

# Roadway Related Tort Liability and Risk Management

5<sup>th</sup> Edition

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THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

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# CHAPTER 1 Introduction

*This training material has been prepared to address the tort liability problems faced by the Kentucky Transportation Cabinet and Kentucky local governments. The manual defines the problem by reviewing the national picture of generally growing numbers of suits and escalating financial losses from suits against highway agencies.*

*The manual also sets out solutions, and reviews actions, which can decrease the exposure of highway agencies to these suits. This risk management concept is emphasized throughout the manual.*

## The Duty

The function of government is to provide security and services for its citizens. Transportation is one of the services which governmental officials and employees are charged with providing. The goal of transportation should be the safe and efficient movement of people and goods, within reasonable fiscal constraints.

While providing transportation services, the government is not the absolute insurer of the safety of a highway user. The total resources of any government are limited, and it would not be realistic to expect that the bulk of all funding be devoted to keeping the roads in an absolutely sound and safe condition. However, the courts have consistently held that governments are required to maintain streets and roads in a reasonably safe manner. Failure to do so may result in liability if a user suffers injury.

The Kentucky Transportation Cabinet and local governmental units are charged with providing and maintaining reasonably safe travel-ways. As such, they must be aware of the possibility of suits. Employees of these agencies should also realize that their personal actions might lead to exposure for their agencies.

## The Problem

Suits alleging that governmental negligence caused traffic crashes are increasing at an alarming rate. As a result, many highway agencies have found that their insurance costs are skyrocketing. Many jurisdictions have found their insurance policies cancelled, or have elected to become self-insured in an effort to control costs.

In general, highway agencies have not known how to respond to this perplexing situation. The legal system is complex and difficult to understand. The threat of more suits exists on every side, and the potential for future losses is staggering.

Some states have been successful in addressing tort liability through education of their employees, through aggressive action by the state attorney general's office in fighting suits, through increased emphasis on safety programs and through other techniques.

This manual will review techniques that some states have found successful in limiting tort exposure and court losses. Some of the techniques are simple to adopt but others may require changes in existing policies and concentrated efforts on the parts of the employees. No

techniques work for every single agency. The best course of action is for each highway agency to review its tort exposure and to select activities that provide the right level of risk management for their current situation.

The first order of business in designing a risk management program is to understand the nature of the problem. The next portion of this chapter explains the number of suits occurring across the United States and the general trend of increasing losses in the courtroom.

## The National Picture

In the late 1970's, the Administrative Legal Subcommittee of the American Association of State Highway and Transportation Officials (AASHTO) conducted a nationwide survey to measure the growing tort liability problem. This survey was published (1) in 1978. AASHTO repeated the survey in 1979, 1981, 1983, 1987, and 1988. The surveys were very comprehensive, dealing with topics like loss of sovereign immunity, number of claims filed, type of insurance coverage, legal grounds for suits, and financial losses.

Because AASHTO is a collection of state highway agencies, the surveys dealt exclusively with the tort situation at the state level. The questionnaire in any year provided a snapshot of the state highway agency tort situation. The reports could be compared from year to year to identify trends and changes in tort liability. For example, the data showed that the number of tort claims grew from about 2,000 in 1972 to an estimated 27,000 in 1987 (2). The number of states reporting that they possessed full sovereign immunity dropped from 31% to 12% between 1978 and 1986 (3). The variation in types of claims from state to state was documented, and possible reasons for these changes were outlined (4).

The AASHTO surveys, as supplemented through telephone surveys by the authors, provide excellent data for understanding the national picture. Trends in the number of claims and in financial losses will be discussed in the next portion of this paper.

### Number of Claims and Suits

The number of claims and suits filed against state transportation agencies is reflected in Table 1-1. All data prior to 1988 were taken from surveys by AASHTO. The data for 1988, 1989, and 1990 were gathered by the authors during a 1991 survey conducted at the University of Alabama.

The table covers the ten-year period prior to the survey. Five states received more than 1,000 claims each in 1990, and at least fourteen states received more than 500 claims each. The largest number of claims occurred in Pennsylvania with 6,013. This continued a trend. The Pennsylvania Department of Transportation averaged 6,128 claims per year for the eight years previous to the survey.

