

Study Overview and Summary of Findings

Overview

As requested by South Jersey Traffic Safety Alliance (SJ TSA), the South Jersey Transportation Planning Organization (SJ TPO) has undertaken a study of alcohol and drug crashes in the region. The purpose of the analysis is to determine –

- The extent and degree of the problem - i.e., percent of this type of crash to total crashes in region)
- Nature of the problem – i.e., what are the prevalent types of crashes that result from alcohol and drug crashes
- Specific concentrations (by corridor or area) of this type of crash in the SJ TPO region

The Study will be used by SJ TSA in its projects and programs to reduce alcohol and drug-related crashes, and the findings resulting from the analysis can be used to develop performance measures to gauge the success of these programs.

SJ TPO relies totally on the most recent crash data available from the New Jersey Department of Transportation (NJ DOT) website (during this analysis, only 1997 to 2000 data was available). The website data was grouped by county and year, and includes all crashes that occurred for each year. DOT data does not report if the driver was convicted of driving while intoxicated, but does indicate that the driver had been drinking or using drugs, and that the driver was tested for alcohol or drugs. It should also be noted that this crash analysis does not provide information on the full extent of the problem. Not all traffic violations involving impaired drivers are crash related.

Study Process

In this analysis, an alcohol and drug crash was identified as one in which the “Physical Condition of Driver” data noted that alcohol and drugs were involved. Any crash in which the driver refused the alcohol test was also included. If the driver was tested for alcohol, but no alcohol or drug use was noted in “Physical Condition”, the crash was excluded from the analysis. Using these criteria, a list of alcohol and drug crashes was compiled for each SJ TPO County for the 1999- 2000 period.

This two-year data was then summarized by county to show crash incidence by-

- Basic type of collision (head on, same direction, fixed object, etc)
- Description of collision type (ran off road, hit pedestrian or parked car, etc.)
- Number of vehicles involved (a vehicular collision vs. one car crash)
- Injury, fatal and property damage (non-injury) crashes
- Major factors contributing to the crashes (e.g., unsafe speed)
- Time of accident (late evening, early morning, etc.)

For comparison purposes, this same analysis was also prepared, by county, for all accidents for the two-year period.

Alcohol and drug-related accident locations were mapped for all State and Federal roads in the SJ TPO area, and for county roads which had 6 or more of this type of accident in order to determine if there were any unusual concentrations (e.g., along a road segment or within an area, such as a town or city). All of this information, including

county crash location maps, data summary tables and a general summary of findings, are included in this report.

Summary of Findings

Data Summary

The SJTPO regional study findings, summarized in Table 2, shows that alcohol and drug related crashes account for approximately 6 % of total accidents for the corresponding region and time period. This is a statistic (i.e., 5-6 %) that holds true for each of the SJTPO counties. For example, of Atlantic County's 20,000 crashes in the 1999-2000 period, roughly 1100 (5.4 %) were alcohol-drug related.

Notable findings from the study include the following –

Table 1
ALCOHOL AND DRUG-RELATED CRASH ANALYSIS
SUMMARY OF STUDY FINDINGS - SJTPO REGION 1999 - 2000

Crashes /Crash Type	All Crashes		Alcohol and Drug Related Crashes	
	Amount	Percent	Amount	Percent
Total	40906	100.0%	2223	100.0 %
Severity + – Fatality/Injury	1449	28.0 %	900	40.5 %
Collision Type – Head-on	786	3.3 %	89	10.9 %
Contributing Factor – Unsafe Speed	1618	4.0 %	177	8.0 %
Time of Accident - 9 PM to 3 AM	5711	15.3 %	963	43.3 %
Single Vehicle Crash Type-				
Single-Vehicle Crashes -	17408	42.6 %	1403	63.1 %
Ran Off Road	2486	14.3 %	391	27.8 %
Hit Fixed Object	7488	43.0 %	717	51.1 %

+ Crash involving at least 1 fatality or injury (as opposed to a property damage crash)

Of the 2223 alcohol and drug crashes in the SJTPO region, the majority (63 %) were single vehicle crashes, as compared to 43 % for all of the crashes (40,906) in the region (see Tables 1 through 6 for SJTPO summary and county breakdown). Single-vehicle crashes accounted for 78 % of all alcohol and drug crashes in Salem County, and 61 % in Atlantic County.

“Ran off road” is a vehicle action noted in crash statistics to show one of a sequence of events leading to a one-vehicle crash. It indicates loss of vehicle control. For the region, 28 % of alcohol and drug crashes in the SJTPO region (as opposed 14 % of all crashes) and 40 % in Cumberland County, list this as primary event leading to a one-vehicle crash.

Findings show a high percentage (in comparison to total crashes) of head-on collisions, and of crashes occurring during late evening-early morning hours. The percentage of crashes relating to “unsafe speed” was twice as high for alcohol and drug crashes than for all crashes. Though interesting, this not as dramatic a finding as was expected.

