	81	81	19
	AUGUST	37	39	29
SH30	MAY	9	16	0
	JULY	1	1	0

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

TOTAL

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
SH30	AUGUST	1	2	1
SH6	MARCH	292	438	69
	APRIL	293	441	63
	MAY	630	949	144
	JUNE	107	126	33
	JULY	370	458	97
	AUGUST	306	403	68
	SEPTEMBER	7	6	0
SH71	MARCH	38	97	25
	APRIL	75	140	39
	MAY	67	140	34
	JUNE	56	130	31
	JULY	75	118	11
	AUGUST	82	106	21
SH87	MARCH	60	58	27
	APRIL	69	48	32
	MAY	14	21	4
	JUNE	20	15	14
	JULY	158	143	28
	AUGUST	84	68	24
SH90	MARCH	57	64	23
	APRIL	62	66	7
	MAY	148	133	20
	JULY	48	50	8

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

TOTAL

ROAD	MONTH	HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
SH90	AUGUST	49	65	14
	MARCH	223	512	105
	APRIL	129	305	45
	MAY	214	426	78
	JUNE	237	471	50
	JULY	129	289	13
US183	AUGUST	215	407	42
	MARCH	160	131	44
	APRIL	152	150	59
	MAY	144	118	51
	JUNE	190	146	59
	JULY	143	114	48
US277	AUGUST	161	134	50
	MARCH	220	396	78
	APRIL	188	349	39
	MAY	191	356	36
	JUNE	231	426	46
	JULY	187	405	42
US281	AUGUST	207	499	39
	MARCH	220	396	78
	APRIL	188	349	39
	MAY	191	356	36
	JUNE	231	426	46
	JULY	187	405	42
US287	AUGUST	207	499	39
	JUNE	8	9	7
US290	JULY	9	14	5
	MAY	173	328	70
US380	APRIL	149	227	96
	MAY	134	187	79

(CONTINUED)

TICKETING ACTIVITY - PHASE 1

TOTAL

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD				
IH20	TOTAL	1784	2828	464
IH35	TOTAL	198	536	18
OTHER	TOTAL	109	208	26
SH101	TOTAL	161	136	96
SH105	TOTAL	275	292	58
SH114	TOTAL	700	888	404
SH146	TOTAL	582	556	181
SH195	TOTAL	330	676	44
SH29	TOTAL	375	833	131
SH3	TOTAL	362	348	134
SH30	TOTAL	11	19	1
SH6	TOTAL	2004	2821	474
SH71	TOTAL	393	731	161
SH87	TOTAL	405	353	129
SH90	TOTAL	364	378	72
US183	TOTAL	1147	2410	333
US277	TOTAL	950	793	311
US281	TOTAL	1224	2431	280
US287	TOTAL	17	23	12
US290	TOTAL	173	328	70
US380	TOTAL	762	1038	449
US79	TOTAL	781	1825	197
US81	TOTAL	283	425	138
US90	TOTAL	985	961	493

TICKETING ACTIVITY - PHASE 1

TOTAL

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
US380	JUNE	183	231	135
	JULY	156	212	82
	AUGUST	140	181	57
US79	MARCH	282	645	77
	APRIL	126	317	30
	MAY	116	311	24
	JUNE	170	405	43
	AUGUST	87	147	23
US81	APRIL	64	98	22
	MAY	64	94	48
	JUNE	57	96	32
	JULY	40	57	18
	AUGUST	58	80	18
US90	MARCH	161	210	105
	APRIL	168	167	75
	MAY	160	153	75
	JUNE	192	144	108
	JULY	160	147	79
	AUGUST	144	140	51
ROAD				
FM105	TOTAL	17	14	10
FM1227	TOTAL	20	8	4
FM1431	TOTAL	147	211	64
FM244	TOTAL	49	31	10

(CONTINUED)