**Table 1-1, Tort Claims and Suits Files Against State Transportation Agencies**

State	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
AL	263	172		173	265	311	342		502	555
AK	37	63								
AZ	293	214		319	359	412	517	500	674	758
AR	170	165		148	137	182	125	473	507	514
CA	523	444	3390	4068	5099	4934	6012	3831	2639	3269
CO	89	126				950		829	890	718
CT	900	1200						785	743	963
DE							2			
FL	92	73	625	726	766	810	1822	2808	1192	1347
GA										
HI								62	50	41
ID	223	193	233	273	328	243		241	261	276
IL	45	114			1357	1299	1251	1148	1158	1184
IN	607	773	881	256	135	136	147	685	936	1163
IA	184	182	211	256	242	371	319	397	329	321
KS	11	12		18	16			11	15	8
KY								647	616	
LA	448	514		517	585	623	593	3298	431	416
ME	28	6				16	6	4	14	6
MD										
MA	150	166						212	212	212
MI								171	173	219
MN	133	181	507	244	285	277	262	220	243	326
MS			7	12	8	10	10			
MO	27	39	29	28	32	34	31	404	464	712
MT								387	431	396
NE	63	92								
NV								164	176	223
NH	26	24		12	21	16	16	13	34	27
NJ										
NM	20	30						524	596	532
NY	326			344	384	364	363	472	374	484
NC								2185	1830	
ND								0	0	0
OH	130	128	143	202	258	294	229	228	221	281
OK	8	7	11	15	15	307	427	658	295	
OR	466	588		504	730	594	557	599	872	876
PA			6502	6368	6100	6082	5941	5763	6256	6013
RI	100	100								
SC	319	372						412	418	443
SD	0	0				3	3	207	212	168
TN		400			45	111	552	89	118	128
TX	58	69	81	75	92	106	125	137	119	108
UT	16	4		805	791	969	1004	434	588	4934
VT	90	90						97	122	95
VA				24	28	41	57			
WA	64	88						900	888	841
WV	308	228	176	234	285	311	350	767	900	659
WI				125	136	129	80	212	199	165
WY	55	72		16	28	21	22	95	121	114



The claims in Table 1-1 are those reported by the states. Not all of the states responded to the survey in any given year and only a few states responded to every AASHTO survey. The lowest level of reporting was about one-quarter of the states in 1983. The highest level was about three-quarters of the states in 1982 and 1990. To overcome this irregular and incomplete reporting, the authors prepared maximum and minimum estimates of the total number of claims. These estimates are reflected in Table 1-2.

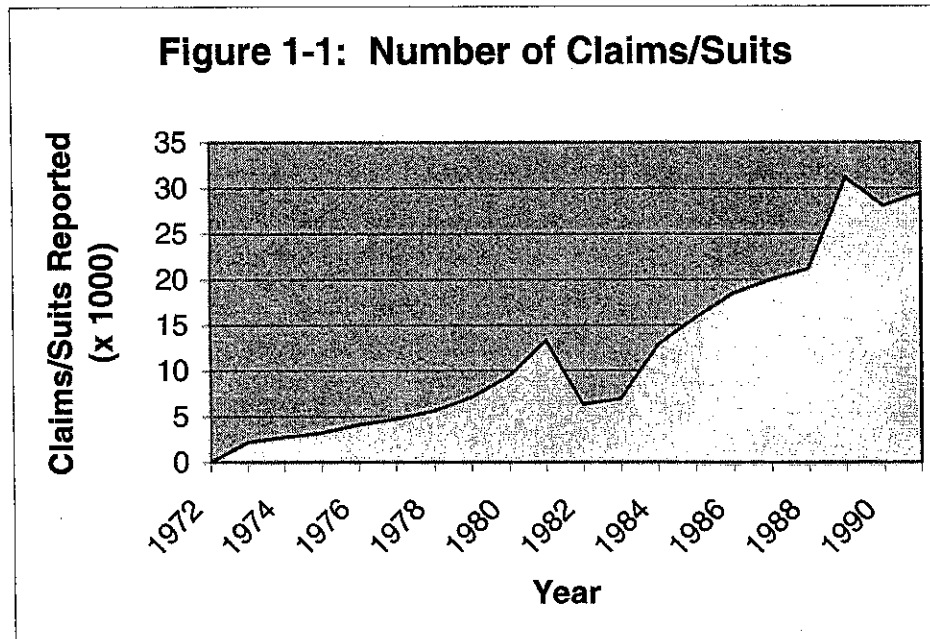
The initial AASHTO survey in 1978 asked the states to tabulate claims as early as 1972. These values are shown in Table 1-2. After 1981, the table reflects the authors' estimates of minimum and maximum claims, 29,000 and 32,900 respectively. The estimated range is reasonably narrow, indicating good correlation between the two procedures utilized for the estimates.

The data in Table 1-2 have been plotted on Figure 1 to illustrate the trend. The average of maximum and minimum estimates was plotted for 1981-90. The shape of the curve is a parabola, which means that the rate of growth is increasing with time. Since 1972, the increase in the number of claims and suits has averaged slightly more than 16% per year. In other words, the growth curve in this time period was equivalent to a 16% compound interest rate.

