

**HOUSTON MOTORIST ASSISTANCE PROGRAM
ANNUAL REPORT
August 1990 - July 1991**

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Sponsored By

Texas Department of Transportation
and
Metropolitan Transit Authority of Harris County

In Cooperation With

Houston Automobile Dealers Association
Harris County Sheriff's Department
and
Houston Cellular Telephone Company

Texas Transportation Institute
The Texas A&M University System
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EXECUTIVE SUMMARY

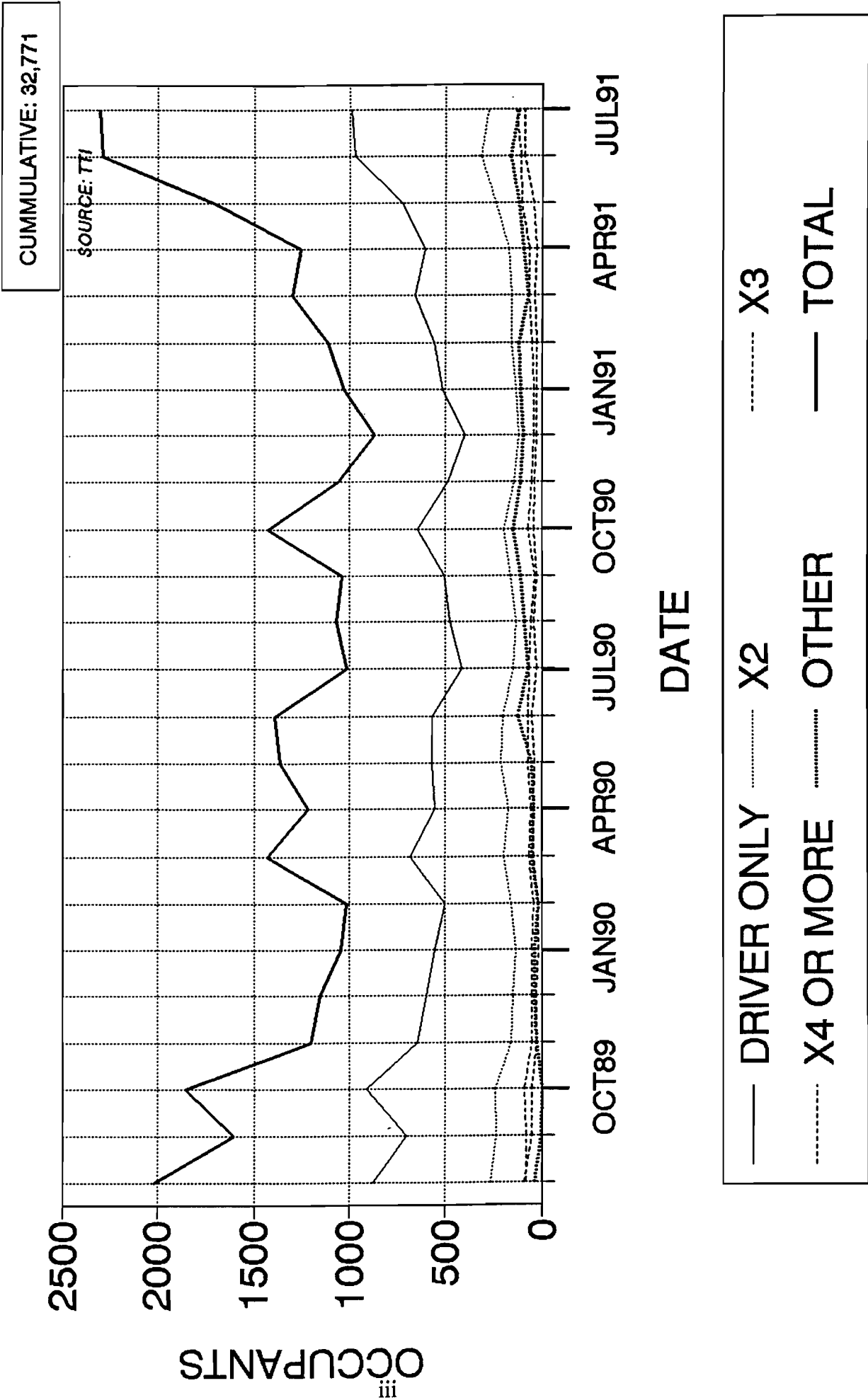
From August 1, 1989 to July 31, 1991, the Houston Motorist Assistance Program (MAP) has responded to more than 24,000 incidents and assisted more than 32,770 persons (Graph 1). Updated benefit-cost ratios were computed with MAP versus not having MAP. The benefit-cost ratios range from 7 to 36. This range was based on an additional 5, 10, 15, and 20 minutes to clear the one incident without having MAP present. These benefit-cost ratios were recalculated for the program using adjusted flow rates per lane. The value of time was also adjusted to current consumer price index values. An incident impact study is being performed by Texas Transportation Institute on selected corridors to update assumptions used in calculating benefit-cost ratios.

From the incident record forms prepared by the MAP vehicle operators, the average detection, response, and clearance times from August 1990 to July 1991 (Table 1) were calculated to be 13.90 minutes, 1.02 minutes, and 16.39 minutes for a total incident duration of 31.31 minutes. A study done by Texas Transportation Institute in September 1988 (1) estimated the average incident duration without a MAP type operation to be 49 minutes. If that estimate of incident duration is appropriate for the conditions in 1990, a reduction in delay of 17.69 minutes/incident can be attributed to MAP services, which results in a savings of 2.6 million vehicle-hours for the twelve months of operations.

The existing strategies and operations of MAP have been very successful during peak periods. Sixty-one (61) percent of all incidents are served during the peak periods, which amounts to 44 percent of the patrol time. The AM peak period from 0600 to 0930 hours has 23 percent of all incidents, while the PM peak period from 1530 to 1900 hours has 38 percent of all incidents. The remainder of incidents which occur in the OFF peak period accounts for 39 percent of all incidents. An incident in AM and PM peak periods creates larger delays because of high traffic demands and capacity reductions caused by an incident. Responses to OFF peak incidents have increased by 6 percent due to adjustments in patrol shifts and lunch breaks.

OCCUPANCY OF ASSISTED VEHICLES

AUGUST 1989 - JULY 1991



GRAPH 1

The detection and reporting of incidents to the MAP by persons other than the MAP operators increased to 14 percent during the last months of operation because of increased media and public exposure and the increased use of public sector agencies, traffic advisory services, and "CALL-MAP" hot line. The improvement in reporting incidents resulted in a greater number of responses to incidents by MAP.

TABLE 1. MOTORIST ASSISTANCE PROGRAM AVERAGE CLEARANCE TIMES (MINUTES)
Twelve Months - August 1990 through July 1991

Month	Detection/ Incident	Response/ Incident	Clearance/ Incident	Total/ Incident	Incidents
Aug 1990	11.14	1.21	16.88	29.23	787
Sep 1990	14.31	1.04	17.52	32.87	843
Oct 1990	16.38	1.41	16.36	34.15	1,099
Nov 1990	13.66	1.25	17.20	32.11	819
Dec 1990	13.66	1.48	15.04	30.18	684
Jan 1991	13.19	1.07	16.46	30.72	826
Feb 1991	13.48	1.16	16.69	31.33	906
Mar 1991	15.73	0.66	16.17	32.56	984
Apr 1991	14.00	1.20	15.80	31.00	972
May 1991	13.25	0.53	16.37	30.15	1,235
Jun 1991	14.40	0.58	16.55	31.53	1,655
Jul 1991	13.61	0.69	15.62	29.92	1,618
12-Month Avg	13.90	1.02	16.39	31.31	1,036

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I. INTRODUCTION

The Metropolitan Transit Authority of Harris County (METRO) and the Texas Department of Transportation (TxDOT) are the primary participants in the formation and funding of a Freeway Incident Management Program (FIMP). Others involved in the FIMP include the Harris County Sheriff's Department (HCSD), Houston Automobile Dealers Association (HADA), and for evaluation and developmental purposes, the Texas Transportation Institute (TTI).

The goals of FIMP are to reduce delay and increase safety for the Houston motorist. These goals have been accomplished by implementing: 1) Motorist Assistance Program (MAP); 2) TxDOT Interim Communications Center (ICC); 3) TxDOT Incident Removal Policy; and 4) FIMP Multi-Governmental Legal Agreement.

Representatives of TxDOT/METRO/TTI initiated the formation of the FIMP to address the major problem of traffic congestion by freeway incidents. In a TTI study entitled, "Urban Freeway Incidents in Houston" (1), the data showed that in Houston: 1) the frequency of disabled vehicles was 17 times that of reported accidents and 1,400 times the frequency of major incidents; 2) previous cost effectiveness studies conducted by TTI for TxDOT documented high benefit-cost ratios for the HCSD-HADA MAP operation (2, 3, 4); and 3) there existed a need to develop short-term strategies for reducing non-recurrent congestion prior to implementation of the TxDOT 10-year Computerized Transportation Management System.

As part of the TxDOT-TTI interagency contract and METRO contract (E90275C), TTI is responsible for evaluating one facet of the FIMP: the Motorist Assistance Program. TTI has submitted to METRO, TxDOT, HCSD and others, Monthly Activity Reports (6), Quarterly Reports (7, 12, 13, 15), and an Annual Report (16), which document the MAP activities from July 17, 1989 through July 31, 1991. This Annual Report evaluates the MAP

operations through July 31, 1991 and summarizes the data for twelve months. The data was collected by HCSD deputies while patrolling Houston freeways with six vans, 16 hours a day during weekdays from 0600 hours to 2200 hours. The program increased by 50 percent in June 1991 to provide for a nine van patrol.

II. MAP OPERATIONS

Incidents

From August 1, 1989 through July 31, 1991, the Motorist Assistance Program has responded to more than 24,000 incidents (Table 2) and assisted more than 32,770 persons (Graph 1). For the last twelve months of operations an average of 3.65 incidents were serviced each hour the fleet was in operation. Another way to express this service is: an average of 2.95 incidents were serviced for every 100 vehicle miles patrolled (Table 2). The primary duty of the MAP deputies is to provide motorists with the means of getting their vehicles operable with safety. The major types of assistance rendered to motorists involved in incidents are traffic control, communications (telephone), tire repair, and fuel (gas). Responses to major and minor accidents account for 9 percent of all incidents (Graphs 2 through 6 and Table 3). Other responses such as checking abandon vehicles and persons who have voluntarily stopped on the shoulder (welfare checks) were not considered incidents due to minimum traffic flow disturbances, but these activities are recorded and recognized as contributions to the safety and welfare of the motoring public.