The percentage of fatal /injury crashes was significant (40%) for alcohol and drug crashes (as compared to 23 % for all crashes).

Route Data and Mapping

Route information, by county, in Table 6, includes crashes by year, number and percentage of fatal and injury crashes, and number/percentage of single vehicle crashes and multivehicle collisions. Though useful, this route data should be converted to accidents per mile for comparative analysis. The maps in Figures 1 through 4 show Alcohol and drug related crashes by county, and differentiates between fatal, injury and property damage crashes. This mapping will be provided to SJTSA for further analysis.

Conclusions

In undertaking this study, some initial assumptions were made, concerning crash type, contributing factors and other crash-related information based on driver condition. It was assumed that, if a driver is impaired by alcohol or drugs, this person is not as attentive or alert as the unimpaired driver, nor does this person have the latter's degree of control of his vehicle. The impaired driver might be prone to weaving and veering off of the road in either direction, (and fail to negotiate potentially dangerous curves) resulting in head-on collisions with oncoming vehicles. He may also be prone to single-vehicle "off-road" crashes (e.g., involving fixed objects such as trees, poles, or guiderrails).

It was also anticipated that this type of crash would not be evenly distributed throughout the day, but would be concentrated in the late evening and early morning hours. Due to data limitations, day-of-the-week, seasonal and holiday crash distribution data was not compiled.

For the most part, these assumptions were verified by the study, although, as noted above, some of the findings were not anticipated. The data did not show that unsafe speed was a major factor in this type of accident, although this is probably due more to difficulties in verifying this as a contributing cause. On the other hand, the percentage of fatal and injury crashes was significant (40%) for alcohol and drug crashes. Although the reason for this is not apparent, it could indicate a high number or share of high impact crashes (e.g. vehicles hitting fixed objects).

TABLE 2

SJTPO REGION**Percent of Alcohol and Drug- Related
Crashes to Total Crashes****1999 and 2000**

<u>Factor</u>	<u>Total Crashes</u>	<u>Alcohol and Drug Related Crashes</u>	
		<u>Number</u>	<u>Percent of Total +</u>
<u>Year</u>			
1999	19221	1089	5.7%
2000	21685	1134	5.2%
Total	40906	2223	5.4%
<u>Severity</u>			
Fatal	157	22	14.0%
Injury	11292	878	7.8%
Total Fatal and Injury	11449	900	7.9%
<u>Number of Vehicles Involved</u>			
1 Vehicle	17408	1403	8.1%
2 or More Veh.	23498	820	3.5%
<u>Multi Vehicle Collisions</u>			
<u>-Collision Type -</u>			
Same Direction	12600	440	3.5%
Angle	8649	243	2.8%
Head-on	786	89	11.3%
Left Turn	1445	46	3.2%
Other	18	2	11.1%
<u>One Vehicle Crash- - Contributing Factors -</u>			
Ran Off Road	2486	391	15.7%
Hit Bike or Pedestrian	875	28	3.2%
Hit Fixed Object	7488	717	9.6%
Other	6559	268	4.1%
<u>All Accidents- Misc.</u>			
Unsafe Speed as a Contributing Factor	1618	177	10.9%
<u>Time Of Accident -</u>			
6 PM to 8:59 PM	5528	408	7.4%
9 PM to 11:59 PM	3561	471	13.2%
12 AM to 3 AM	2150	492	22.9%

+ Percent of total crashes for that particular factor.

TABLE 3
SJTPO REGION
Alcohol and Drug-related Crashes
1999 and 2000

<u>Factor</u>	All Crashes in County 1999 and 2000		Alcohol & Drug-Related Crashes - 1999 and 2000	
	Number	Percent of Total	Number	Percent of Total
<u>Year</u>				
1999	19221	47.0%	1089	49.0%
2000	21685	53.0%	1134	51.0%
Total	40906	100.0%	2223	100.0%
<u>Severity</u>				
Fatal	157	0.4%	22	1.0%
Injury	11292	27.6%	878	39.5%
Total Fatal and Injury	11449	28.0%	900	40.5%
<u>Number of Vehicles Involved</u>				
1 Vehicle	17408	42.6%	1403	63.1%
2 or More Veh.	23498	57.4%	820	36.9%
<u>Multi Vehicle Collisions</u>				
<u>-Collision Type -</u>				
Same Direction	12600	53.6%	440	53.7%
Angle	8649	36.8%	243	29.6%
Head-on	786	3.3%	89	10.9%
Left Turn	1445	6.1%	46	5.6%
Other	18	0.1%	2	0.2%
<u>One Vehicle Crash- - Contributing Factors -</u>				
Ran Off Road	2486	14.3%	391	27.8%
Hit Bike or Pedestrian	875	5.0%	28	2.0%
Hit Fixed Object	7488	43.0%	717	51.1%
Other	6559	37.7%	268	19.1%
<u>All Accidents- Misc.</u>				
Unsafe Speed as a Contributing Factor	1618	4.0%	177	8.0%
<u>Time Of Accident -</u>				
6 PM to 8:59 PM	5528	13.5%	408	18.4%
9 PM to 11:59 PM	3561	8.7%	471	21.2%
12 AM to 3 AM	2150	5.3%	492	22.1%