**Table 1-2, Summary of Reported And Estimated Data**

Year	Claims/Suits (x 1000)			Settlements/Judgments (\$ Millions)		
	Reported	Estimated		Reported	Estimated	
		Minimum	Maximum		Minimum	Maximum
1972	2.2					
1973	2.7					
1974	3.2			9.0		
1975	4.1			6.3		
1976	4.7			12.4		
1977	5.6			11.1		
1978	7.1			15.9		
1979	9.4			16.0		
1980	13.3			36.0		
1981	6.3	12.5	13.8	22.6	37.2	40.9
1982	6.9	12.5	15.1	24.6	39.2	47.4
1983	12.8	16.8	20.6	82.9	104.3	117.8
1984	15.8	18.4	23.5	47.2	122.7	127.1
1985	18.5	18.6	25.0	104.2	175.2	236.5
1986	20.0	21.1	28.8	65.4	137.1	187.8
1987	21.2	25.1	29.6	94.2	165.6	195.4
1988	31.2	31.8	33.5	101.2	107.2	153.9
1989	28.1	28.5	29.5	119.9	126.1	208.4
1990	29.5	32.9	35.0	127.3	133.8	227.5

Note: For 1972-1980, 100% of states participated in survey. After 1980, participation was less than 100%, so estimates were prepared to represent full reporting.



The states that responded to the survey have received a total of 234,200 claims since 1972. Since some states did not respond to the AASHTO questionnaires, the true number of claims for all states for all years is undoubtedly much higher. A more reasonable value is estimated by the authors to be more than 310,000 claims in nineteen years.

### Settlements and Judgments

Reported settlement and judgment amounts may be found in Table 1-3. For 1990 about 70% of the states responded to the author's survey and indicated a total of approximately \$120 million in tort settlements and judgments. California indicated that more than \$36 million was devoted to closing tort claims and suits. The second highest amount was experienced in New York, with losses of almost \$18 million, followed closely by Louisiana at about the same level. Michigan and Pennsylvania each had about 15 million dollars in losses.

**Table 1-3, Amounts (\$ x 1000) of Settlements and Judgments By Year**

State	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
AL	85	50		95	56	108	81	156	191	92
AK	81	99								
AZ	2518	484		1930	1030	1770	2820	1903	4307	7348
AR	233	150		153	78	110	156	247		114
CA	5265	5184	4565	4565	7391	14596	21744	21172	33872	36199
CO								275	85	26
CT	30	45						1292	1173	783
DE										
FL			4179	773	742	80	104	3661	4161	4028
GA										
HI								2811	212	1295
ID	299	288	304	326	794	345	236	122	103	98
IL	519	662			500	487	188	206	663	712
IN	2292	2699	3476	1801	1851	2685	1684	2221	3035	3771
IA	1165	443	503	10735	2423	3101	1219	1566	461	270
KS	26	4		220	306			450	250	50
KY				396	935	455	84	326	102	
LA	3295	3650			44275	11341	27811	4341	19217	17840
ME	1	25				14	1103			25
MD										
MA	244	142								
MI								12145	17343	15563
MN	114	658	218	774	488	419	541	44	72	27
MS										
MO	11	11	8	8	12	21	286	140	236	167
MT								452	391	370
NE	3	5								
NV								32	62	33
NH	11	7						65	4	
NJ							2000			
NM								150	108	56
NY				7500	15600	9700	11400	12289	7728	17933
NC	53	216		222	502			7269	1102	
ND								0	0	0
OH	343	89	98	206	2544	1417	1876	3967	354	229
OK	3					135	100	200	420	
OR	339	408		415	227	176	97	409	330	366
PA	3630	7000	12000	15000	21600	12500	17370	15588	18210	14773
RI										
SC	363	311					95	1499	970	324
SD								45	50	114
TN					7	230	1328			
TX	191	430	139	138	170	141	42	23	33	5
UT	126	145		1400	2300	1800	1700	531	1073	1066
VT	5	8						163	270	71
VA				56	341	335	17			
WA	1323	1365						5174	3162	3353
WV			57437					223	67	20
WI				29	45	36	86	78	44	202
WY	13	3		505	28	181	6	6	1	0