TICKETING ACTIVITY - PHASE 2

COUNTY BASTROP

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
SH21	MAY	175	419	80
	JUNE	205	443	74
	JULY	294	534	101
SH71	MAY	147	390	82
	JUNE	183	446	62
	JULY	483	1046	169
US290	MAY	117	297	58
	JUNE	150	357	37
	JULY	189	536	80
ROAD				
SH21	TOTAL	674	1396	255
SH71	TOTAL	813	1882	313
US290	TOTAL	456	1190	175

TICKETING ACTIVITY - PHASE 2

COUNTY BOWIE

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
IH30	MAY	344	585	172
	JUNE	640	1117	252
ROAD				
IH30	TOTAL	984	1702	424

TICKETING ACTIVITY - PHASE 2

COUNTY CHAMBERS

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH			
IH10	MAY	423	606	137
	JUNE	493	624	171
	JULY	507	754	183
	87	8	11	3
OTHER	MAY	11	20	6
	JUNE	6	4	3
	JULY	2	4	2
SH124	MAY	70	118	45
	JUNE	159	243	66
	JULY	117	177	66
ROAD				
IH10	TOTAL	1431	1995	494
OTHER	TOTAL	19	28	11
SH124	TOTAL	346	538	177

TICKETING ACTIVITY - PHASE 2

COUNTY DENTON

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
OTHER	MAY	5	7	0
	JUNE	8	13	1
	JULY	4	3	4
SH114	MAY	304	503	134
	JUNE	396	512	145
	JULY	312	390	106
US380	MAY	295	317	120
	JUNE	514	388	173
	JULY	290	270	152
	67	7	4	3
ROAD				
OTHER	TOTAL	16	23	5
SH114	TOTAL	1012	1405	385
US380	TOTAL	1106	979	448

TICKETING ACTIVITY - PHASE 2

COUNTY ELLIS

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
IH35	MAY	240	539	107
	JUNE	240	578	78
	JULY	240	560	94
ROAD				
IH35	TOTAL	720	1677	279

TICKETING ACTIVITY - PHASE 2

COUNTY HARRIS

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
FM529	MAY	96	194	48
	JUNE	108	209	94
	JULY	123	164	46
OTHER	JULY	1	1	0
US290	MAY	136	252	50
	JUNE	244	395	125
	JULY	231	369	111
ROAD				
FM529	TOTAL	327	567	188
OTHER	TOTAL	1	1	0
US290	TOTAL	611	1016	286

TICKETING ACTIVITY - PHASE 2

COUNTY MADISON

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
IH45	MAY	108	152	70
	JUNE	121	159	63
	JULY	129	208	74
US190	MAY	111	110	95
	JUNE	133	149	115
	JULY	116	123	78
ROAD				
IH45	TOTAL	358	519	207
US190	TOTAL	360	382	288

TICKETING ACTIVITY - PHASE 2

COUNTY MCLENNAN

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
IH35	MAY	480	868	146
	JUNE	463	729	121
	JULY	481	858	176
OTHER	JULY	1	1	0
SH6	MAY	121	195	60
	JUNE	130	197	62
	JULY	116	125	28
ROAD				
IH35	TOTAL	1424	2455	443
OTHER	TOTAL	1	1	0
SH6	TOTAL	367	517	150

TICKETING ACTIVITY - PHASE 2

COUNTY NOLAN

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
IH20	MAY	118	218	72
	JUNE	160	279	96
	JULY	68	126	28
US84	MAY	104	240	64
	JUNE	112	225	45
	JULY	76	135	24
ROAD				
IH20	TOTAL	346	623	196
US84	TOTAL	292	600	133

TICKETING ACTIVITY - PHASE 2

COUNTY SUTTON

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
IH30	JULY	471	728	263
US277	MAY	272	219	124
	JUNE	334	239	189
	JULY	312	176	128
ROAD				
IH30	TOTAL	471	728	263
US277	TOTAL	918	634	441

TICKETING ACTIVITY - PHASE 2

COUNTY VANZANDT

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
IH20	MAY	304	562	93
	JUNE	424	810	117
	JULY	248	504	91
ROAD				
IH20	TOTAL	976	1876	301