TABLE 4

Atlantic County
Alcohol and Drug-related Crashes
1999 and 2000

<u>Factor</u>	All Crashes in County 1999 and 2000		Alcohol & Drug-Related Crashes - 1999 and 2000	
	Number	Percent of Total	Number	Percent of Total
<u>Year</u>				
1999	9558	48%	514	47%
2000	10408	52%	572	53%
Total	19966	100%	1086	100%
<u>Severity</u>				
Fatal	60	0.3%	5	0%
Injury	6122	30.7%	476	44%
Total Fatal and Injury	6182	31.0%	481	44%
<u>Number of Vehicles Involved</u>				
1 Vehicle	7845	39.3%	641	59%
2 or More Veh.	12121	60.7%	445	41%
<u>Multi Vehicle Collisions</u>				
<u>-Collision Type -</u>				
Same Direction	7222	59.6%	259	58%
Angle	3761	31.0%	120	27%
Head-on	349	2.9%	40	9%
Left Turn	789	6.5%	26	6%
Other		0.0%		0%
<u>One Vehicle Crash- - Contributing Factors -</u>				
Ran Off Road	685	8.7%	134	21%
Hit Bike or Pedestrian	419	5.3%	6	1%
Hit Fixed Object	3458	44.1%	336	52%
Other	3283	41.8%	165	26%
<u>All Accidents- Misc.</u>				
Unsafe Speed as a Contributing Factor	705	3.5%	84	8%
<u>Time Of Accident -</u>				
6 PM to 8:59 PM	2743	13.7%	196	18%
9 PM to 11:59 PM	1609	8.1%	204	19%
12 AM to 3 AM	1062	5.3%	232	21%

TABLE 7

Cumberland County
Alcohol and Drug-related Crashes
1999 and 2000

<u>Factor</u>	All Crashes in County 1999 and 2000		Alcohol & Drug-Related Crashes - 1999 and 2000	
	Number	Percent of Total	Number	Percent of Total
<u>Year</u>				
1999	4795	46.4%	281	50.6%
2000	5547	53.6%	274	49.4%
Total	10342	100.0%	555	100.0%
<u>Severity</u>				
Fatal	45	0.4%	5	0.9%
Injury	2530	24.5%	171	30.8%
Total Fatal and Injury	2575	24.9%	176	31.7%
<u>Number of Vehicles Involved</u>				
1 Vehicle	4465	43.2%	340	61.3%
2 or More Veh.	5877	56.8%	215	38.7%
<u>Multi Vehicle Collisions</u>				
<u>-Collision Type -</u>				
Same Direction	2770	47.1%	99	46.0%
Angle	2530	43.0%	74	34.4%
Head-on	274	4.7%	34	15.8%
Left Turn	303	5.2%	8	3.7%
Other	0	0.0%	0	0.0%
<u>One Vehicle Crash- - Contributing Factors -</u>				
Ran Off Road	755	16.9%	135	39.7%
Hit Bike or Pedestrian	250	5.6%	13	3.8%
Hit Fixed Object	1970	44.1%	159	46.8%
Other	1490	33.4%	33	9.7%
<u>All Accidents- Misc.</u>				
Unsafe Speed as a Contributing Factor	477	4.6%	43	7.7%
<u>Time Of Accident -</u>				
6 PM to 8:59 PM	1393	13.5%	111	20.0%
9 PM to 11:59 PM	1011	9.8%	142	25.6%
12 AM to 3 AM	451	4.4%	96	17.3%

TABLE 5

Cape May County
Alcohol and Drug-related Crashes
1999 and 2000

<u>Factor</u>	All Crashes in County 1999 and 2000		Alcohol & Drug-Related Crashes - 1999 and 2000	
	Number	Percent of Total	Number	Percent of Total
<u>Year</u>				
1999	3000	45%	191	49%
2000	3629	55%	201	51%
Total	6629	100%	392	100%
<u>Severity</u>				
Fatal	28	0.4%	7	2%
Injury	1613	24.3%	145	37%
Total Fatal and Injury	1641	24.8%	152	39%
<u>Number of Vehicles Involved</u>				
1 Vehicle	3107	47%	274	70%
2 or More Veh.	3522	53%	118	30%
<u>Multi Vehicle Collisions</u>				
<u>-Collision Type -</u>				
Same Direction	1544	44%	64	54%
Angle	1651	47%	34	29%
Head-on	70	2%	8	7%
Left Turn	239	7%	10	8%
Other	18	1%	2	2%
<u>One Vehicle Crash- - Contributing Factors -</u>				
Ran Off Road	499	16%	82	30%
Hit Bike or Pedestrian	167	5%	6	2%
Hit Fixed Object	1747	56%	152	55%
Other	694	22%	34	12%
<u>All Accidents- Misc.</u>				
Unsafe Speed as a Contributing Factor	187	3%	23	6%
<u>Time Of Accident -</u>				
6 PM to 8:59 PM	803	12%	67	17%
9 PM to 11:59 PM	570	9%	73	19%
12 AM to 3 AM	396	6%	108	28%