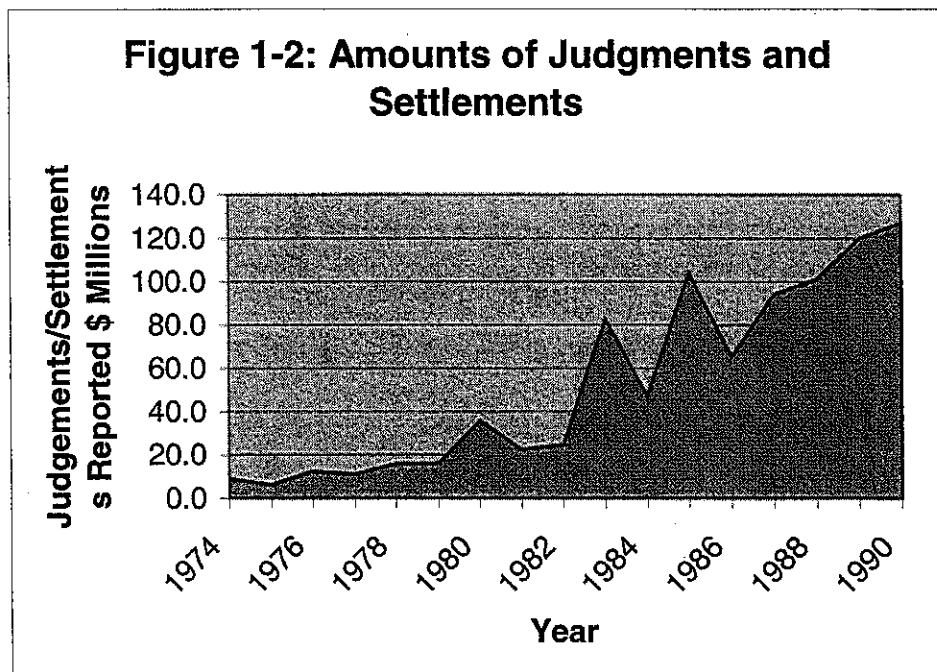
Between 1972 and 1990, the states responding to the survey lost \$880 million in judgments and settlements. When the effects of incomplete reporting are considered, a conservative estimate of total tort payout is between \$1.2 billion and \$1.7 billion for state highway agencies over the eighteen-year period.

Using procedures discussed previously, the authors estimated that a total of \$134 million to \$228 million was devoted to settling tort cases in 1990. This represents only state-level highway agencies. Local highway agencies are thought to have experienced about the same number of claims and losses as state agencies (4). If so, nationwide losses can be estimated at \$268 million to \$456 million for 1990.

In addition to settlements and judgments, the states also devote a considerable amount of money to the defense of tort issues. When court costs, attorneys salaries and fees, expert witness fees, employees time spent preparing defenses, giving depositions and appearing in court, and other costs are considered, the states devoted at least \$60 million to defense costs. This means that total 1990 tort expenses range from a low estimate of \$195 million to a high estimate of \$290 million for state highway agencies. These numbers may be doubled to include the effects of suits against local highway agencies.

Even with the limitations to the accuracy of this data, it is reasonable to conclude that tort actions against highway agencies in 1990 may be conservatively estimated to have cost between \$400 million and \$600 million. The authors feel that it may be stated with reasonable certainty that these suits cost the U.S. taxpayer at least one-half billion dollars.

Reported losses have been plotted on Figure 2, along with the authors' estimates of full reporting for years following 1981. Although this curve is irregular in nature, the general shape should be familiar to the reader by now. The trend is for continuing growth in financial losses due to these suits.



## Types of Claims

The types of claims vary from state to state. The preferences of tort attorneys, the magnitude of previous awards and the character of the highway system all come into play.

To illustrate the diversity in the types of claims, data was taken from Louisiana records. The number of claims filed, and the amount of reimbursement requested from Louisiana are displayed in Table 1-4. During a five-year period, over 1,000 claims were filed in this state. No more than 16% of the claims fell into any one general category.