TICKETING ACTIVITY - PHASE 1

COUNTY WALLER

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
SH6	MAY	65	117	32
US290	MAY	173	328	70
ROAD				
SH6	TOTAL	65	117	32
US290	TOTAL	173	328	70

TICKETING ACTIVITY - PHASE 2

COUNTY WALLER

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
OTHER	JULY	1	2	0
SH6	JUNE	102	242	34
	JULY	75	176	23
US290	JUNE	287	639	117
	JULY	229	406	85
US90	JULY	7	12	1
ROAD				
OTHER	TOTAL	1	2	0
SH6	TOTAL	177	418	57
US290	TOTAL	516	1045	202
US90	TOTAL	7	12	1

TICKETING ACTIVITY - PHASE 2

COUNTY WHARTON

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
SH60	MAY	56	68	64
	JUNE	64	92	57
	JULY	80	105	94
US59	MAY	168	262	160
	JUNE	190	321	134
	JULY	224	311	156
US90	MAY	24	24	31
	JUNE	24	35	30
	JULY	32	49	33
ROAD				
SH60	TOTAL	200	265	215
US59	TOTAL	582	894	450
US90	TOTAL	80	108	94

TICKETING ACTIVITY - PHASE 2

TOTAL

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
FM529	MAY	96	194	48
	JUNE	108	209	94
	JULY	123	164	46
IH10	MAY	423	606	137
	JUNE	493	624	171
	JULY	507	754	183
	87	8	11	3
IH20	MAY	422	780	165
	JUNE	584	1089	213
	JULY	316	630	119
IH30	MAY	344	585	172
	JUNE	640	1117	252
	JULY	471	728	263
IH35	MAY	720	1407	253
	JUNE	703	1307	199
	JULY	721	1418	270
IH45	MAY	108	152	70
	JUNE	121	159	63
	JULY	129	208	74
OTHER	MAY	16	27	6
	JUNE	14	17	4
	JULY	9	11	6
SH114	MAY	304	503	134
	JUNE	396	512	145

(CONTINUED)

TICKETING ACTIVITY - PHASE 2

TOTAL

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD	MONTH			
SH114	JULY	312	390	106
SH124	MAY	70	118	45
	JUNE	159	243	66
	JULY	117	177	66
SH21	MAY	175	419	80
	JUNE	205	443	74
	JULY	294	534	101
SH6	MAY	121	195	60
	JUNE	232	439	96
	JULY	191	301	51
SH60	MAY	56	68	64
	JUNE	64	92	57
	JULY	80	105	94
SH71	MAY	147	390	82
	JUNE	183	446	62
	JULY	483	1046	169
US190	MAY	111	110	95
	JUNE	133	149	115
	JULY	116	123	78
US277	MAY	272	219	124
	JUNE	334	239	189
	JULY	312	176	128
US290	MAY	253	549	108
	JUNE	681	1391	279

(CONTINUED)

TICKETING ACTIVITY - PHASE 2

TOTAL

		HOURS	ARRESTS	WARNINGS
ROAD	MONTH	SUM	SUM	SUM
US290	JULY	649	1311	276
US380	MAY	295	317	120
	JUNE	514	388	173
	JULY	290	270	152
	67	7	4	3
US59	MAY	168	262	160
	JUNE	190	321	134
	JULY	224	311	156
US84	MAY	104	240	64
	JUNE	112	225	45
	JULY	76	135	24
US90	MAY	24	24	31
	JUNE	24	35	30
	JULY	39	61	34
ROAD				
FM529	TOTAL	327	567	188
IH10	TOTAL	1431	1995	494
IH20	TOTAL	1322	2499	497
IH30	TOTAL	1455	2430	687
IH35	TOTAL	2144	4132	722
IH45	TOTAL	358	519	207
OTHER	TOTAL	38	55	16
SH114	TOTAL	1012	1405	385
SH124	TOTAL	346	538	177

(CONTINUED)