Time of Day

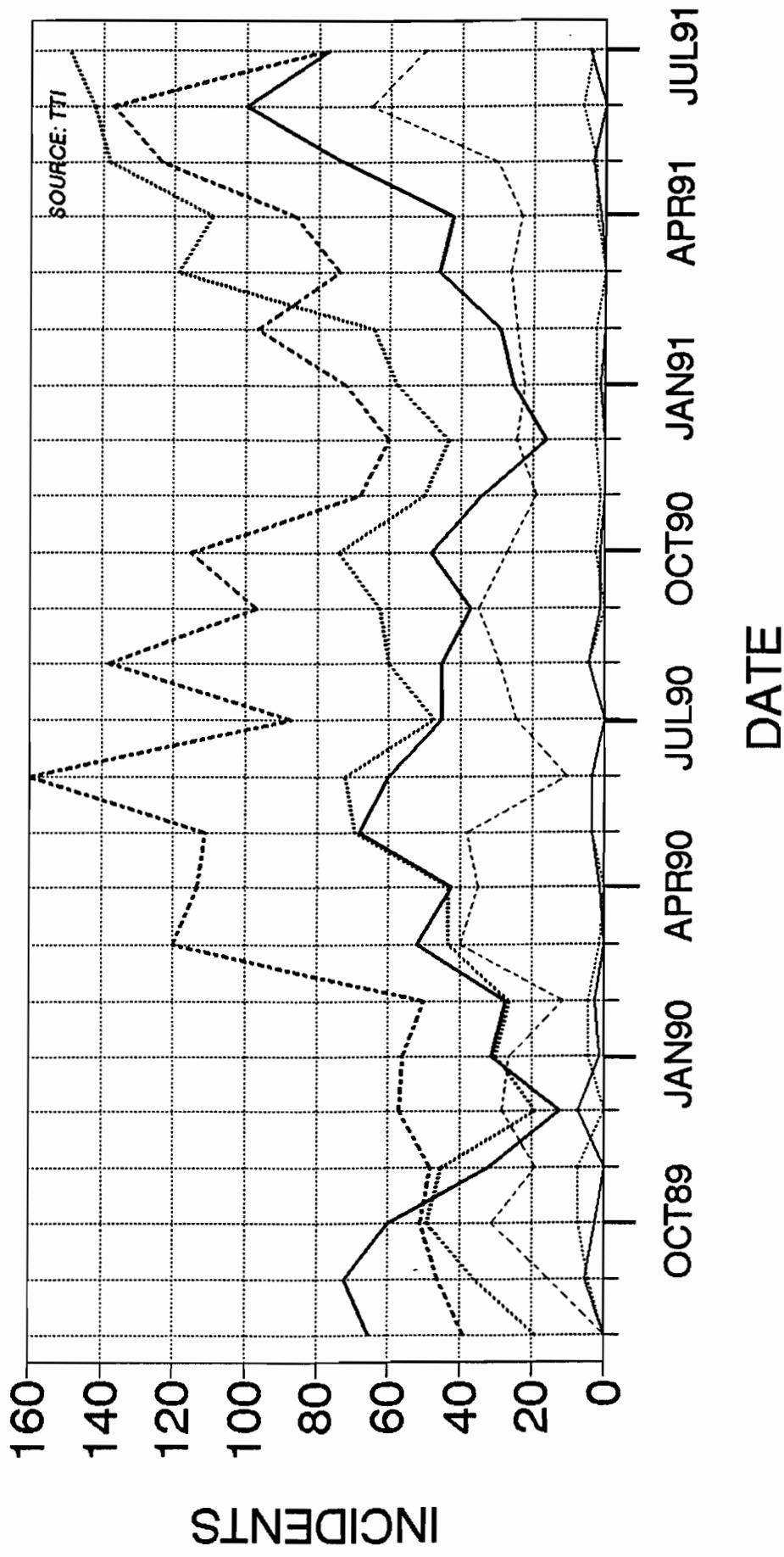
Graphs 7 and 8 graphically show incidents responded to by MAP by time of day and by patrol shift. These graphical representation demonstrate that the existing patrol strategies are detecting peak period incidents and responding to more incidents in the PM period. The peak period responses for the last twelve months of operations show 61 percent of all incident being responded to during peak periods. The AM peak period from 0600 to 0930 hours has 23 percent of all incidents, while the PM peak period from 1530 to 1900 hours has 38 percent of all incidents. The number of responses to OFF peak incidents from 0930 to 1530 hours has increased by six percent, due to lunch and shift break adjustments recommended by TTI to provide vehicles on patrol during this period.

**TABLE 2. AVERAGE INCIDENTS SERVICED/Patrolled Hour
AVERAGE INCIDENTS SERVICED/100 Vehicle Miles Patrolled**

Patrol Effects	Aug 90	Sep 90	Oct 90	Nov 90	Dec 90	Jan 91	Feb 91	Mar 91	Apr 91	May 91	Jun 91	Jul 91	12-Month Average
Fleet													
Fleet Incidents/Month	6	6	6	6	6	6	6	6	6	7	9	9	7
Avg. Fleet Incidents/Day	787	843	1,099	819	684	826	906	984	972	1,235	1,655	1,618	1,036
Avg. Van Incidents/Day	34	47	48	41	36	39	45	49	46	56	83	74	50
	6	8	8	7	6	7	8	8	8	8	9	8	8
Fleet Vehicle Miles Patrolled/Month													
Fleet Vehicle Miles Patrolled/Month	27,837	30,202	32,481	30,557	32,895	30,895	29,647	35,304	29,799	41,499	46,189	50,436	34,769
Avg. Fleet Vehicle Miles Patrolled/Day	1,210	1,678	1,412	1,528	1,704	1,471	1,482	1,765	1,419	1,886	2,309	2,293	1,680
Avg. Van Vehicle Miles Patrolled/Day	202	280	235	255	284	245	247	294	237	269	257	255	255
Patrolled Days													
Patrolled Days	23	18	23	20	19	21	20	20	21	22	20	22	21
Avg. Fleet Patrolled Hours/Month	1,664	1,400	1,808	1,616	1,384	1,776	1,712	1,717	1,844	2,320	2,540	2,650	1,869
Avg. Fleet Patrolled Hours/Day	72	78	79	81	73	85	86	86	88	105	127	120	90
Avg. Van Patrolled Hours/Day	12.06	12.96	13.10	13.47	12.14	14.10	14.27	14.30	14.63	15.06	14.11	13.38	13.63
Avg. Van Patrolled Hours/ Incident Serviced (min)	127	100	99	118	121	129	113	105	114	113	92	98	111
Avg. Incidents Serviced/ Patrolled Hour	0.47	0.60	0.61	0.51	0.49	0.47	0.53	0.57	0.53	0.53	0.65	0.61	0.55
Avg. Fleet Incidents Serviced/ Patrolled Hour	2.84	3.61	3.65	3.04	2.97	2.79	3.18	3.44	3.16	3.73	5.86	5.50	3.65
Avg. Incidents Serviced/ 100 Miles Patrolled	2.83	2.79	3.38	2.68	2.11	2.67	3.06	2.79	3.26	2.98	3.58	3.21	2.95
Avg. Productivity Ratio (mi/hr)	17	22	18	19	23	17	17	21	16	18	18	19	19