**Table 1-4, Louisiana DOT Summary of Claims  
Related to Highway Tort Liability for '79-'83**

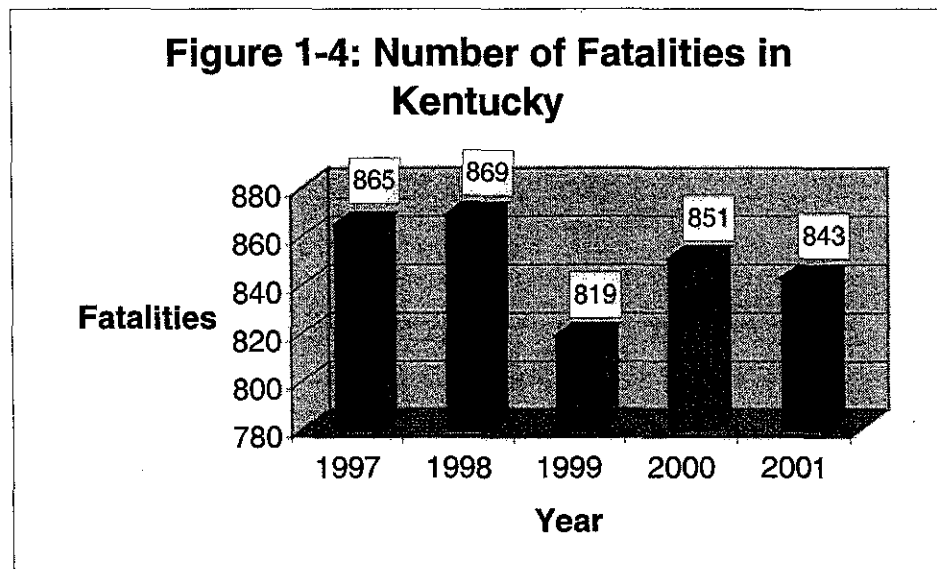
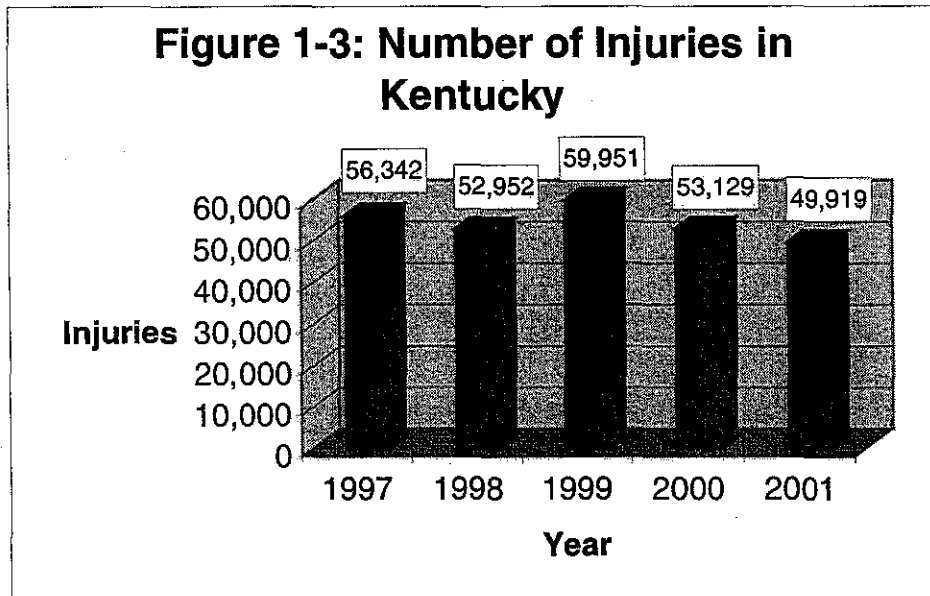
<u>Condition</u>	<u>Claim Amount</u>	<u>No. of Claims</u>
Shoulder	\$203,935,706	175
Design, etc.	\$201,049,525	107
Surface	\$123,683,633	161
Work Site	\$121,102,215	107
Signs	\$94,664,421	96
Property	\$94,365,486	45
RR Crossing	\$59,835,430	39
Bridge	\$48,569,651	55
Drainage	\$48,569,651	16
Signal	\$36,309,772	126
Marking	\$29,136,161	26
Sight Distance	\$27,425,450	23
Traffic Control	\$26,125,700	7
Maintenance	\$24,816,773	28
Left Turn	\$10,893,211	18
Lighting	\$7,614,655	14
Equipment	\$6,400,870	4
Debris	\$6,386,497	13
Ferry	\$5,204,479	3
Mowing	\$4,062,350	4
Guardrail	\$3,511,109	6
Tunnel	\$2,350,000	1
Other	\$2,000,000	1
Steel Cable	\$1,110,000	2
DOTD Operator	\$227,000	1
Under - \$100,000	\$286,867	9

An understanding of the types of claims helps in designing a risk management program. An overview of primary claims topics is included in Chapter Five of this manual with data specific to Kentucky given in Chapters Four and Nine.

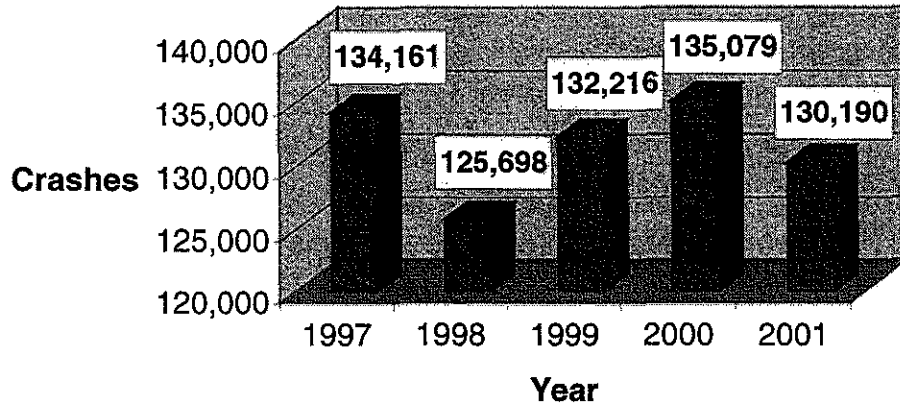


## Traffic Crash Magnitude and Costs

Over the last five years, there have been an average of approximately 131,000 traffic crashes per year in Kentucky (5). There has been a decrease in the rate of fatalities per million miles driven in the past few years. Figure 1-3 through 1-4 indicates other trends during this period. The reader may obtain a feel for the magnitude of the traffic collision problem by studying the figures.