TABLE 6
Salem County
Alcohol and Drug-related Crashes
1999 and 2000

<u>Factor</u>	All Crashes in County 1999 and 2000		Alcohol & Drug-Related Crashes - 1999 and 2000	
	Number	Percent of Total	Number	Percent of Total
<u>Year</u>				
1999	1868	47%	103	54%
2000	2101	53%	87	46%
Total	3969	100%	190	100%
<u>Severity</u>				
Fatal	24	0.6%	5	3%
Injury	1027	25.9%	86	45%
Total Fatal and Injury	1051	26.5%	91	48%
<u>Number of Vehicles Involved</u>				
1 Vehicle	1991	50%	148	78%
2 or More Veh.	1978	50%	42	22%
<u>Multi Vehicle Collisions</u>				
-Collision Type -				
Same Direction	1064	54%	18	43%
Angle	707	36%	15	36%
Head-on	93	5%	7	17%
Left Turn	114	6%	2	5%
Other	0	0%	0	0%
<u>One Vehicle Crash- - Contributing Factors -</u>				
Ran Off Road	547	27%	40	27%
Hit Bike or Pedestrian	39	2%	3	2%
Hit Fixed Object	313	16%	70	47%
Other	1092	55%	36	24%
<u>All Accidents- Misc.</u>				
Unsafe Speed as a Contributing Factor	249	6%	27	14%
<u>Time Of Accident -</u>				
6 PM to 8:59 PM	589	15%	34	18%
9 PM to 11:59 PM	371	9%	52	27%
12 AM to 3 AM	241	6%	56	29%

Table 8 (Continued)
SJTPO COUNTIES - ROUTE DATA
ALCOHOL / DRUG-RELATED ACCIDENTS 1999 AND 2000

Total Crashes +			Severity				Vehicles Involved*			
1999	2000	Total	Fatal	Injury	Fatal/ Injury	% of Total	1 Veh	% of Total	2 +	% of Total

Atlantic County

Route / Road

- US 9	20	19	39		24	24	62%	17	44%	22	56%
- US 30	30	52	82	3	50	53	65%	38	46%	44	54%
- US 40	50	50	100		47	47	47%	33	33%	67	67%
- NJ 50	20	12	32		8	8	25%	14	44%	6	19%
- NJ54	7	14	21		14	14	67%	12	57%	9	43%
- NJ 87	3	5	8		4	4	50%	3	38%	5	63%
- US 322	9	12	21		11	11	52%	11	52%	10	48%
- Co. 444	30	15	45		19	19	42%	20	44%	10	22%
- Co. 446	32	24	56	1	30	31	55%	29	52%	27	48%
- Co. 542	4	6	10		8	8	80%	7	70%	3	30%
- Co. 557	3	3	6		2	2	33%	4	67%	2	33%
- Co. 559	24	16	40		18	18	45%	28	70%	12	30%
- Co. 561	14	9	23		14	14	61%	6	26%	8	35%
- Co. 563	6	11	17		4	4	24%	8	47%	9	53%
- Co. 575	3	11	14		7	7	50%	8	57%	6	43%
- Co. 585	10	11	21		13	13	62%	8	38%	13	62%
- Co. 615	5	2	7		3	3	43%	3	43%	4	57%
- Co. 629	5	11	16		6	6	38%	6	38%	10	63%
- Co. 634	5	1	6		4	4	67%	4	67%	2	33%
- Co. 646	6	9	15		9	9	60%	7	47%	8	53%
- Co. 651	5	4	9		8	8	89%	6	67%	3	33%
Atlantic	26	24	50		14	14	28%	29	58%	21	42%
Pacific	14	9	23		5	5	22%	5	22%	18	78%
So. Carolina	3	5	8		3	3	38%	3	38%	5	63%
Arctic	7	7	14		10	10	71%	5	36%	9	64%

+ Includes all State and Federal routes, and county roads with 6 or more accidents in the 2 year period.