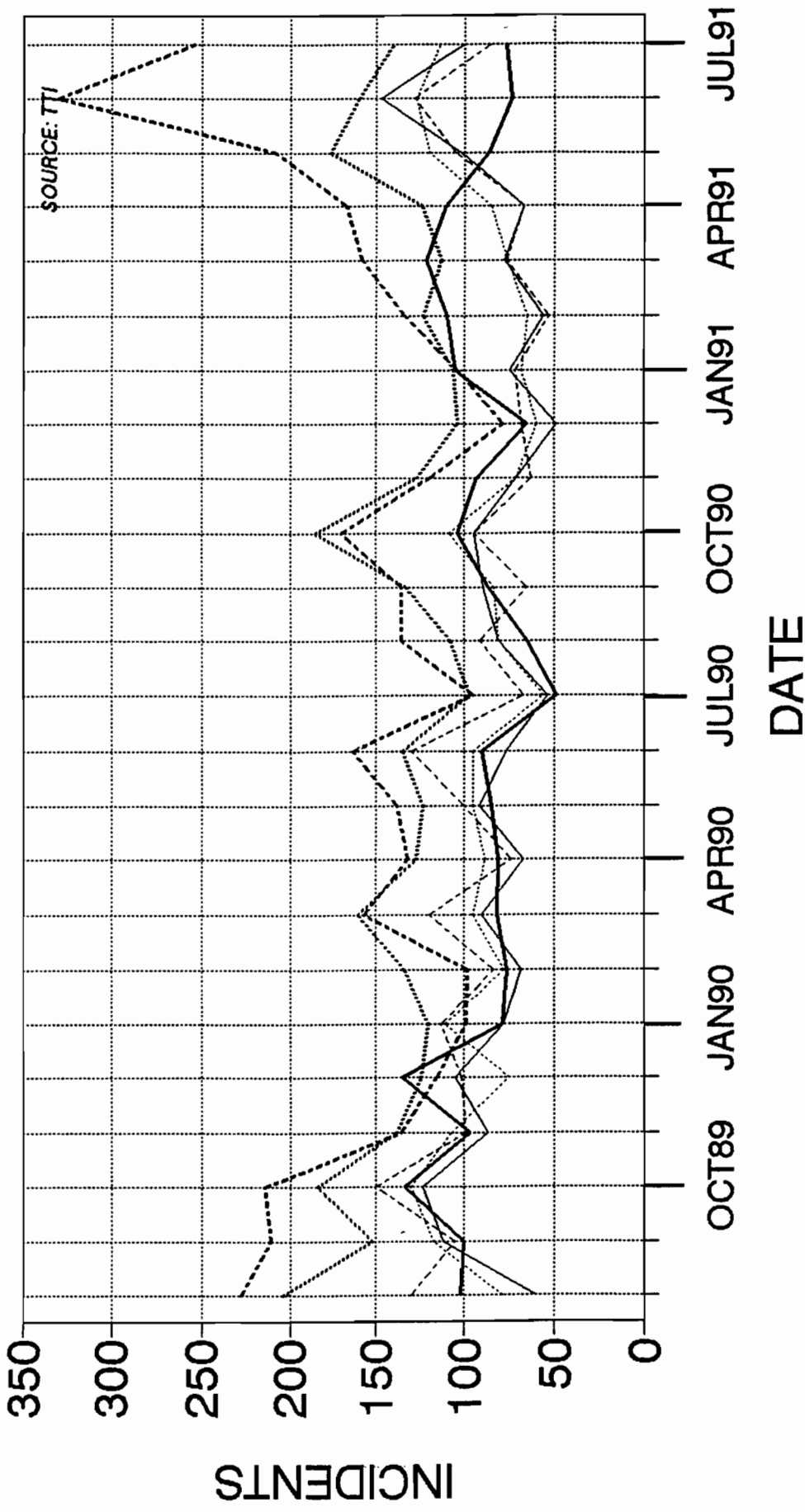
TYPES OF ASSISTANCE

AUGUST 1989 - JULY 1991



TYPES OF ASSISTANCE

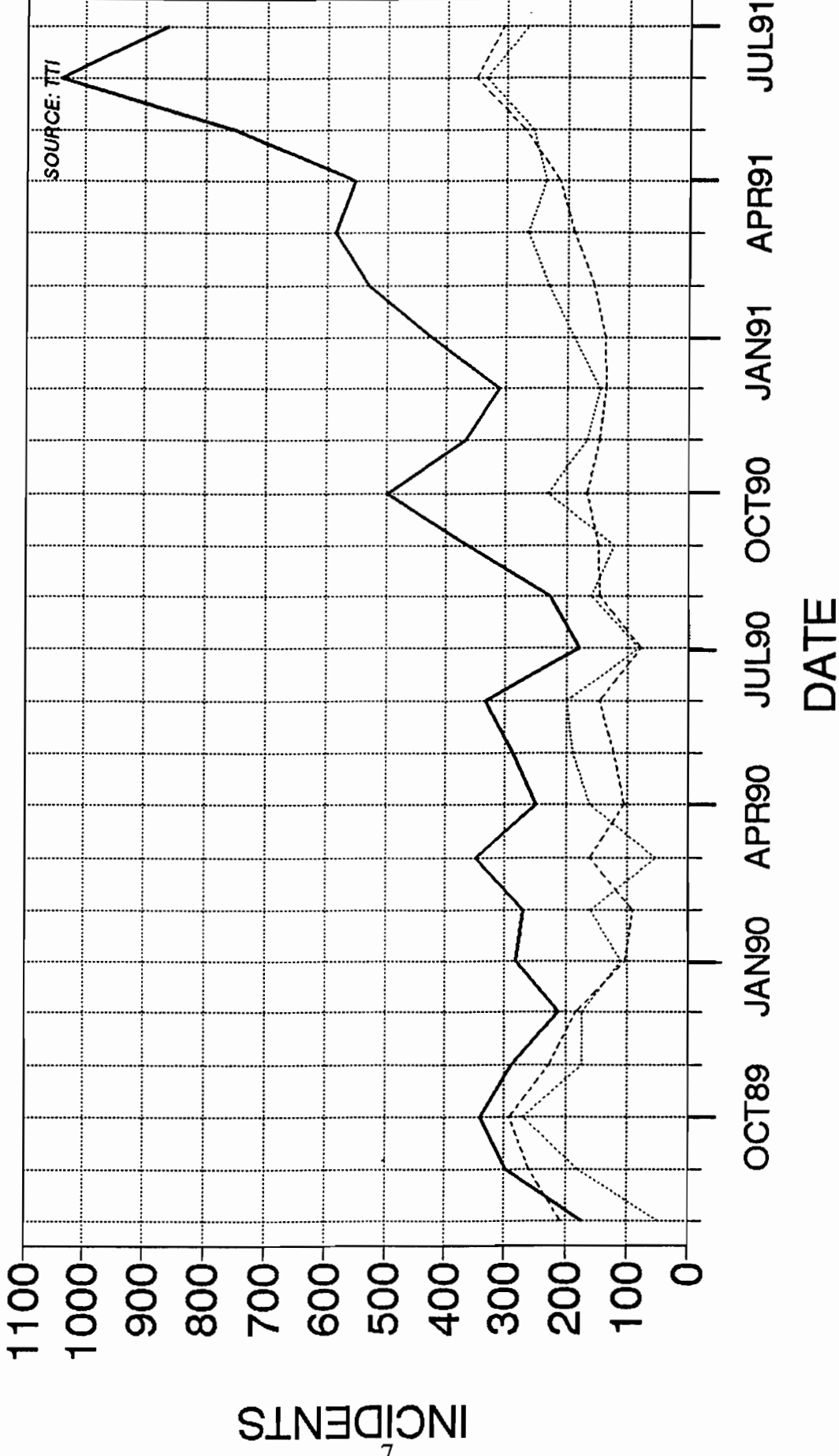
AUGUST 1989 - JULY 1991



— TRANSPORT — JUMP BATTERY — PUSH OFF ROAD
 — CALL WRECKER — FUEL — FLAT

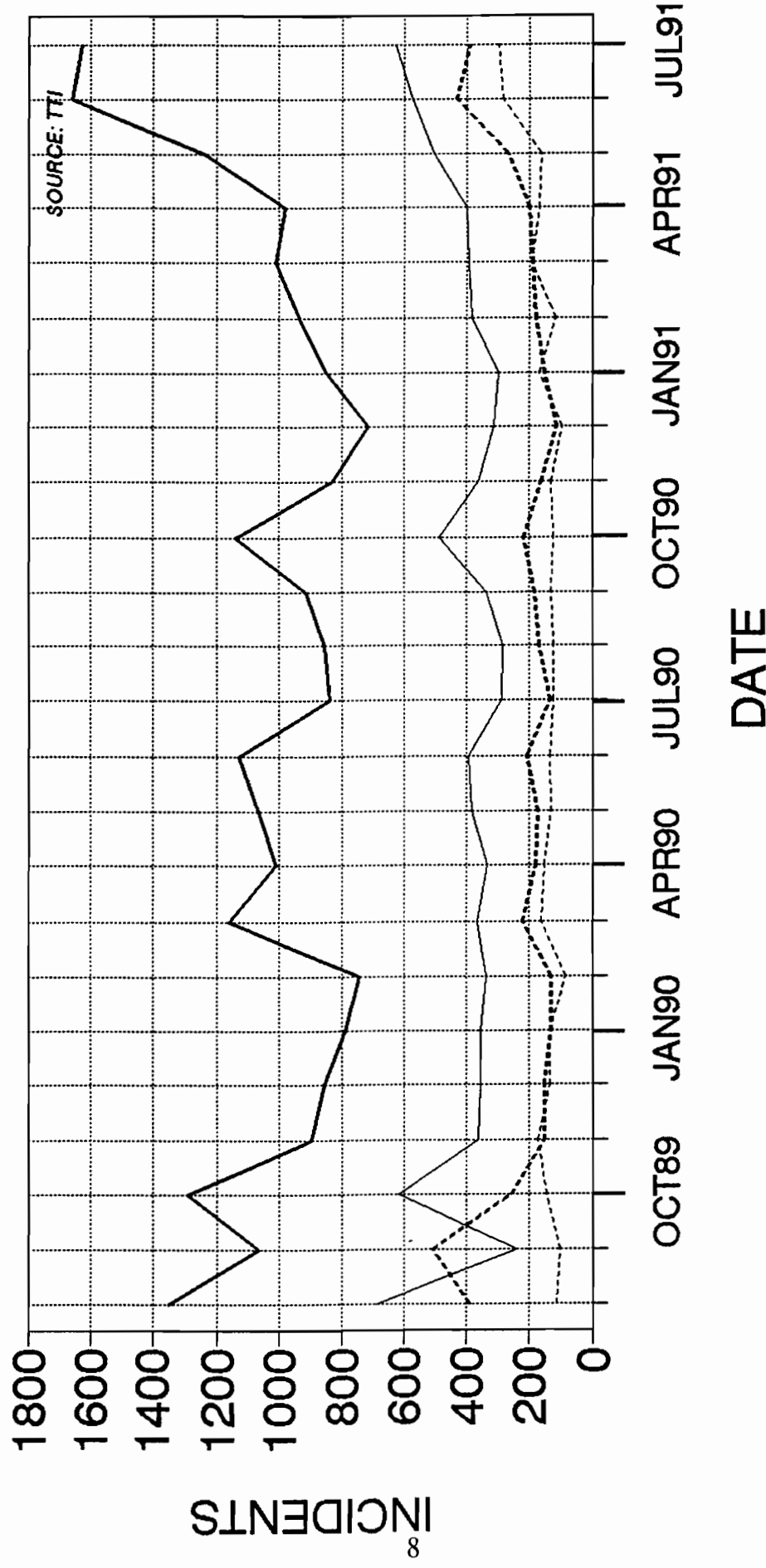
TYPES OF ASSISTANCE

AUGUST 1989 - JULY 1991



TYPES OF INCIDENTS

AUGUST 1989 - JULY 1991



TYPES OF INCIDENTS

AUGUST 1989 - JULY 1991

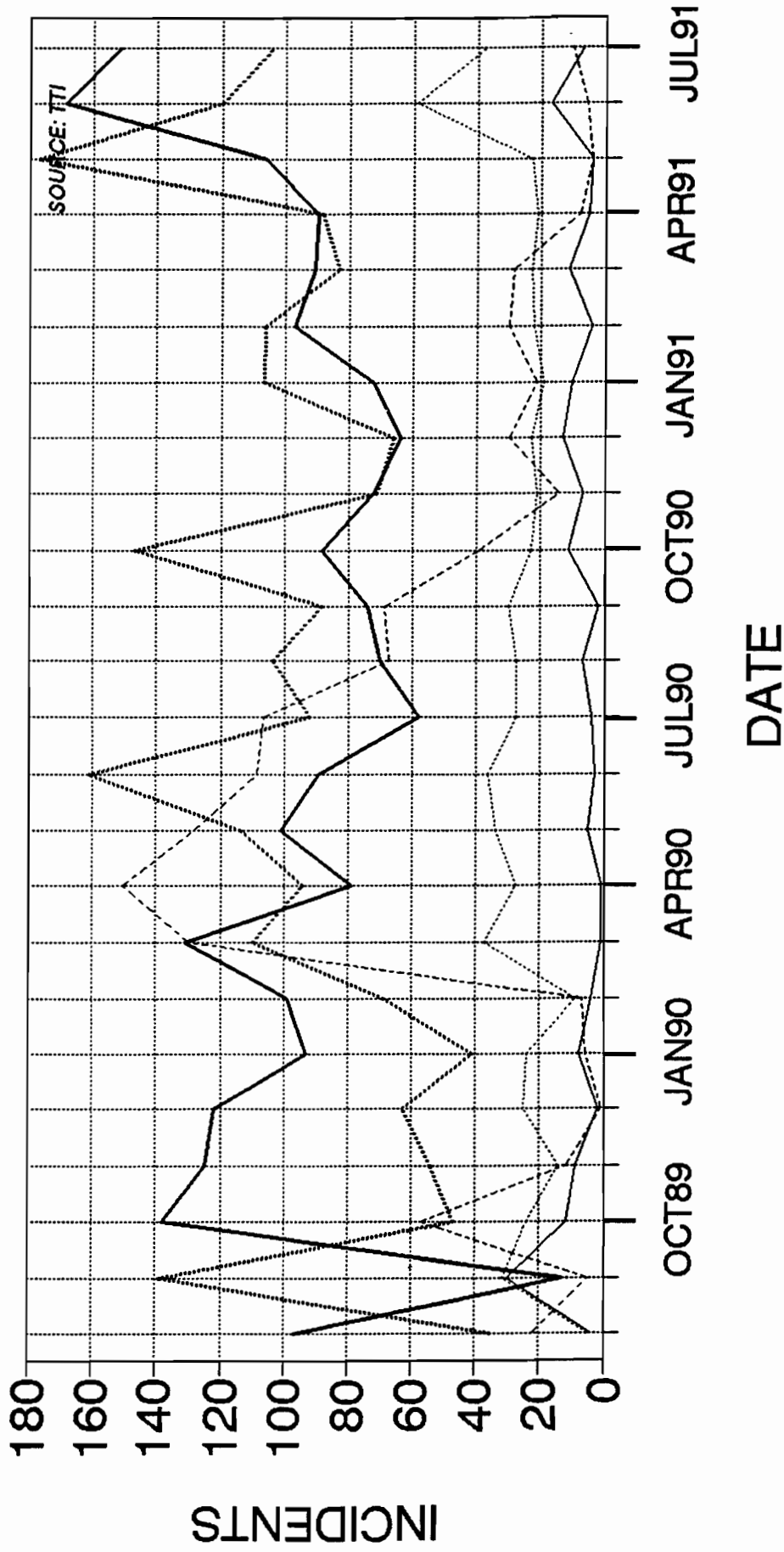
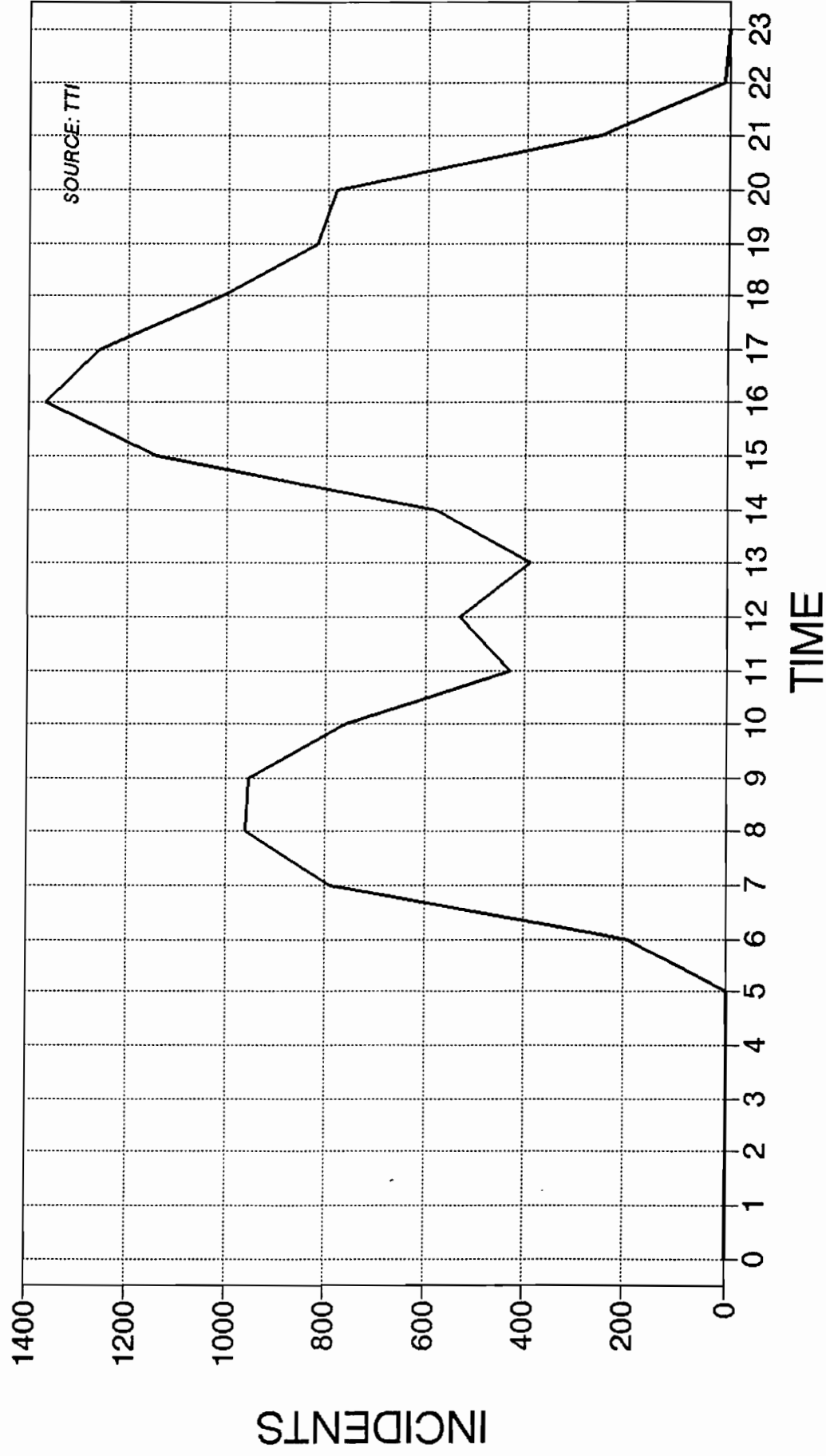