**Figure 1-5: Number of Crashes in Kentucky**



### Cost of Crashes

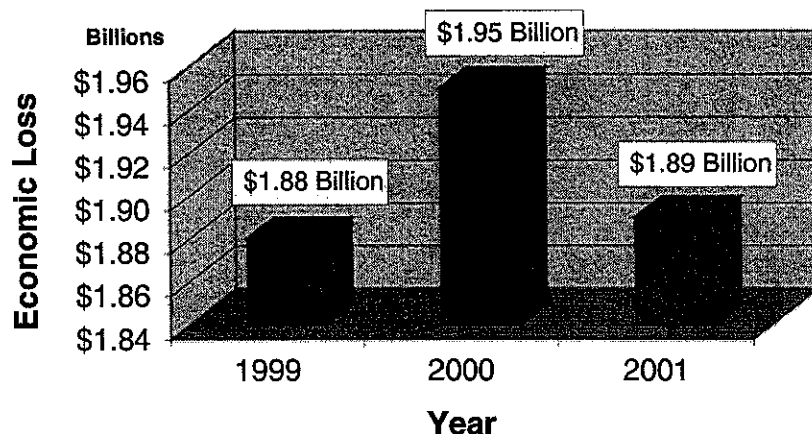
It is difficult to equate human life and suffering to money. After all, we could not eliminate all crashes, injuries and deaths by simply paying an amount of money, say a billion dollars per year, into a mystical fund. However, assigning such fiscal values allows us to compare hazardous locations, select improvement projects, etc., and to make rational decisions involving difficult issues. It appears to be necessary to use such a scale, and organizations like the National Safety Council and the National Highway Traffic Safety Administration routinely issue typical accident costs.

National Safety Council estimates of the real economic cost to society for a crash in 2001 were approximately:

Fatalities	\$1,000,000
Incapacitating Injuries	\$ 47,900
Non-Incapacitating Injuries	\$ 16,000
Possible Injuries	\$ 9,150
Property Damage	\$ 1,861

For example, if there are 100 property damage accidents in a downtown parking area in a given year, this represents \$186,100.

**Figure 1-6: Economic Loss In Kentucky**



Over the past five years, about 0.6% included fatalities, and 26.6% included injuries. FHWA-approved accident cost values were applied to Kentucky accident data to yield average cost per accident. A good approximation is that in 2001 crashes ended up costing the public an average of about \$14,000 per occurrence.

When subjected to a similar analysis, Kentucky lost about \$2 billion in 2001 (Figures 1-3 through 1-6). Comprehensive cost, which include the value of lost quality of life, was estimated as about \$5.3 billion in 2001 or about \$40,600 per crash. Individuals should be aware of the total economic costs of traffic crashes in terms of a pain, grief, and financial loss.

By now, the reader should be aware that the number of suits against highway agencies is still growing rapidly. The number of nationwide claims reached 33,000 to 35,000 and has increased at 16% per year since 1972.

There are more than 131,000 traffic crashes per year in Kentucky. Many of these include fatalities of disabling injuries. The cost of these crashes, both financial and in terms of human suffering, is substantial.

### Ostrich Syndrome

In spite of the obvious risk of liability and the associated major financial losses, governmental units at all levels have been slow to take action. The most apt comparison is that of an ostrich with its head buried in the sand. The problem will not go away on its own, and it is time to quit ignoring the issue! Accident victims and attorneys are not ganging up on the public agency and its employees. They are simply exercising the right to sue under the American legal system.

## Positive Action Is Called For

There is a need to take positive action to minimize risk, by making risk management an accepted component of day-to-day operation. Resources expended on such positive approaches can be far more effective than losses incurred in negative situations.

This manual will guide the participant in establishing a positive attitude toward risk management and in establishing a risk management program that is right for the situation faced by his or her agency.

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## CHAPTER 2      The Legal System

*This chapter has been written to provide a brief introduction to our current legal system. Key concepts and terminologies are discussed, and the legal procedures utilized in civil proceedings are outlined.*

### Terminology and Concepts

Familiarity with legal terminology is helpful in understanding the tort liability problem and potential solutions. The following discussion has been provided to assist managers and employees with transportation responsibility in gaining this familiarity.

#### Tort Liability

Simply stated, a tort is a civil wrong or injury. The person or persons to whom the wrongful action was directed may seek to regain their previous status through a suit. The person causing the wrong or injury may be liable for repayment for injuries or damages to property. Thus, the person performing the tort is liable for damages.