* One vehicle crashes vs. collisions involving 2 or more vehicles

Table 8
SJTPO COUNTIES - ROUTE DATA
ALCOHOL / DRUG-RELATED ACCIDENTS 1999 AND 2000

Total Crashes +			Severity				Vehicles Involved*			
1999	2000	Total	Fatal	Injury	Fatal/ Injury	% of Total	1 Veh	% of Total	2 +	% of Total

Salem County

Route / Road	1999	2000	Total	Fatal	Injury	Fatal/ Injury	% of Total	1 Veh	% of Total	2 +	% of Total
- US 40	2	19	19		10	10	53%	15	79%	6	32%
- NJ 49	9	8	17		10	10	59%	12	71%	5	29%
- CO 540	4	5	9	1	6	7	78%	4	44%	5	56%
- NJ 45	3	4	7		3	3	43%	6	86%	1	14%
- US 130	5	2	7		3	3	43%	4	57%	3	43%
- NJ 77	2	4	6		3	3	50%	5	83%	1	17%
- Co 551	2	4	6		2	2	33%	6	100%		

Cape May County

Route / Road	1999	2000	Total	Fatal	Injury	Fatal/ Injury	% of Total	1 Veh	% of Total	2 +	% of Total
- NJ 47	15	15	30	1	18	19	63%	18	60%	12	40%
- Co. 444	5	18	23	2	12	14	61%	16	70%	7	30%
- US 9	8	14	22		11	11	50%	14	64%	8	36%
- Co. 619	11	4	15		5	5	33%	10	67%	5	33%
- Co. 621	6	8	14		7	7	50%	4	29%	10	71%
- Co. 603	2	5	7	1	1	2	29%	4	57%	3	43%
- Co. 626	3	4	7		3	3	43%	2	29%	5	71%
- Co. 656	4	2	6			0	0%	5	83%	1	17%
Atlantic	5	3	8		5	5	63%	2	25%	6	75%
Pacific	5	6	11		3	3	27%	6	55%	5	45%
Central	6	7	13		3	3	23%	9	69%	4	31%

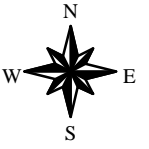
Cumberland County

Route / Road	1999	2000	Total	Fatal	Injury	Fatal/ Injury	% of Total	1 Veh	% of Total	2 +	% of Total
- NJ 49	17	13	30		13	13	43%	13	43%	17	57%
- NJ 47	13	15	28	1	13	14	50%	11	39%	17	61%
- NJ 77	13	14	27		10	10	37%	10	37%	17	63%
- Co 552	13	9	22		12	12	55%	9	41%	13	59%
- Co. 555	10	10	20		8	8	40%	8	40%	12	60%
- Co. 553	10	8	18		13	13	72%	15	83%	3	17%
- Co. 655	7	6	13		5	5	38%	7	54%	6	46%
- Co. 670	7	6	13		6	6	46%	9	69%	4	31%
- Co. 347	5	7	12		10	10	83%	9	75%	3	25%
- Co. 606	3	7	10		5	5	50%	6	60%	4	40%
- NJ 55	3	5	8	1	5	6	75%	5	63%	3	38%
- NJ 56	4	3	7		6	6	86%	3	43%	4	57%
- Co. 619	3	4	7		3	3	43%	6	86%	1	14%
- Co. 559	3	3	6			3	50%	5	83%	1	17%
- Co. 674	4	2	6			4	67%	5	83%	1	17%
Chestnut	16	10	26		10	10	38%	5	19%	21	81%
Landis	2	5	7		3	3	43%	3	43%	4	57%
Walnut	3	4	7		1	1	14%	5	71%	2	29%

+ Includes all State and Federal routes, and county roads with 6 or more accidents in the 2 year period