TICKETING ACTIVITY - PHASE 2

TOTAL

		HOURS	ARRESTS	WARNINGS
		SUM	SUM	SUM
ROAD				
SH21	TOTAL	674	1396	255
SH6	TOTAL	544	935	207
SH60	TOTAL	200	265	215
SH71	TOTAL	813	1882	313
US190	TOTAL	360	382	288
US277	TOTAL	918	634	441
US290	TOTAL	1583	3251	663
US380	TOTAL	1106	979	448
US59	TOTAL	582	894	450
US84	TOTAL	292	600	133
US90	TOTAL	87	120	95

APPENDIX E

**TEXAS DEPARTMENT OF PUBLIC SAFETY
HIGHWAY PATROL PERFORMANCE DATA**

Month of April 19 84

	REGION 1		REGION 2		REGION 3		REGION 4		REGION 5		REGION 6		TURN PIKE	MONTH TOTAL	
	DIST A	DIST B		THIS YEAR	LAST YEAR										
NUMBER OF TROOPERS	75	105	161	81	97	88	83	81	99	79	131	96	-	1176	1125
AV. ROUTINE UNITS PER DAY	32+	45-	65-	35-	43-	40-	38	42-	45+	35+	57-	41+	-	518-	525-
TOTAL ARRESTS PER TROOPER	119	100	125	111	113	141	101	106	119	97	97	148	-	115	103
HAZARDOUS ARR. PER TROOPER	80	72	83	71	73	92	73	73	88	71	70	106	-	80	74
% HAZARDOUS OF TOTAL	67	72	67	64	65	66	73	69	74	73	71	72	-	69	72
DWI ARRESTS PER TROOPER	3.3	3.7	4.3	5.1	6.6	4.1	2.4	2.7	4.0	2.3	3.8	3.6	-	3.9	5.0
EQUIPMENT ARR. PER TROOPER	5.9	3.6	5.9	6.4	5.9	5.6	5.5	4.0	8.9	6.7	4.8	8.6	-	5.9	6.2
ACC. INV. PER TROOPER	3.9	3.9	4.3	5.2	4.2	2.3	3.4	2.5	2.8	1.9	3.8	6.5	-	3.8	3.7
TRAFFIC CONTACTS PER TROOPER	90	79	94	83	83	100	82	80	100	80	78	121	-	89	84
HAZARDOUS WAR. PER TROOPER	27	36	30	49	36	40	55	43	50	54	31	24	-	38	35
ARRESTS PER ROUTINE UNIT MO.	275.0	234.4	312.2	259.4	256.8	310.8	219.6	206.5	262.3	217.2	224.3	344.2	-	261.7	241.0
CONVICTION RATE															
% HOURS ON ROUTINE PATROL	65	58	59	65	53	58	58	63	64	62	65	57	-	61	66
MILES PER TRAFFIC CONTACT	29	18	22	27	25	21	28	27	25	26	28	19	-	24	25

**TEXAS DEPARTMENT OF PUBLIC SAFETY
HIGHWAY PATROL PERFORMANCE DATA**

Month of MAY 19 84

	REGION 1		REGION 2		REGION 3		REGION 4		REGION 5		REGION 6		TURN PIKE	MONTH TOTAL	
	DIST A	DIST B		THIS YEAR	LAST YEAR										
NUMBER OF TROOPERS	78	104	166	92	100	88	84	81	106	84	131	98	-	1212	1221
AV. ROUTINE UNITS PER DAY	31	43	65-	33-	42+	38+	37+	37+	45-	33+	56+	42+	-	502+	525-
TOTAL ARRESTS PER TROOPER	125	115	131	96	112	137	95	109	111	96	113	162	-	118	106
HAZARDOUS ARR. PER TROOPER	82	85	89	65	74	91	71	80	79	71	83	108	-	82	74
% HAZARDOUS OF TOTAL	65	74	67	68	66	67	75	73	71	74	74	67	-	70	70
DWI ARRESTS PER TROOPER	2.2	2.6	3.8	4.4	5.6	4.0	2.0	2.3	3.6	2.2	3.4	4.2	-	3.5	4.8
EQUIPMENT ARR. PER TROOPER	8.7	4.7	6.8	6.1	6.9	7.7	6.0	4.7	9.6	6.5	6.0	12.4	-	7.2	7.0
ACC. INV. PER TROOPER	4.7	4.3	4.2	5.0	3.9	2.7	3.4	2.8	3.2	2.0	4.0	6.6	-	4.0	4.0
TRAFFIC CONTACTS PER TROOPER	95	94	100	76	85	102	81	87	91	80	94	127	-	93	85
HAZARDOUS WAR. PER TROOPER	27	39	30	43	36	37	56	43	48	56	31	25	-	38	38
ARRESTS PER ROUTINE UNIT MO.	313.5	277.7	336.6	270.8	263.5	314.9	213.6	236.4	263.4	241.9	261.0	374.5	-	283.5	248.1
CONVICTION RATE															
% HOURS ON ROUTINE PATROL	61	62	61	61	55	57	57	61	64	61	65	63	-	61	62
MILES PER TRAFFIC CONTACT	28	26	22	29	24	20	28	26	25	25	25	19	-	24	25