#### Risk Management

There are two recognized risk management techniques: risk control by minimizing exposure, and risk finance by purchasing insurance. The Insurance Company of North America has published an excellent summary of the topic, pointing out that regardless of which technique is used, the risk management process consists of four steps (1):

1. Identify the risks involved and evaluate them as required (e.g., frequency, probability, severity, predictability, etc.);
2. Determine the appropriate risk management methods (most suitable risk control technique, risk finance technique, or combination of the two, and the procedures, policies, and financial commitments necessary to administer the method);
3. Implement the appropriate methods; and
4. Monitor the methods and adjust as necessary.

If the customer elects to purchase insurance, he has decided to experience a minor loss (the insurance premium), rather than accept the risk of a catastrophic loss. In this case, the insurance company will measure the risk to establish a fair premium. The customer may reduce the premium by reducing the risk through good management practices. However, purchase of insurance does not guarantee that the purchaser will be completely free of traffic crash liability. The presence of a large policy may make the holder an attractive target for a suit.

Also, the Kentucky Supreme Court recently ruled that purchasing insurance was equivalent to waiving sovereign immunity in some instances.

If the customer elects the other option, risk control, then the proper method of minimizing liability calls for the use of risk management procedures to limit exposure to the extent possible. The principles of insurance risk assessment can be applied to liability for automobile crashes. This report will address that process, the approach to risk management that utilizes risk control by minimizing exposure.

## Negligence

Chapter Three will discuss specific Kentucky law applications of the negligence theory; however, a simple introduction is given here. Negligence is the failure to use reasonable care in dealing with others (2). Negligence in one form or another is usually the key to tort liability cases, and officials should understand its general principles and applications. In order to win a judgment on the ground of negligence, the plaintiff must prove the following (3): defendant had a duty to use reasonable care toward plaintiff, defendant breached that duty (negligence), defendant's negligence was the proximate cause of plaintiff's injury, plaintiff was not guilty of contributory negligence which caused the injury, and plaintiff incurred resulting damages.

Officials should be interested in breaking the chain of items to prohibit proof of their negligence. Not breaching their duty would be the ideal way to prevent losses in court. The best defense to a lawsuit is a preventative defense, by not ever allowing negligent situations to arise.

## Sovereign Immunity

Sovereign immunity began in England, where the King would not allow a suit against himself. English courts afforded the same protection to those who governed with the King's authority. By 1812 the principle was in use in the United States, and eventually became well established as follows (2):

1. no one can sue the government without the government's permission, and
2. even if the government could be sued, it is not responsible for the acts of its employees.

Originally, almost all states possessed sovereign immunity. By 1978, it was a valid defense in only 16 states (4). The courts had nullified or substantially weakened it in the other locations. Since that time, virtually all but a few states have lost their immunity.

## Governmental-Proprietary Distinction

British law distinguished between governmental actions. A municipal corporation could be held liable for operations which mainly benefitted the "proprietors" or owners of a money making venture. Actions which benefitted all inhabitants of a state were termed "governmental", and did not produce liability. The general principle was accepted in the U.S., but it has not been easy to distinguish between the two types of actions in practice. Use of the "governmental" distinction as a defense seems to be waning. It has become very difficult to distinguish the difference in governmental and proprietary functions, primarily because of overlapping and confusing court decisions.



## Discretionary and Ministerial Acts

Decisions resulting from exercise of discretionary authority are immune to liability (5). Ministerial actions are not immune. The term discretionary function means the power and duty to make a choice among valid alternatives; it requires a consideration of alternatives and the exercise of independent judgment in arriving at a decision (6). There is no hard and fast rule for conduct that one must take, but there are actions which are certainly wrong (such as capricious action or abuse of discretion). The courts have generally held that planning level decisions are discretionary in nature.

Ministerial duties usually involve clearly defined tasks not permitting the exercise of discretion. Decisions made at the operational level are usually viewed as ministerial by the courts.

Organizing improvement programs, assessing property values, selecting a highway route, designing highways, and carrying out these functions (in good faith) are examples of discretionary acts (7). On the other hand, routine repair and maintenance work, traffic operations, driving city vehicles, and similar actions are usually ministerial acts.

## Nuisance

Lewis indicates that nuisance is another legal avenue used by plaintiffs in highway crash related suits (8):

Nuisance, unlike negligence, does not deal with tortuous behavior or performance. A nuisance is a physical condition that unreasonably interferes with the rights of the public. When nuisance is the issue, the focus is on the effect of the alleged condition, rather than its cause. The essence of nuisance is a condition that is continuous or reoccurring and invades a public right. The issue is simply whether or not the condition existed and whether it interfered with the public's right of reasonably safe travel.

## Standard of Care

The critical issue in a trial may be whether or not the transportation agency had maintained roads and streets in a reasonably safe manner. The jury will be interested in establishing what standard of care would have been used by a reasonable man in providing this level of maintenance. If the agency's actions fell below this standard, then liability may be imputed.