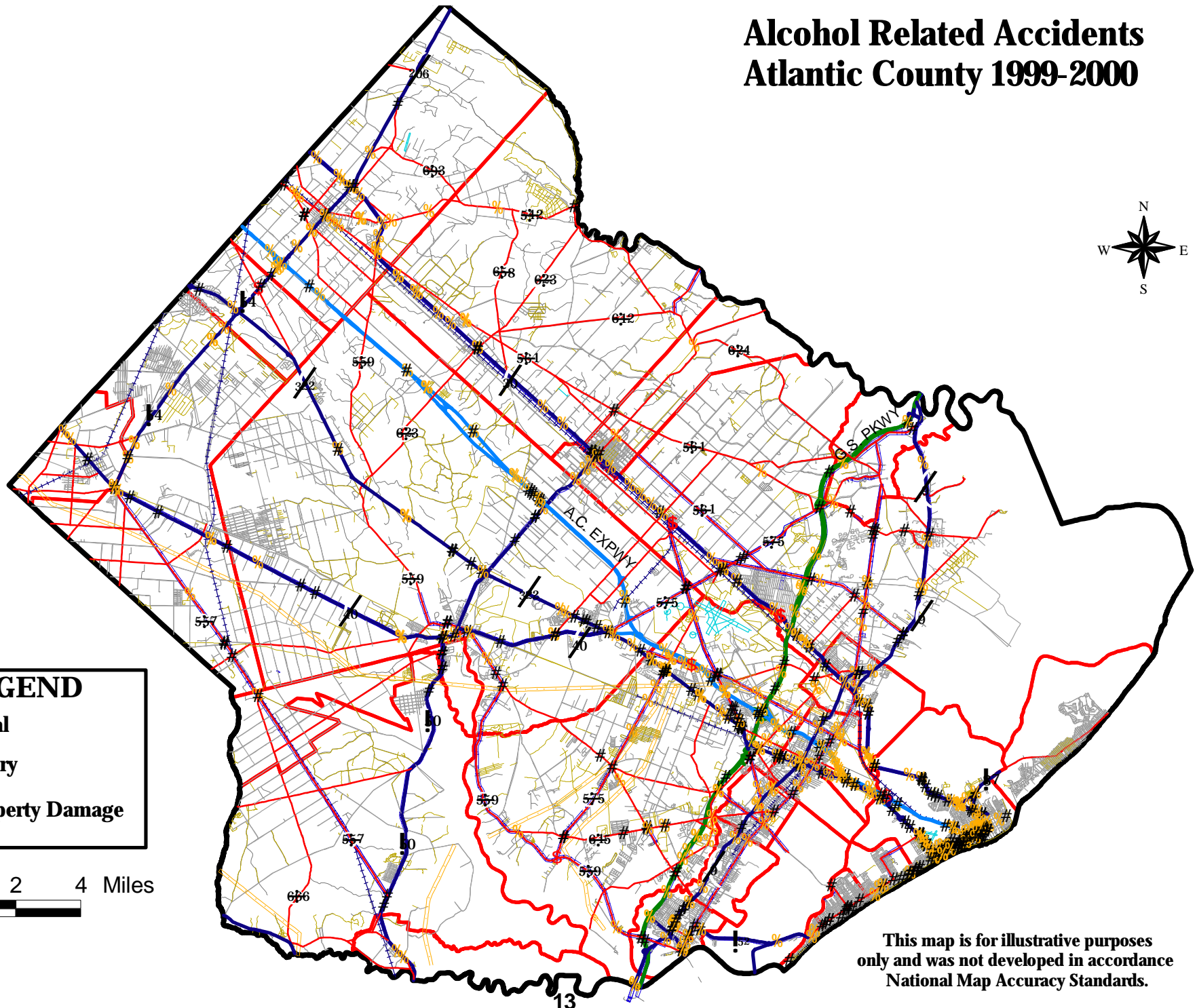
* One vehicle crashes vs. collisions involving 2 or more vehicles

Alcohol Related Accidents Atlantic County 1999-2000



LEGEND

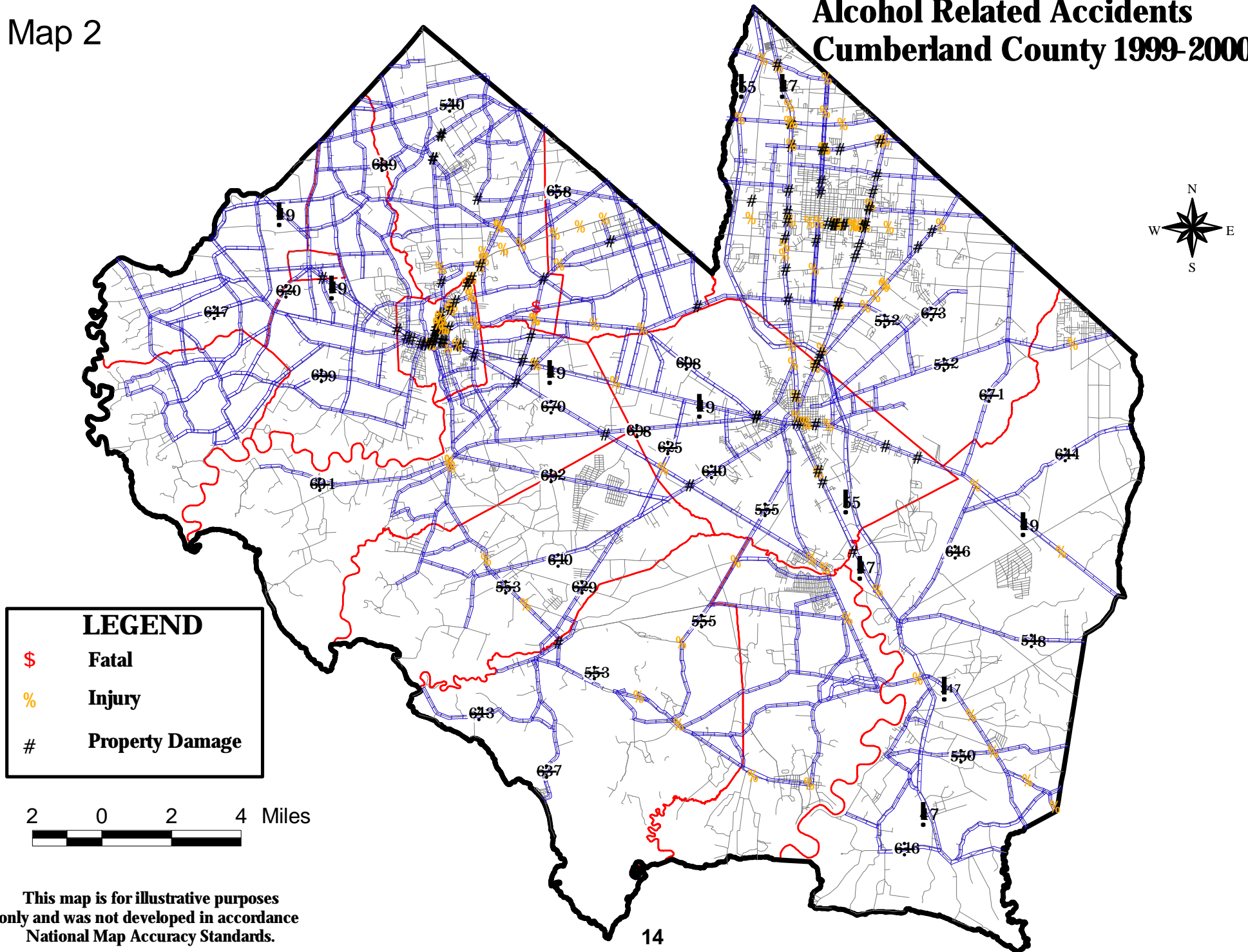
- \$ Fatal
- % Injury
- # Property Damage