TABLE 3. SUMMARY OF TYPES OF ASSISTANCE AND TYPES OF INCIDENTS 1990-1991

Summary of	Aug 90	Sep 90	Oct 90	Nov 90	Dec 90	Jan 91	Feb 91	Mar 91	Apr 91	May 91	Jun 91	Jul 91	Total	Avg	%
Types of Assistance:															
First Aid	4	1	1	0	0	1	0	0	1	3	0	4	15	1	0
Extinguish Fire	4	0	2	1	2	2	2	0	2	2	6	3	26	2	0
Debris	29	35	27	19	24	22	24	26	23	30	65	50	374	31	-2
Water	45	37	48	34	16	25	29	46	42	73	100	77	572	48	3
Minor Engine Repair	60	62	74	50	43	58	64	119	109	138	142	149	1,068	89	5
Directions	138	97	115	68	60	72	97	74	86	123	137	78	1,145	95	5
Transport Motorist	81	89	94	71	49	75	56	78	67	102	147	100	1,009	84	5
Jump Start	81	84	109	71	59	68	65	76	86	119	127	114	1,059	88	5
Push	91	65	94	62	68	72	53	77	67	105	128	86	968	81	4
Wrecker Called	65	87	104	93	65	105	110	121	111	87	74	77	1,099	92	5
Fuel	108	133	185	127	104	106	123	113	124	176	160	140	1,599	133	7
Flat	136	136	171	119	79	104	134	158	168	207	330	254	1,996	166	9
Other	159	120	29	166	145	189	230	263	234	256	334	265	2,590	216	12
Phone	145	148	166	144	133	137	155	187	214	270	350	306	2,355	196	11
Traffic Control	227	363	497	366	309	423	530	587	553	752	1,043	864	6,514	543	29
Total	1,373	1,457	1,916	1,391	1,156	1,459	1,672	1,925	1,887	2,443	3,143	2,567	22,389	1,866	100
Types of Incidents:															
Car Fire	7	2	11	7	13	10	4	11	5	4	17	7	98	8	1
Debris	27	30	23	21	23	19	22	23	21	23	59	37	328	27	3
Abandon	67	69	39	14	30	21	30	28	8	4	6	10	326	27	3
Accident Assistance	70	74	88	72	64	72	97	91	90	106	169	151	1,144	95	9
Other	104	88	147	71	66	107	106	83	88	177	120	104	1,261	105	10
Mechanical	126	128	126	128	98	165	116	194	170	161	282	299	1,993	166	16
Tire	170	182	219	162	111	153	181	191	201	264	433	389	2,656	221	21
Stall	283	339	485	358	309	300	380	391	397	500	575	631	4,948	412	39
Total	854	912	1,138	833	714	847	936	1,012	980	1,239	1,661	1,628	12,754	1,063	100

INCIDENTS BY TIME OF DAY

AUGUST 1989 - JULY 1991

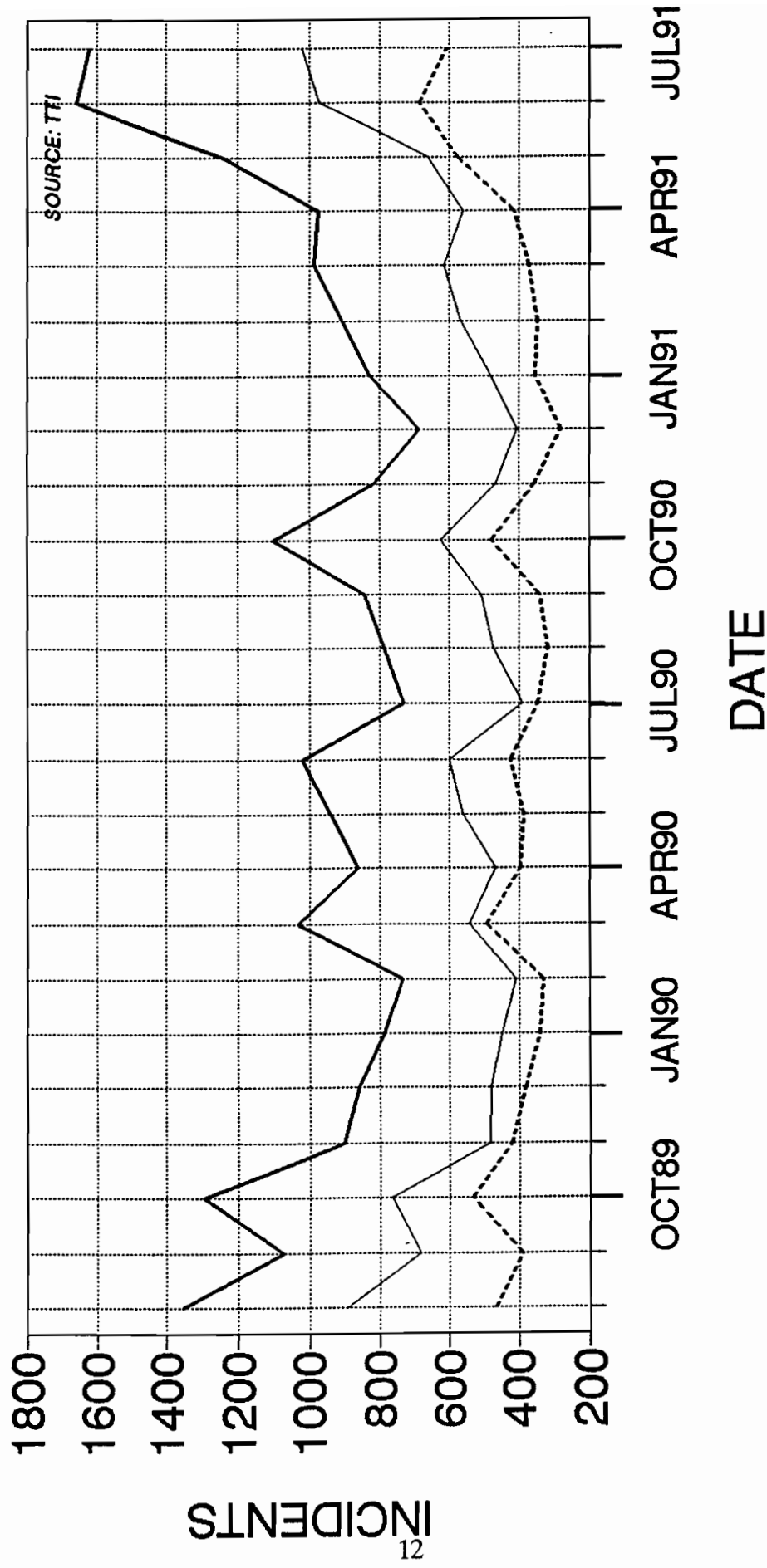


— TOTAL

GRAPH 7

TOTAL INCIDENTS BY SHIFT

AUGUST 1989 - JULY 1991



Location

For US-290, I-45 North, and US-59 North routes, the majority of the incidents responded to by MAP occurred outside the I-610 Loop Freeway, while I-45 South, US-59 South, and I-10 West routes had a majority of incidents occur inside the I-610 Loop (Table 4 and Graph 9). For June and July of 1991, the number of incidents responded to by MAP on I-610 Loop and US-59 South has increased by four times and three times respectively due to increased patrol units on these routes (Graph 10). An analysis of incident vehicle location shows a distribution of 75 percent and 19 percent occurring on shoulders and mainlanes respectively (Table 5). This information will be used in route adjustments to improve the efficiency of existing operations and the placement of additional patrolling vehicles.

Incident Surveillance

There were approximately 1,036 incidents per month detected, responded to and cleared by MAP deputies in the last twelve months of operations (Table 4). This average has increased by 71 (from 965 to 1,036) over the monthly average of the preceding twelve months (Graph 10). Eighty-six (86) percent of the incidents are detected by the MAP deputies while patrolling the freeways (Graph 11). This fact accounts for the short response time reported in Table 1, which documents average detection, response and clearance times of MAP incidents. The evaluation of MAP was hampered slightly by the lack of data, since only 60 percent of the forms contained all the information on the detection, response, and clearance times. The most common cause of incomplete data sets was the omission in the route logs of "Time of Incident Occurrence - Driver's Estimate." An effort to improve the reporting procedures has resulted in an increase of three percent in completed data sets. The reporting requirements should continue to be stressed by the MAP management.

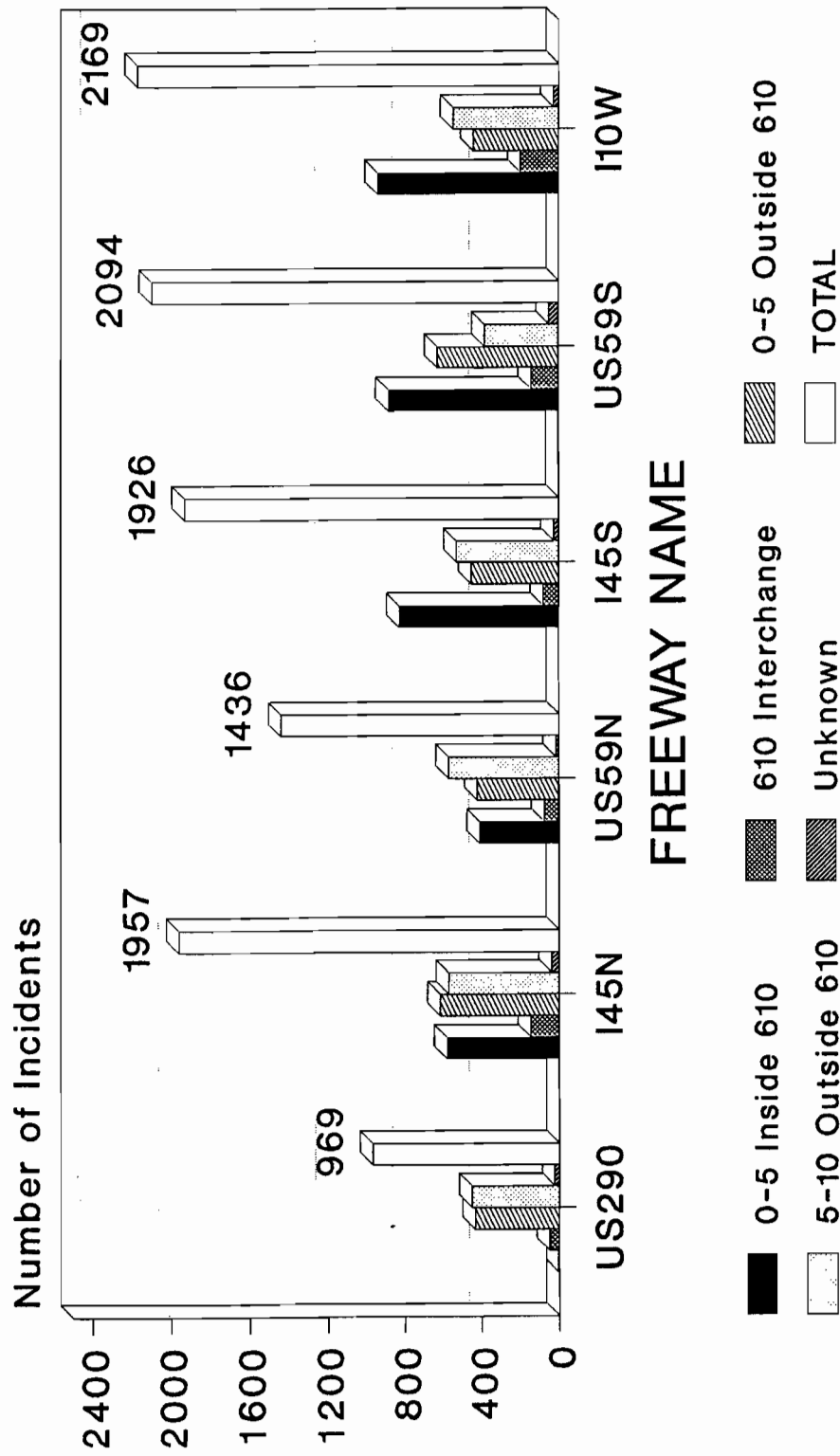
After reviewing the first year's operations, it became evident that an additional deputy was needed to replace the patrol time lost to deputy's vacation, sick leave, comp