**TEXAS DEPARTMENT OF PUBLIC SAFETY
HIGHWAY PATROL PERFORMANCE DATA**

Month of JUNE 19 84

	REGION 1		REGION 2		REGION 3		REGION 4		REGION 5		REGION 6		TURN PIKE	MONTH TOTAL	
	DIST A	DIST B		THIS YEAR	LAST YEAR										
NUMBER OF TROOPERS	80	103	164	93	95	89	81	81	106	84	131	97	-	1204	1219
AV. ROUTINE UNITS PER DAY	30-	43-	62+	32-	41	38-	34+	37-	45-	34-	52+	41+	-	489-	492+
TOTAL ARRESTS PER TROOPER	112	115	131	94	107	133	91	107	103	95	104	162	-	114	102
HAZARDOUS ARR PER TROOPER	71	87	87	64	70	88	68	76	74	70	76	108	-	79	73
% HAZARDOUS OF TOTAL	64	75	67	68	65	66	74	71	72	74	73	67	-	69	71
DWI ARRESTS PER TROOPER	1.8	2.6	3.5	4.3	4.7	3.7	2.4	2.6	3.0	1.7	2.7	3.5	-	3.1	4.3
EQUIPMENT ARR PER TROOPER	7.7	3.3	6.9	5.4	6.6	6.4	5.5	4.6	9.0	6.1	5.0	11.5	-	6.5	6.2
ACC. INV PER TROOPER	4.6	4.6	4.1	4.6	4.2	2.4	3.7	2.6	3.2	2.6	4.1	6.8	-	4.0	3.8
TRAFFIC CONTACTS PER TROOPER	83	95	98	74	81	97	77	83	86	79	85	127	-	90	83
HAZARDOUS WAR PER TROOPER	26	37	28	40	31	35	53	42	44	54	27	23	-	36	38
ARRESTS PER ROUTINE UNIT MO.	303.4	275.7	345.7	275.9	246.8	314.9	214.8	235.8	244.7	236.3	261.0	378.9	-	281.3	252.5
CONVICTION RATE	76	84	76	79	79	78	83	82	83	81	86	77	-	80	78
% HOURS ON ROUTINE PATROL	67	65	63	65	61	63	59	68	69	67	66	63	-	65	65
MILES PER TRAFFIC CONTACT	28	23	20	28	23	20	28	27	25	23	25	20	-	23	25