This map is for illustrative purposes only and was not developed in accordance National Map Accuracy Standards.

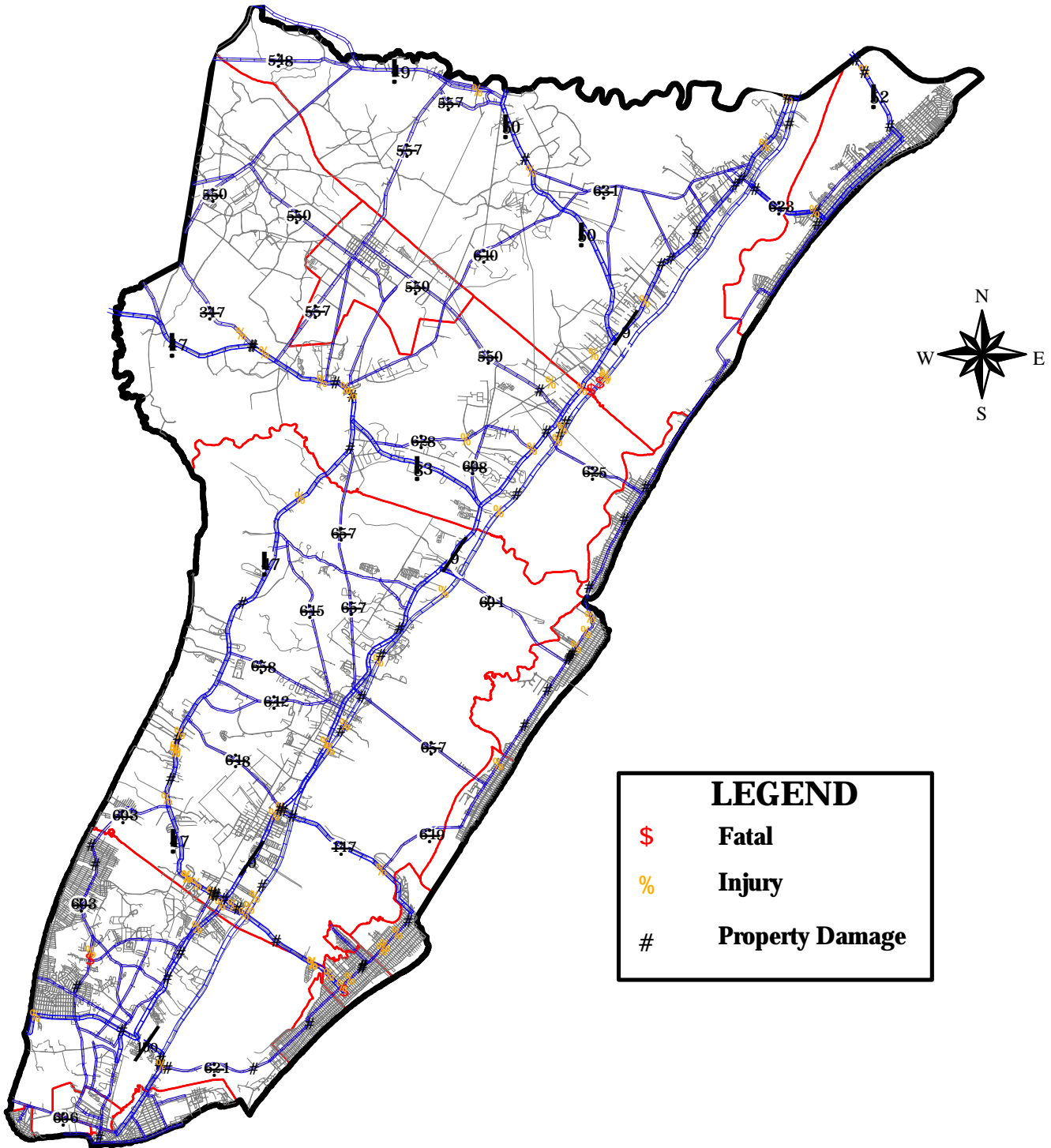
Map 2

Alcohol Related Accidents Cumberland County 1999-2000



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Alcohol Related Accidents Cape May County 1999-2000