TABLE 4. INCIDENTS BY SECTION PER MONTH

Incidents by Section	Aug 90	Sep 90	Oct 90	Nov 90	Dec 90	Jan 91	Feb 91	Mar 91	Apr 91	May 91	Jun 91	Jul 91	Total	12-Mth Average	%
US-290 Total															
0-51 Inside I-610	87	54	102	50	50	63	74	85	72	89	133	110	969	81	8
I-610 Interchange	0	0	0	0	0	0	2	2	0	1	1	0	6	1	0
0-5 Outside I-610	10	1	0	0	1	4	5	1	5	6	9	4	51	4	0
5-10 Outside I-610	44	20	51	31	20	25	35	38	30	44	51	47	436	36	4
Unknown	31	30	42	19	29	31	32	44	35	38	64	56	451	38	4
	2	3	4	0	0	3	0	0	2	0	8	3	25	2	0
I-45 North Total															
0-51 Inside I-610	127	136	196	165	134	120	132	190	191	230	186	150	1,957	163	16
I-610 Interchange	23	34	53	47	31	23	32	68	61	76	76	57	581	48	5
0-5 Outside I-610	6	13	23	11	8	5	10	14	14	23	8	13	148	12	1
5-10 Outside I-610	53	41	51	56	45	40	45	54	62	68	53	49	617	51	5
Unknown	40	37	58	50	48	52	44	54	49	61	49	31	573	48	5
	5	11	11	1	2	0	1	0	5	2	0	0	38	3	0
US-59 North Total															
0-51 Inside I-610	133	105	110	79	73	140	108	114	141	137	164	132	1,436	120	12
I-610 Interchange	38	28	28	28	22	44	40	33	37	33	35	43	409	34	3
0-5 Outside I-610	7	8	4	7	6	8	4	4	8	6	8	8	78	7	1
5-10 Outside I-610	38	32	29	22	21	46	34	26	45	42	55	32	422	35	3
Unknown	49	35	45	22	24	41	30	51	47	56	62	49	511	43	4
	1	2	4	0	0	1	0	0	4	0	4	0	16	1	0
I-45 South Total															
0-51 Inside I-610	114	183	207	157	157	110	150	146	151	152	180	219	1,926	161	15
I-610 Interchange	48	93	96	79	53	45	65	59	66	51	66	108	829	69	7
0-5 Outside I-610	5	10	7	5	6	4	3	11	11	6	7	9	84	7	1
5-10 Outside I-610	30	27	47	39	29	30	40	27	39	49	51	47	455	38	4
Unknown	29	42	52	34	69	31	42	49	34	46	51	52	531	44	4
	2	11	5	0	0	0	0	0	1	0	5	3	27	2	0
US-59 South Total															
0-51 Inside I-610	111	156	210	123	80	124	136	181	146	203	306	318	2,094	174	17
I-610 Interchange	51	65	107	61	36	68	67	91	64	75	85	113	883	74	7
0-5 Outside I-610	2	12	11	15	9	7	5	12	10	13	24	24	144	12	1
5-10 Outside I-610	24	44	53	36	27	28	45	51	40	62	121	99	630	53	5
Unknown	29	19	31	11	8	21	19	26	25	51	66	80	386	32	3
	5	16	8	0	0	0	0	1	7	2	10	2	51	4	0
I-10 West Total															
0-51 Inside I-610	121	132	184	130	111	177	202	181	217	283	221	210	2,169	181	17
I-610 Interchange	47	53	80	56	53	72	103	78	95	119	93	90	939	78	8
0-5 Outside I-610	8	22	12	10	6	8	23	23	22	29	18	21	202	17	2
5-10 Outside I-610	30	23	39	28	32	42	23	29	41	60	49	50	446	37	4
Unknown	31	26	45	36	20	55	50	51	55	75	59	48	551	46	4
	5	8	4	0	0	0	3	0	4	0	2	1	31	3	0
I-610 Loop	94	77	84	74	60	64	73	60	51	120	451	459	1,667	139	13
Other	0	0	6	41	19	28	31	27	3	21	14	20	210	18	2
Total	787	843	1,099	819	684	826	906	984	972	1,235	1,655	1,618	12,428	1,036	100

TOTAL INCIDENTS BY SECTIONS

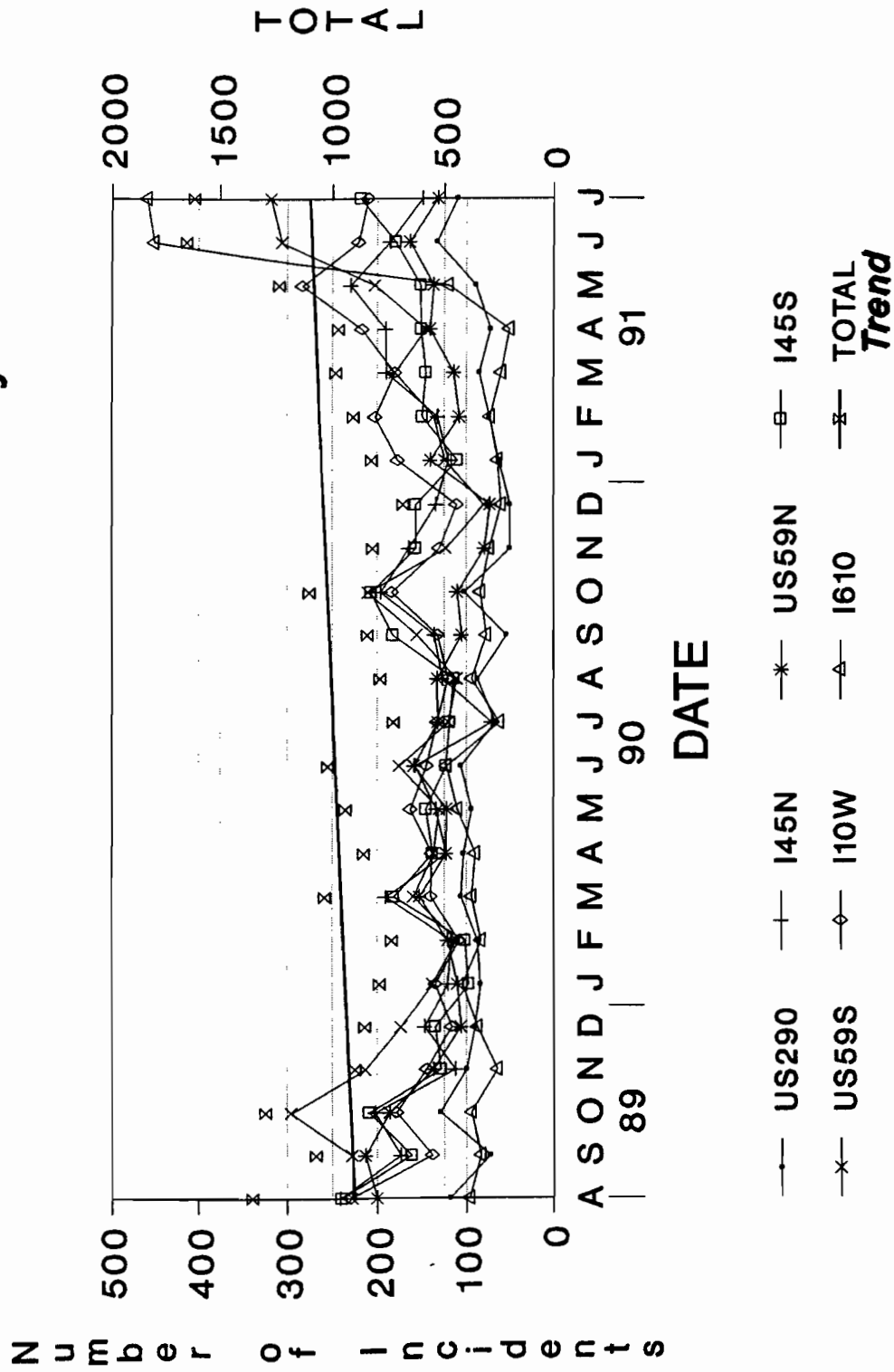
M.A.P. Patrolled Freeways



Note: Based upon 8/1/90-7/31/91 data

TOTAL INCIDENTS BY FREEWAY

M.A.P. Patrolled Freeways



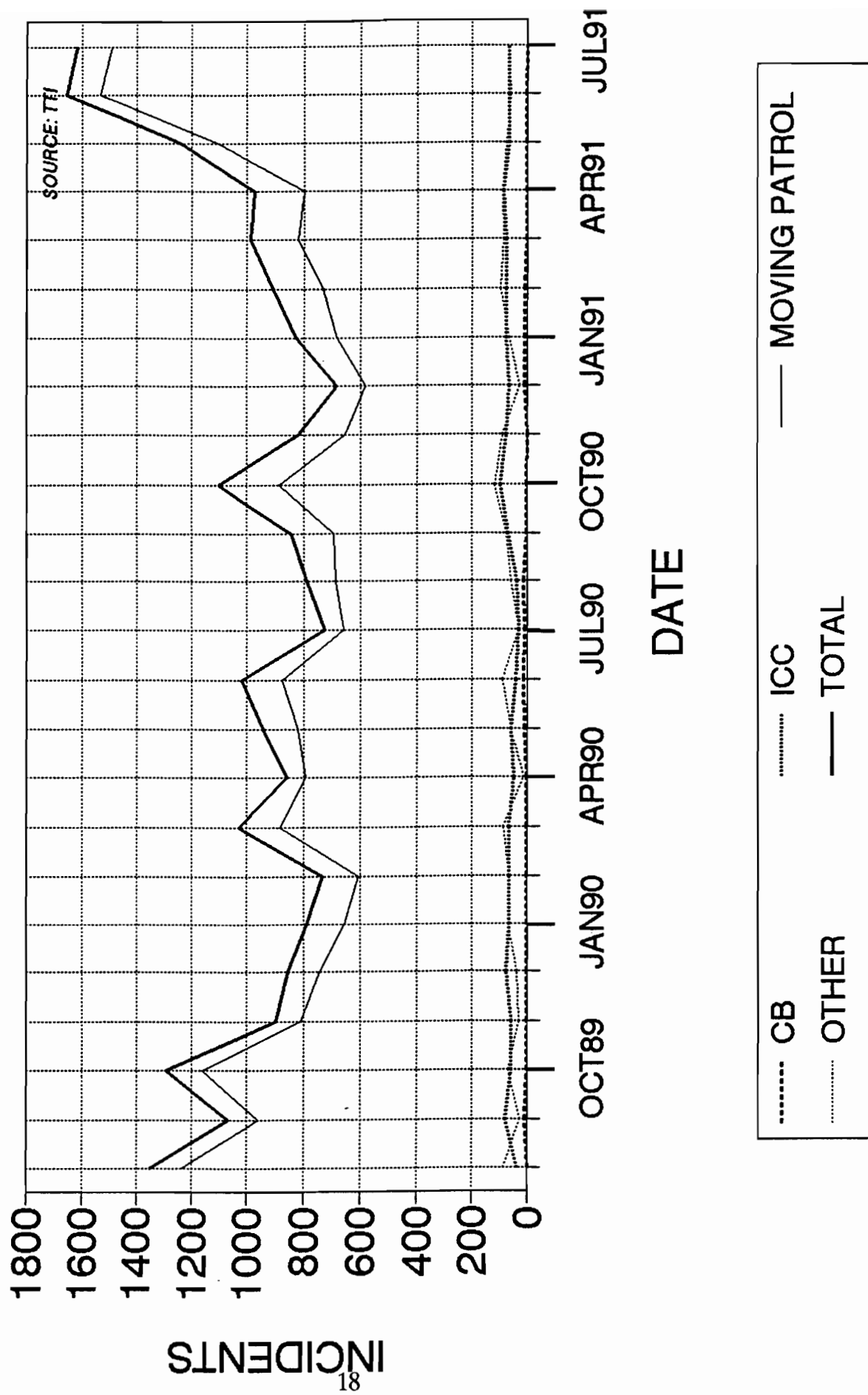
NOTE: Based upon 8/89 thru 7/91 data

TABLE 5. MAP - VEHICLE LOCATION

Month	Left Shoulder	Right Shoulder	Total Shoulder	Main Lane	Other	Total
Aug 1990	65	489	554	173	60	787
Sep 1990	80	540	620	170	53	843
Oct 1990	61	740	801	202	96	1,099
Nov 1990	52	543	595	180	44	819
Dec 1990	50	464	514	137	33	684
Jan 1991	37	583	620	154	52	826
Feb 1991	48	623	671	167	68	906
Mar 1991	45	687	732	181	71	984
Apr 1991	38	696	734	165	73	972
May 1991	72	892	964	221	50	1,235
Jun 1991	93	1,133	1,226	294	135	1,655
Jul 1991	95	1,177	1,272	273	73	1,618
Total 90-91	736	8,567	9,303 (75%)	2,317 (20%)	808 (5%)	12,428 (100%)