**TEXAS DEPARTMENT OF PUBLIC SAFETY
HIGHWAY PATROL PERFORMANCE DATA**

Month of JULY 19 84

	REGION 1		REGION 2		REGION 3		REGION 4		REGION 5		REGION 6		TURN PIKE	MONTH TOTAL	
	DIST A	DIST B		THIS YEAR	LAST YEAR										
NUMBER OF TROOPERS	79	102	165	93	94	89	81	81	106	83	132	96	-	1201	1211
AV. ROUTINE UNITS PER DAY	29+	42-	60-	31-	40-	37+	37-	36-	44-	34-	55+	39-	-	484-	523-
TOTAL ARRESTS PER TROOPER	117	114	124	96	106	145	111	101	106	97	116	156	-	117	121
HAZARDOUS ARR PER TROOPER	76	86	83	64	71	95	84	71	78	71	85	106	-	81	87
% HAZARDOUS OF TOTAL	.65	.76	.67	.67	.66	.66	.76	.70	.73	.73	.73	.68	-	.70	.72
DWI ARRESTS PER TROOPER	2.4	2.3	3.0	4.5	4.2	3.5	2.0	2.7	3.6	1.5	3.0	3.7	-	3.1	5.4
EQUIPMENT ARR. PER TROOPER	8.1	3.6	6.6	5.4	6.1	7.5	5.4	3.5	8.0	6.0	5.5	9.7	-	6.3	6.6
ACC. INV. PER TROOPER	4.1	4.4	3.9	4.7	4.0	2.5	4.2	3.1	3.0	2.1	3.7	7.1	-	3.9	4.1
TRAFFIC CONTACTS PER TROOPER	88	94	94	75	81	105	94	77	89	79	94	123	-	92	98
HAZARDOUS WAR. PER TROOPER	31	35	27	38	33	39	58	35	47	58	30	22	-	36	42
ARRESTS PER ROUTINE UNIT MO	315.2	277.0	344.7	287.6	249.8	346.4	244.7	228.0	255.5	240.7	276.9	385.1	-	289.6	280.2
CONVICTION RATE															
% HOURS ON ROUTINE PATROL	64	60	57	59	57	62	58	59	64	62	69	60	-	61	68
MILES PER TRAFFIC CONTACT	27	25	22	30	25	20	24	28	25	24	24	19	-	24	24

**TEXAS DEPARTMENT OF PUBLIC SAFETY
HIGHWAY PATROL PERFORMANCE DATA**

Month of AUGUST 19 84

	REGION 1		REGION 2		REGION 3		REGION 4		REGION 5		REGION 6		TURN PIKE	MONTH TOTAL	
	DIST A	DIST B		THIS YEAR	LAST YEAR										
NUMBER OF TROOPERS	77	103	163	91	94	90	83	80	105	83	129	95	-	1193	1242
AV. ROUTINE UNITS PER DAY	31-	47-	62+	31+	37+	38-	36+	35+	43-	33-	57+	41+	-	491	473
TOTAL ARRESTS PER TROOPER	115	108	115	86	95	133	99	93	100	94	108	143	-	108	97
HAZARDOUS ARR. PER TROOPER	74	80	75	58	63	89	74	68	74	66	76	98	-	75	71
% HAZARDOUS OF TOTAL	64	74	65	68	66	66	75	72	74	71	70	69	-	69	73
DWI ARRESTS PER TROOPER	2.3	1.7	3.5	4.0	3.5	2.6	2.0	2.0	3.0	1.8	3.4	3.5	-	2.9	3.9
EQUIPMENT ARR. PER TROOPER	6.8	4.2	6.5	5.6	5.0	7.1	5.4	3.8	8.0	6.6	5.9	10.1	-	6.3	6.2
ACC. INV. PER TROOPER	4.8	4.7	4.7	5.5	4.1	2.6	3.9	2.6	3.6	2.7	4.5	7.7	-	4.3	3.9
TRAFFIC CONTACTS PER TROOPER	86	88	86	69	72	98	83	74	85	75	87	116	-	85	81
HAZARDOUS WAR. PER TROOPER	25	35	26	38	30	39	53	34	44	55	29	20	-	35	37
ARRESTS PER ROUTINE UNIT MO.	289.6	237.1	302.4	252.1	240.5	319.7	225.0	212.6	246.2	237.7	244.1	327.9	-	262.8	255.3
CONVICTION RATE															
% HOURS ON ROUTINE PATROL	59	62	58	58	53	59	55	59	62	56	64	58	-	59	60
MILES PER TRAFFIC CONTACT	45	25	23	30	28	22	28	28	25	27	27	20	-	26	28