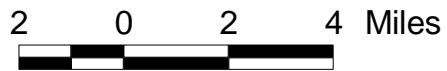
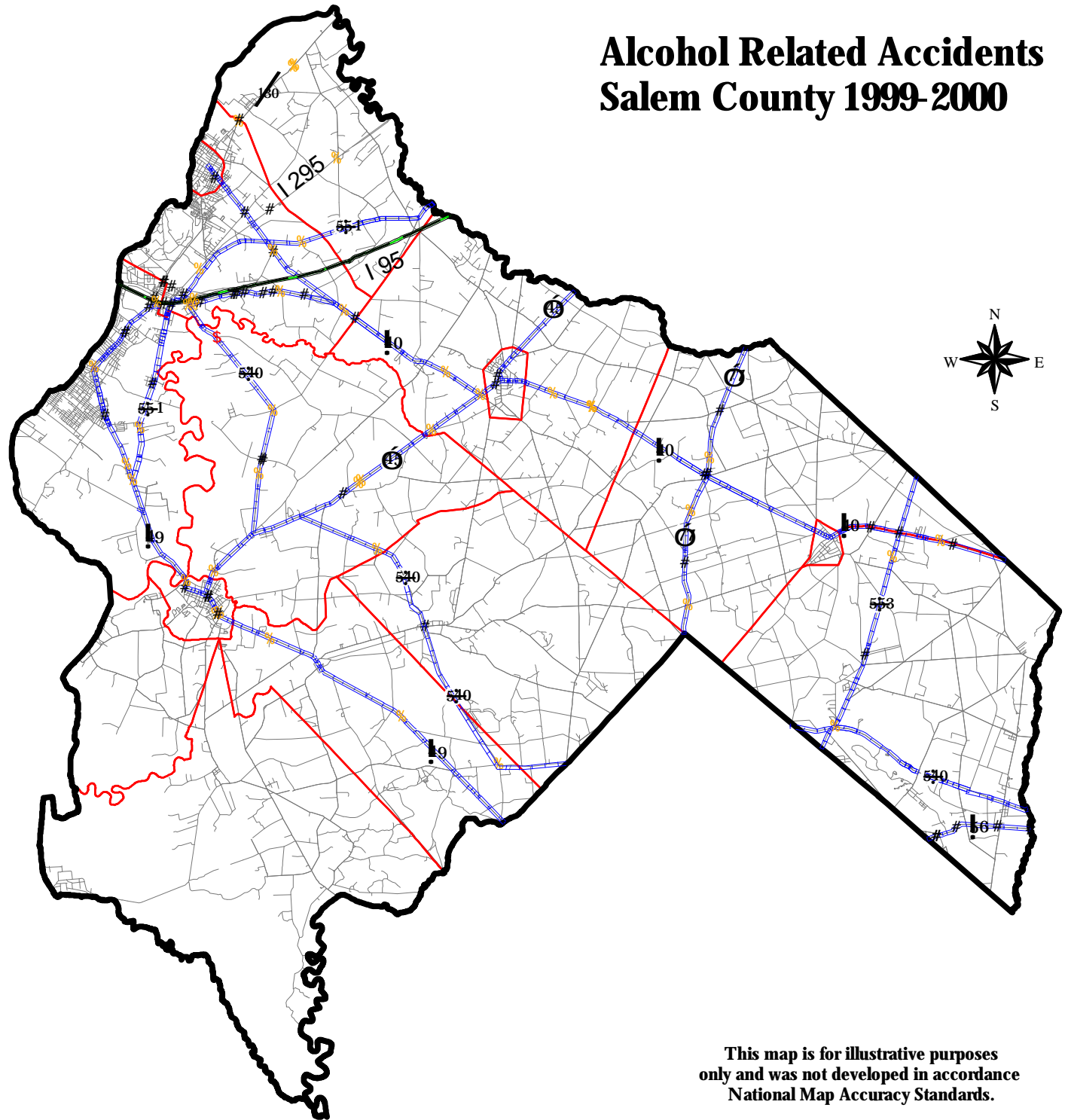
2 0 2 4 Miles

This map is for illustrative purposes only and was not developed in accordance National Map Accuracy Standards.

Alcohol Related Accidents Salem County 1999-2000

LEGEND

- \$ Fatal
- % Injury
- # Property Damage



This map is for illustrative purposes only and was not developed in accordance with National Map Accuracy Standards.