MANNER INCIDENT DETECTED

AUGUST 1989 - JULY 1991



time, court time, and other HCSD requirements. HCSD has provided the deputy and a HCSD corporal, assigned to help manage deputy assignments and requirements. These changes resulted in less man hours lost and more productive patrol operations overall (Table 2).

Public Appreciation

The goals of the FIMP are to reduce delay and increase the safety for the Houston motorists. TTI has calculated benefits for a net value of time savings to motorists based on this delay reduction. There are several other intangible benefits that are acknowledged through letters to MAP. In the Appendix are some letters from Houston motorists that testify to these invaluable benefits and demonstrate the public's appreciation of MAP.

III. COSTS AND BENEFITS

Based on the success of the operations in 1989 through 1990, the Houston Motorist Assistance Program was expanded by 50 percent. The expanded program provided 9 vans per fleet patrolling 16 hours per day and increased surveillance on US-59 South and I-610 Loop. MAP continues to be funded by four organizations (Table 6). METRO, which is the largest contributor, funds the salaries of MAP deputies and one clerk. Based on data supplied by HCSD, the average MAP bi-weekly salary is \$20,277. This salary was based on 12, 13, 17 and 19 deputies and one clerk recorded on respective months (Table 7). The maintenance costs, paid for by HCSD, totals \$69,127 for the last twelve months of operations (Table 8).

TABLE 6. MOTORIST ASSISTANCE PROGRAM FUNDING

Funding	METRO	TxDOT	HCSD	HADA	TOTAL
Salaries					
1989-1990	\$453,655 ¹	\$140,920	\$ 0	\$ 0	\$ 594,575
1990-1991	675,325	243,500	0	0	918,825
Equipment					
1989-1990	32,500	107,000	42,865 ²	110,000	292,365
1990-1991	60,000	204,130	123,640 ³	50,000	437,770
Evaluation					
1989-1990	100,000	100,000	0	0	200,000
1990-1991	50,000	148,000	0	0	198,000
Total					
1989-1990	\$586,155	\$347,920	\$ 42,865	\$110,000	\$1,086,940
1990-1991	785,325	595,630	123,640	50,000	1,554,595

¹ Includes 1989 supplemental funds (\$70,000).

² Includes parts supplied by General Motors (\$7,500).

³ Includes three vans donated by General Motors (\$60,000).

TABLE 7. TYPICAL MOTORIST ASSISTANCE STAFFING COSTS

Month	Gross Earnings ¹	Fringe Benefits ²	Total Earnings ³
Aug 1990 ⁵	\$ 40,187	\$ 9,577	\$ 49,764 ⁴
Sep 1990 ⁵	26,740	10,216	36,956
Oct 1990 ⁶	27,757	8,462	36,219
Nov 1990 ⁶	28,837	8,987	37,824
Dec 1990 ⁶	28,851	9,297	38,148
Jan 1991 ⁶	42,897	10,535	53,432
Feb 1991 ⁶	34,888	9,398	44,286
Mar 1991 ⁶	43,401	7,924	51,325 ⁴
Apr 1991 ⁶	10,715	8,849	19,564
May 1991 ⁷	29,229	7,896	37,125
Jun 1991 ⁸	39,610	8,576	48,186
Jul 1991 ⁸	63,069	11,305	74,374
Total 90-91	\$416,181 (79%)	\$111,022 (21%)	\$527,203 (100%)

¹ Includes base pay, longevity, incentive, and overtime.

² Includes FICA, retirement, insurance, workers compensation, unemployment, and supplemental death benefits.

³ Four weeks.

⁴ Six weeks (twice a year there will be three bi-weekly payments monthly).

⁵ Twelve deputies and one clerk.

⁶ Thirteen deputies and one clerk.

⁷ Seventeen deputies and one clerk.

⁸ Nineteen deputies and one clerk.

TABLE 8. MOTORIST ASSISTANCE PROGRAM VEHICLE MAINTENANCE COSTS
Total Unit Cost

Month	Gas	Parts	Labor	Oil	Total
Aug 1990	\$ 2,401	\$ 1,322	\$ 1,037	\$ 14	\$ 4,774
Sep 1990	2,363	1,757	1,309	14	5,443
Oct 1990	3,234	2,646	1,054	4	6,938
Nov 1990	2,353	1,047	648	11	4,059
Dec 1990	2,212	1,542	1,653	25	5,432
Jan 1991	2,144	583	581	14	3,322
Feb 1991	1,847	413	258	9	2,527
Mar 1991	3,088	1,647	1,213	32	5,980
Apr 1991	1,401	4,187	2,576	10	8,174
May 1991	2,577	844	883	25	4,329
Jun 1991	3,420	5,214	2,289	25	10,948
Jul 1991	4,167	1,620	1,373	43	7,203
Total 90-91	\$31,207 (45%)	\$22,822 (33%)	\$14,874 (22%)	\$226 (0%)	\$69,129 (100%)

Based on the Motorist Assistance Program Funding Table provided by METRO (Table 6), the cost to operate the expanded MAP program for 1990-1991 is \$1,064,748, using a three year average life expectancy on equipment. Hence, the cost to patrol one freeway for one month on a 16-hour patrol/day is \$12,676 (Table 9).

TABLE 9. MAP COST/FREEWAY/MONTH 1990-1991

MAP Funds 1990-1991	\$1,554,595
MAP Operating Cost 1990-1991 (3 years life on equipment)	\$1,064,748
MAP Cost/Freeway/Month 1990-1991	\$ 12,676

Houston MAP Benefit-Cost Analysis

Summary. The benefit-cost of MAP ranges between \$7 to \$36 in benefits for each \$1 invested. The total cost of the program for the second year of operation is estimated at \$1,064,748. Depending on the average amount of time saved that can be attributed to MAP, the program saves the Houston motorists between 0.6 to 3.1 million vehicle-hours of delay, valued between \$7 to \$38 million dollars per year. The following describes the methodology of the analysis.

Methodology. The incident delay impacts were calculated using routines and calculations developed by the Federal Highway Administration (8). The delay in vehicle-hours was calculated for two different incident cases: mainlane and shoulder incidents. These two cases have major differences in the effects on capacity and their corresponding conditions of delay as a result of the reduced flow rates (Table 10).

TABLE 10. TYPICAL FLOW RATES FOR DELAY ESTIMATION

Number of Lanes in Each Direction	Capacity Flow Rate = Get Away Flow Rate (vehicle/hr)	In-Lane Incidents One Lane Blocked (vehicle/hr)	Shoulder Incidents (vehicle/hr)
2	3,800	1,330	3,080
3	5,700	2,793	4,731
4	7,600	4,410	6,460
5	9,500	6,460	8,265

Delay will be accumulated whenever the reduced flow rate is lower than the demand flow rate. The greater the difference between these flow rates, indicating either more demand or a greater restriction in flow, the greater the total vehicle-hours of delay.

Total vehicle-hours of delay were computed for all seven routes, US-290, I-45N, US-59N, I-45S, US-59S, I-10W, and I-610: 1) for 0-5 miles inside I-610, I-610 Interchange, 0-5 miles outside I-610 and 6-10 miles outside I-610; 2) at peak and off-peak periods; and 3) for inbound and outbound traffic for a typical monthly operation.

To determine the benefits of MAP versus not having MAP (No MAP), delays for No MAP were computed on the assumption that incident times would be greater and therefore increase the respective times for mainlane and shoulder incidents (9). The question is how much greater is the average length of incidents without MAP. This study could not answer that question, but using the previous studies as a guide, an upper limit of 20 minutes was assumed.

The results from the MAP analysis with updated flow rates shows that 2.2 million vehicle-hours of accumulative delay occurred for the last twelve months of operations. The savings in delay to the motoring public is the difference in MAP and No MAP delays (Table 11). For each additional five minutes for No Map, the delay is increased exponentially from 607,397 million vehicle-hours. Therefore, if MAP reduces the incidents time by 15 minutes, for example, the savings are 2.2 million vehicle-hours per year. A more realistic value for an urban area such as Houston for savings in response times is between 5 and 10 minutes. The reasons for this conservative estimate are: a good private wrecker response, a good

incident detection program by private and public agencies, and growth of cellular telephone's in vehicles.

TABLE 11. DELAY FOR MAP AND NO MAP (vehicle-hours) 1990-1991

1990-1991	Delay	Net Value of Time Savings to Motorist
MAP	2,163,732	---
No MAP (5 minutes added)	2,771,124	607,392
No MAP (10 minutes added)	3,490,692	1,326,960
No MAP (15 minutes added)	4,322,412	2,158,680
No MAP (20 minutes added)	5,266,308	3,102,576

Benefits of MAP are defined as:

	Cost of Time Delay without MAP (No MAP) (veh-hr)	veh-hr
minus	<u>Cost of Time Delay with MAP (veh-hr)</u>	veh-hr
	Net Value of Time Savings to Motorists (veh-hr)	veh-hr

Costs of MAP are defined as:

	Labor (salaries and fringes)	\$ 918,825
plus	<u>Equipment (vehicles, 3 year life)</u>	<u>145,923</u>
	MAP Operations Costs 1990-1991	\$1,064,748

Calculations. The delay analysis calculated for a monthly operation will be assumed to typify all monthly operations. The value of time was assumed at \$9.76 per person-hours or \$12.20 per vehicle-hour (11). The benefit-cost ratio for the first five minutes of reduced delay by MAP is seven. The ratio increases exponentially for every five minutes of additional time savings (Table 12).

TABLE 12. BENEFIT/COST 1990-1991

1990-1991	Benefit (\$)	Cost (\$)	Benefit/Cost
No MAP (5 minutes added)	7,410,182	1,064,748	7
No MAP (10 minutes added)	16,188,912	1,064,748	15
No MAP (15 minutes added)	26,335,896	1,064,748	25
No MAP (20 minutes added)	37,851,427	1,064,748	36

NOTE: Benefit = Delay Reduced by MAP (veh-hr) x \$12.20/veh-hr.

The delay and benefit-cost analysis presented in Tables 11 and 12 are subject to change as more complete information on response times becomes available. Additional benefits that were not included in the analysis include opportunity cost of time delays and trip delays due to alternative routes.

IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The Houston Motorist Assistance Program has been very successful in its second year of operation. The following is a list of statistics calculated by the Texas Transportation Institute from August 1990 through July 1991.

1. B/C: Ranges between 7 through 36, depending on average time saved.
2. Number of Incidents: Annual - 12,428; Two Year Total - 24,003.
3. Average Monthly Incidents: 1,036/Fleet; 130/Van.
4. Average Daily Incident: 90/Fleet; 8/Van.
5. Persons Assisted: Annual - 16,462; Two Year Total - 32,771.
6. Average Fleet Incidents Serviced/Patrolled Hour: 3.65.
7. Average Incidents Serviced/100 Vehicle Miles Patrolled: 2.95.
8. Average Van Patrolled Hours/Incident Serviced (hr:min): 1:51.
9. Average Productivity Ratio (travel speed of vans): 19 mph.
10. Major Types of Assistance: Traffic Control (29%); Use of Phone (11%); Tire Repair (9%); and Providing Fuel (7%).
11. Number of Responses during Peak Periods: 61 percent (AM - 23%, PM - 38%).
12. Major Types of Detection: Moving Patrol (86%).
13. Predominant Incident Location: US-290; I-45 North and US-59 North; Outside I-610; I-45 South and US-59 South; I-10 West; and Inside I-610.
14. Majority Freeway Incidents/Patrolled Network: US-59 South (18%); I-10 West (17%); I-45 North (16%); and I-45 South (15%).
15. Average MAP Bi-weekly Salary: \$20,277.
16. Incident Vehicle Location: Mainlane 19%; Shoulder 75%.
17. Cost per Incident: \$85.67.
18. Benefit per Incident: \$600 - \$3,084.

The statistics for the second year of MAP evaluation indicates a continued success of the program. The effective benefit/cost ratio remains at greater than 15 for 10 minutes of reduced time savings to the motoring public.

Table 13 illustrates the various improvements of the 1990-1991 Houston Motorist Assistance Program. The expanded program which consisted of a nine-van patrol fleet was fully operational in June and July of 1991. The number of average incidents serviced by MAP per month increased by 72 and 673 for the 1990-1991 and expanded programs respectively. A 50 percent increase in fleet size resulted in a 70 percent increase in the number of average incidents serviced per month compared to the first year. For the expanded program, there are 0.63 incidents serviced per patrolled hour which increases the average fleet incidents serviced per patrolled hour by 2.38 to 5.68. The average productivity ratio which estimates the fleet vehicle miles patrolled per month per average fleet patrolled hour per month has increased to 19 for the 1990-1991 and expanded programs.

TABLE 13. MAP 1989-1991

Patrol Effects	1989-1990 12-Month Average	1990-1991 12-Month Average	Expanded
Fleet	6	7	9
Fleet Incidents/Month	964	1,036	1,637
Avg. Fleet Incidents/Day	47	50	79
Avg. Van Incidents/Day	8	8	9
Fleet Vehicle Miles Patrolled/Month	31,542	34,769	48,313
Avg. Fleet Vehicle Miles Patrolled/Day	1,516	1,680	2,301
Avg. Van Vehicle Miles Patrolled/Day	248	255	256
Patrolled Days	21	21	21
Avg. Fleet Patrolled Hours/Month	1,755	1,869	2,595
Avg. Fleet Patrolled Hours/Day	84	90	124
Avg. Van Patrolled Hours/Day	14.08	13.63	13.72
Avg. Van Patrolled Hours/ Incident Serviced (min)	1:49	1:51	1:35
Avg. Incidents Serviced/ Patrolled Hour	0.55	0.55	0.63
Avg. Fleet Incidents Serviced/ Patrolled Hour	3.30	3.65	5.68
Avg. Incidents Serviced/ 100 Miles Patrolled	3.10	2.95	3.39
Avg. Productivity Ratio (mi/hr)	18	19	19

For comparative purposes, a report prepared by Cambridge Systematics, Inc. (14) indicated that according to FHWA estimates for 1987, incident congestion cost the nation 1.3 billion vehicle-hours of delay at a loss of nearly \$10 billion. For the Houston metropolitan area, the estimated delay was approximately 100 million vehicle-hours at a loss of \$1.2 billion in 1990 dollars. Based on MAP's present operating guidelines, it is estimated that 50 percent of this delay can be addressed. Therefore, the optimal program would approach addressing 50 million vehicle-hours of incident delay.

Finally, if the present patrol reduces the incident delay by 18 minutes, this would effectively address approximately 5.0 million vehicle-hours of delay, which would account for 10 percent of the addressable delay due to incident congestion. Therefore, the continuation and expansion of the program is necessary to decrease incident congestion in the Houston metropolitan area.

Recommendations

The conclusions indicate that the Houston Motorist Assistance Program can address incident congestion effectively. The following recommendations are made with the intent to lead to continued discussions on operations, planned growth, and objectives for the Houston Motorist Assistance Program.

Patrolling Operations. Patrolling operations indicate that the average productivity ratio (miles/hour) has increased to 19 (Table 2). An increase in this average indicates a more effective and productive MAP. Considering that more than 80 percent of all incidents are detected by moving patrols, this ratio is a direct relationship between the vehicle miles patrolled per patrolled hour and the effective surveillance of the patrolling fleet.

In order to maintain an acceptable productivity ratio the patrolling officers should:

- Reduce incident clearance times by immediately resuming surveillance when the incident is cleared.

- Stagger lunch and shift breaks to address the low productivity ratio shown in Graph 7.
- Employ a policy of quick clearance to avoid long incidents due to minor and major accidents. After an incident scene is secure, continue patrolling while other enforcement provides assistance.
- Utilize alternative routes to respond to incidents as warranted by traffic congestion transmitted through the Interim Control Center (ICC), Houston Intelligence Transportation System's (HITS), and Geographical Information System's (GIS).

To maintain improvements on the average fleet incidents serviced per patrolled hour (3.65), the patrolling officers should:

- Record all incidents for each vehicle assisted on the incident log forms.
- Be aware that the average incidents serviced/patrol hour is 0.55 or that it takes 1 hour and 49 minutes to encounter an incident.
- A goal should be set to provide assistance to an average of 1,600 incidents per month; a level which has been attained during the expanded program.

Officer recording standards should be reviewed periodically to provide for consistent and related evaluations. Inconsistent recording will not reflect the true benefits of the program. To improve on recording standards, the patrolling officers should:

- Thoroughly read the Houston Motorist Assistance Program Operating Guidelines to review responsibilities and requirements.
- Discuss recording requirements with supervisors.
- Record all types of incidents that contribute to vehicle delay.
- Fully complete incident log forms.

MAP Surveillance. The majority of MAP surveillance is provided by the MAP vans patrolling 16 hours/day, five (5) days/week (Graph 11). The expanded program route

adjustments and extended coverage resulted in a 70 percent increase in fleet incidents per month. To enhance present surveillance of the Houston freeway system, the program should:

- Improve its public awareness through PSA, brochures, and special event assistance.
- Utilize other communication techniques for reporting incidents; such as ICC radio, citizens band radio, HITS, and other traffic information resources.
- Adjust patrol routes on US-290, I-45 North, and US-59 North to increase patrols outside I-610 Loop Freeway. Adjust patrol routes on I-45 South, US-59 South, and I-10 West to increase patrols inside I-610 Loop.
- Utilize a Geographical Information System to provide for dynamic MAP vehicle routing based on traffic patterns, construction, weather, and vehicle volumes.

Feasible Expansion. The optimal Motorist Assistance Program would approach addressing 50 million vehicle-hours of incident delay. Assuming the present patrol reduces incident delay by one third, MAP would effectively address 10 percent of the addressable delay due to incident congestion. That is, there remains approximately 90 percent of incident delay that needs to be addressed. To feasibly address additional delays, the program should:

- Establish an acceptable benefit/cost ratio with each additional patrol unit added.
- Utilize a GIS to provide for vehicle dispatching, incident monitoring, alternative routing, and other dynamic management decisions required for a continuously changing transportation network.
- Improve coordination between the different agencies involved.

Factors that will benefit the program and help establish a reasonable expansion include:

- Increased patrol coverage to SH-288, SH-225, I-10 East, I-610 East, and CBD.
- Increased patrol days to weekends and 24-hour days.
- Reduced patrol headways on designated freeways where incident rates are high.
- Increased incidents/patrol unit and decrease total clearance times.

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APPENDIX
PUBLIC APPRECIATION LETTERS

August 9, 1991

Sheriff Johnny Klevenhagen
Harris County Sheriff's Department
1301 Franklin
Houston, Texas 77002

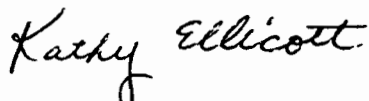
Dear Sheriff Klevenhagen:

I recently had to pull off Hwy. 290 due to a car problem in the middle of rush-hour traffic. My guardian angel must have been with me, as I had no sooner turned off the car engine and looked in my rear view mirror and there was a van parked behind me. My first thought was, "oh dear, who's here to rob me"... when I saw a Deputy approach my car. I was astonished that he was behind me when he saw it happen and also that he even existed. I've been in the Houston area for over 4 years now and I can say it was always my worst nightmare to breakdown on one of these freeways. Having happened to me now, I'm not quite afraid as I was knowing that there is a Motorist Assistance Program (M.A.P.) to assist the citizens of Houston.

My heartfelt thanks to Deputy Kelthley and all the other staff who patrol our freeways to make it safer for Houstonians. When I asked for a card or something I was given a nice printed card showing those who support this much needed program. With all the negatives there are in society in today's times, it is VERY REASSURING when we see something that is working for the benefit of our communities. All the sponsors who support M. A. P. can know that their monies and endeavors are much appreciated by all of us honest, law abiding citizens.

Keep up the good work!

Sincerely,



Kathleen B. Ellicott
7726 Covington Drive
Houston, Texas 77095

July 19, 1991

Jackie Snowden
9235 Westheimer #139
Houston, Texas 77063

Sheriff Johnny Klevenhagen
Harris County Sheriff's Department
1301 Franklin
Houston, Texas 77002

Dear Sheriff Klevenhagen,

I am taking the time to write this letter to compliment you on the actions of one of your officers, Mr. Wayne Heintze.

This morning, July 19th, I was riding to work with my husband because my car ~~was~~ is being repaired. On Loop 610 in Bellaire, my husband's service truck broke down! Needless to say, there was a very high level of tension and frustration in the air as we sat there for a minute. At that moment, Officer Heintze stopped to inquire about the situation and offer assistance. He called my husband's shop from his car and a truck was dispatched for him, then he offered me a ride to my office at Kirby and Hwy 59.

Officer Heintze was so pleasant, courteous, and helpful, he really salvaged an ~~a~~ aggravating situation. This may not seem like a very dramatic gesture, but in these times, when we so often are conditioned to expect the negative, it is very reassuring to meet someone who demonstrates the positive characteristics of his profession.

Respectfully yours,


Jackie Snowden

4112 Lehigh
Houston, TX 77005
July 14, 1991

Sheriff Johnny Klevenhagen
Harris County Sheriff's Department
1301 Franklin
Houston, TX 77002

Dear Sheriff Klevenhagen:

I want to commend the MAP program and to thank Deputy Shannon for his assistance this past week. On Wednesday, my car died at 5:00 p.m. just as I entered 59 South at the 288 turnoff. There was hardly time to pull to the shoulder and shut it down when Deputy J. Shannon (#4065) drove up. He started the car twice, but eventually it had to be towed.

As many times as I've noticed the MAP vehicles, I never realized they were operated by law enforcement people. I was further reassured to learn that Deputy Shannon intended to follow me to my exit. Then, when the car didn't make it that far, he stayed with me until he saw I had reliable assistance. These policies surprised me and give me a great sense of security.

The help arrived so quickly and Deputy Shannon's attitude was so upbeat that I never even had time to become annoyed or embarrassed with myself for becoming a 5:00 road hazard.

If you keep records: the problem was caused by the fuel filter. My license is 260 PXR.

Again, my thanks to the MAP program and to Deputy Shannon.

Very sincerely yours,

Marion Selzer
Marion C. Selzer

Aurora Flores
7535 Elm St.
Houston, Texas 77023

June 26, 1991

Sheriff Johnny Klevenhagen
Harris County Sheriff's Dept.
1301 Franklin
Houston, Texas 77002

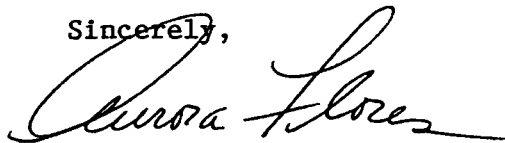
Dear Sheriff Klevenhagen:

I have always been scared to death that one day my car would get disabled while I was on the freeway, going to and from work. Well, yesterday my nightmare came true. My car died out on me on the Southwest Freeway at about 5:15 PM. I would have been stuck there, blocking traffic and with the chance that this would cause an accident, if not for J. G. Shannon, M.A.P. #4065, who came to my rescue. He pushed my car off the freeway to a safe place and let me use his phone to call for further assistance.

I greatly urge you to keep the Motorist Assistance Program in effect. I feel that this program is very important for the safety of the public, especially women. I say especially women because so many of us are on the freeways daily commuting back and forth to work and when we have a flat tire or mechanical breakdown, we are stranded and at the mercy of strangers, which, as you well know, is very dangerous since the criminal element in our city is at an all time high.

Again, I thank you for the Motorist Assistance Program and the courteous deputy that assisted me yesterday.

Sincerely,

A handwritten signature in cursive script that reads "Aurora Flores". The signature is fluid and elegant, with the first name "Aurora" being more prominent than the last name "Flores".

Aurora Flores

Mrs. Elnora Buzek
1411 Bernie Ave.
Rosenberg, Texas 77471

June 18, 1991

Sheriff Johnny Klevenhagen
Harris County Sheriff's Department
1301 Franklin
Houston, Texas 77002

Dear Sir,

I would like to commend you on your Motorist Assistance Program and Deputy/Officer S. W. Reed. I usually don't venture into the city without my husband and other members of my family (especially at this time-being pregnant); but, because of urgent business I had no other choice. Therefore, you can imagine my dismay at becoming stranded on the Southwest Freeway with a flat tire. There was no way I could cross the freeway to pursue help, especially with traffic moving at a rate of 65 mph and above. Also, the thought of being another homicide statistic raced through my mind. I can't begin to explain the relief, happiness and joy that overcame me, when in less than 5 minutes Deputy Reed and another motorist stopped and lent me a helping hand.

I have to comment on Deputy Reed's attitude — He seemed to be very serious about his job. He was extremely cordial, friendly, nice, etc. He even went so far as to check my other tires and give my pointers and advice on each one. I really appreciate that.

Once again Thank you very much, for your program and Deputy Reed. I would appreciate it very much if you could send me information on the correct procedures for making a donation to this great program. It is extremely needed and appreciated.

Sincerely,

A handwritten signature in cursive script, appearing to read "Elnora Buzek".

Elnora Buzek

cc: Texas St. Depart. of Hwys.
& Public Transportation

18 June 1991

Sheriff Johnny Klevenhagen
Harris County Sheriff's Department
1301 Franklin
Houston, Texas 77002

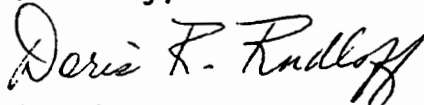
Subject: Motorist Assistance Program

Dear Sheriff Klevenhagen,

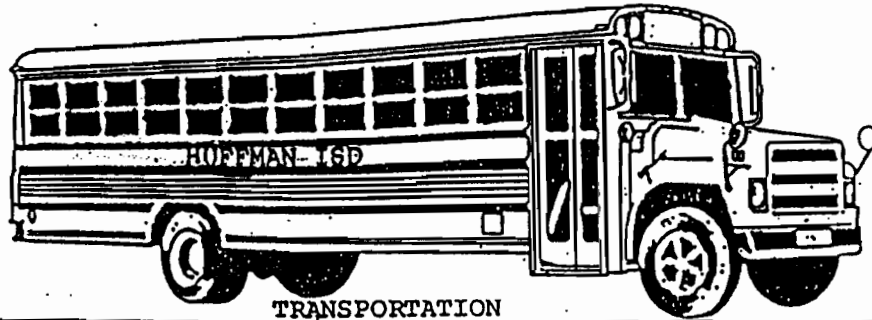
I just want to commend you on the services of the Motorist Assistance Program. I was not aware of this service until last Monday afternoon (June 10) when my car stopped running on the Southwest Freeway near the Westpark exit.

Your Mr. J. G. Shannon, #4065, was most courteous and a God-send. I do not know what I would have done had he not come along at the exact time my car decided to quit! His voice over the loud speaker was so calm--and I was in a panic state...so please commend him for me. Thank you so much for instituting such a program. I hope you are getting the publicity for this which you so richly deserve.

Sincerely,

A handwritten signature in cursive script that reads "Doris R. Rudloff". The signature is written in dark ink and is positioned above the printed name and address.

(Mrs.) Doris R. Rudloff
7506 Clarewood # 236
Houston, Texas 77036-4316



TRANSPORTATION

3403 Huffman Eastgate Rd Huffman , Texas 77336 (713) 324-1711

MAY 23, 1991

JACK IRVIN-DIRECTOR OF TRANSPORTATION
24403 E LAKE HOUSTON PWKY
HUFFMAN TX 77336

SHERIFF JOHNNY KLEVENHAGEN
HARRIS COUNTY SHERIFF'S DEPARTMENT
1301 FRANKLIN
HOUSTON TX 77002

DEAR SHERIFF KLEVENHAGEN

THIS LETTER IS IN APPRECIATION TO DEPUTY J M JOHNSON FOR HIS ASSISTANCE TO ONE OF OUR 72-PASSENGER SCHOOL BUSES THAT HAD A WATER PUMP GO OUT ON HWY 59 NORTH MAY 22, 1991. THIS BUS WAS FULL OF STUDENTS COMING BACK FROM A FIELD TRIP DOWNTOWN. AND HAD A FAIRELY NEW DRIVER. DEPUTY J M JOHNSON AND YOUR PROGRAM MADE OUR ACTION TIME AND THE SAFETY OF ALL OUR PERSONNEL AND STUDENTS PROFESSIONAL.

SINCERELY YOURS


JACK IRVIN

DIRECTOR OF TRANSPORTATION



1289 N. POST OAK
SUITE 100
HOUSTON, TEXAS 77055
(713) 688 9500
FAX (713) 688 3959

April 29, 1991

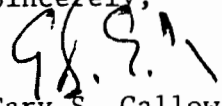
Sheriff Johnny Klevenhagen
Harris County Sheriff's Department
1301 Franklin
Houston, Texas 77002

Dear Sheriff Klevenhagen:

Last week I was personally driving our company truck when I experienced a blowout on the front tire on the Katy freeway. I managed to get the truck to the shoulder without hurting myself or anyone else. Your officer Vince Gonzales was passing by in a M.A.P. van and stopped to lend assistance. He allowed me to use his phone to call for a heavy duty wrecker and gave me some general advice as to the safety of where I had chose to park. I feel that if there had been no M.A.P. program, I might have injured myself or another motorist by trying to get some assistance. For in the hour that I waited for the wrecker to arrive, not one other vehicle stopped or tried to help.

I applaud your efforts with this program.

Sincerely,


Gary S. Galloway
President

GSG:dla

April 29, 1991

Sheriff Johnny Klevenhagen
Harris County Sheriff's Department
1301 Franklin
Houston, Texas 77002

RE: Motorist Assistance Program

Dear Mr. Klevenhagen:

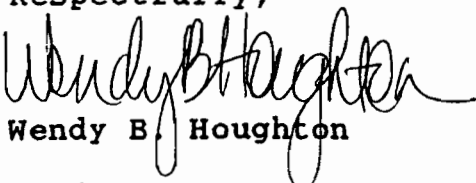
I am writing today to thank Deputies Vince and Fred Gonzales for assistance through the Motorist Assistance Program on the morning of April 29, 1991. My car stalled on Interstate 10 in the morning rush hour, and it was not more than 5 minutes that I received assistance. I was able to use the phone and the officers waited with me until, after a short while, my car started again. I was grateful not only for the assistance, but to just have someone there to talk to in my dilemma.

As a 22 year old female, I find this service invaluable. The reasons do not lie solely in my lack of knowledge of automobiles, but because I drive alone most of the time and family and friends are not always available. It is for this reason that I ask you to, in the near future, consider extending the current hours of operation, 6:00AM to 10:00PM, to hours further into the night. I am grateful that my misfortune did not occur in the middle of the night, but the thought that it could makes me very uneasy, because a service such as this would not be available. I understand funding remains limited, but the positive effect would greatly outweigh the cost.

I hope that others who have had the great fortune to have utilized this service are as grateful as I am, and I hope that they are letting you know how much it helped them.

I thank you again for the assistance on April 29, 1991. I also thank you, in advance, for the consideration of increased hours.

Respectfully,

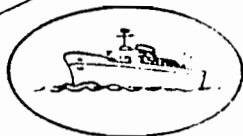

Wendy B. Houghton

WBH/



Import-Export

PHONE: (713) 440-4232



W. D. JENKINS & CO.

16907 WAYCREEK RD., HOUSTON, TEXAS 77068 U.S.A.

April 19, 1991

SHERIFF JOHNNY KLEVENHAGEN
Harris County Sheriff's Department
1301 Franklin
Houston, Tx. 77002

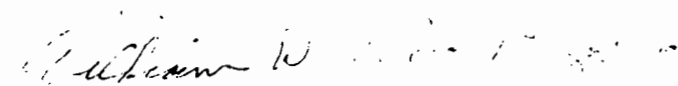
Ref: Motorist Assistance Program

Sheriff Klevenhagen,

To have a flat tire in the middle of Rt. 610 South at the Galleria in mid afternoon is no joke to a couple of Senior Citizens driving a friend's car. That is exactly what happened to my wife and I at 3:10 P. M. Thursday, April 18, 1991 when along comes Deputy Wayne Heintze, working the Motorist Assistance Program.

Changing a tire on a hot afternoon and a strange vehicle poses a problem for a 70 year old, but to Officer Heintze it was a snap. Not only did he know how to get the hub cap off but he had a better lug wrench and he proceeded to get the job done promptly.

We were on our way within a few minutes and certainly would be amiss if we didn't commend your fine program to help motorist in need of assistance with such outstanding Officers as Deputy Wayne Heintze. Our heartfelt thanks to you and he for the help rendered.


William D. and Eva R. Jenkins

Edward M. Rubenstein, ChFC, CLU, LIC
Agency Manager

Houston Associates
Suite 227, 1225 North Loop West
Houston, Texas 77008
713 864-7733



April 15, 1991

Harris County Sheriff's Dept.
1301 Frandlin
Houston, Texas 77002

Dear Sirs/Mesdames:

Would you please give a big "pat on the back" and a loud "atta boy" to Deputy Morris Covin, #1150!

On Monday morning, April 8, he assisted me on the Southwest Freeway with a problem I couldn't handle myself. I had to stop in the peak morning traffic inbound on U.S. 59 when my rear right tire disintegrated. I did not know how to use the inflatable spare tire or the special air compressor, both of which were necessary in that situation. My vehicle also could not be towed because of the rear end blowout.

Deputy Covin pulled up in his MAP van and offered to help. I was frankly quite concerned about safety because I was stopped in the median on the far left just the other side of a rise. Drivers coming over that rise could not see our vehicles until they were extremely close. However, Deputy Covin assisted quickly and confidently and then would not accept any kind of monetary gratuity.

This sort of pleasant "can do" attitude is certainly a positive influence on the public and was sincerely appreciated by me. Please again express my thanks to Deputy Covin and a special thanks to your department for the MAP program.

Sincerely,

A handwritten signature in cursive script that reads "Ed Rubenstein".

Ed Rubenstein

cc: Deputy Morris Covin

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Houston, TX 77008

Harris County Sheriff's Department

I wish to express my
deepest gratitude to

Mr. R. Jackson. He stopped
on May 14 at 1 p.m. to repair
my flat tire. I was headed
home on the Gulf Freeway
near the Pasadena Exit.

at the time he stopped
I felt so helpless and
when he pulled in behind
my car, I said "Thank
you Lord" for sending someone
my way.

This is an excellent
Program, especially for little
old ladies who get stranded
on the freeways. It is a
very frightening experience to
have trouble driving on the
freeway.

Bless you all
Sincerely

Geneva Archer