Maintaining absolutely safe streets is not required, but it may be difficult to determine how close to this perfection the agency should have come. A subjective decision is usually necessary on the jury's part. Many items of information may be brought into court to help determine what should have been the prevailing standard of care (8). One of the strongest types of evidence will be the agency's own guidelines and policies. Regulations adopted by the agency may define in detail the minimum requirements. A reasonable person would follow such rules and orders. Other resources of information bearing on the standard of care include:

1. Agency directives and policies;
2. Directives of a superior agency;
3. Guidelines and policies of similar agencies;
4. Guides developed by national and professional organizations (such as, American Association of State Highway and Transportation Officials, Institute of Transportation Engineers, and National Association of County Engineers);
5. Textbooks and professional journals;
6. Research results; and
7. Expert witnesses

Where the Kentucky Transportation Cabinet has established a standard of care for a given activity, or where there is an accepted industry standard, it is important that employees seek to achieve that level of performance.

### Other Terminology

The layman tends to become confused by the myriad of "legalese" encountered in dealing with the law. Many legal terms are Latin derivations, and others are used so infrequently in daily conversation that their meanings are not certain. A glossary of these terms has been included in the appendix to assist the reader in understanding legal issues.

## The American Legal System

American law is unique, generally having its roots in the "common law" system of England. The system we now use has evolved over many years. It includes a dependence upon case law, wherein judges are allowed to decide cases based upon the precedent of prior cases of a similar nature, rather than being forced to abide by a strict system of codes.

The American system is not a single unified political entity. Rather, it operates on several levels (9):

1. Federal statutory law is enacted by the Congress of the United States, enforced by the President through the Executive branch of governmental agencies, and interpreted by United States District Courts, U. S. Circuit Courts of Appeals, and the U. S. Supreme Court.
2. State statutory law is enacted by state legislative bodies, enforced by the Governor and his executive agencies, and interpreted by state trial courts, appellate courts and the State Supreme Court.

3. Another historical American ethic, the concept of local control, has given rise to yet another court system, the municipal court. The municipal court ("city court") is the judicial arm of municipal government. The legislative equivalent is the City Council. The executive equivalent is the Mayor.

## Types of Law

There are a bewildering number of types of law. A few primary definitions are provided here for the benefit of the reader (9):

Statutory law is that body of law or collection of laws enacted by a legislative body.

Case law requires the court to interpret similar previous cases, to determine if they have set a precedent that affects the current case.

Legislative law is that enacted by a legislative body. The United States Constitution is the highest form.

Regulatory law is that enacted by a regulatory agency, usually more detailed provisions of a legislative enactment where the legislative body has delegated those details to the regulatory body.

Substantive law is that law which applies to the substance of any given issue.

Procedural law is that which applies to the procedures to be followed in pursuing a legal remedy.

Criminal Law is the enforcement of standards of conduct by the State, and the state is always a party to the criminal case.

Civil Law is the non-criminal law dealing with regulation of citizens in many ways.

## The Court System

The federal court system in the United States may be grouped into four distinct units (9):

1. U. S. District Court: This is the trial court of the U. S. court system. There is at least one and usually several districts in each state.
2. Circuit Courts of Appeals: There are 11 circuits, each with a court of appeals. This is intermediate between the trial court and the Supreme Court.
3. U. S. Supreme Court: The highest court in the country, this is an appellate court. As a practical matter, it is the ultimate decision forum for all legal questions, state and federal.

4. Specialty Courts: The maritime courts, patent courts, and U. S. Court of Claims handling contractual matters are representative of this category.

The state court system is entirely separate from the federal system. In Kentucky, there are several levels, as defined in the following paragraphs. In general, they are described below only as they apply to civil cases.

1. District Courts: (Kentucky Constitution 13). These are courts of limited jurisdiction (KRS 24A.110), which are used for Probate, such as filing of wills and other documents as public records, and Civil Courts where the controversy does not exceed \$2,500. Criminal matters, such as a misdemeanor or violation are heard here (KRS 24A.120).
2. Circuit Court: (Kentucky Constitution 112). This is the Court of original jurisdiction (KRS 23A.010).
3. Kentucky Court of Appeals: (Kentucky Constitution 111). This is an intermediate appellate Court.
4. Kentucky Supreme Court: (Kentucky Constitution 110). This is the ultimate decision forum in the state, the highest appellate jurisdiction.

## Procedures Used In Lawsuits

### Introduction

The United States system of government has selected courts as the primary means of resolving conflicts. The court is the judge and the judge is the court. The terms are used interchangeably. The basic function of the court is to apply law to the facts. The facts are determined by a jury, if one is used. If a jury is not used, the court also serves as the finder of the facts (10). In any lawsuit there are two parties involved, the plaintiff and the defendant. The plaintiff makes the original complaint against the other party. The other party thus becomes the defendant.

Engineers facing the threat of lawsuits should develop a legal mind set and should learn legal philosophy. Monitoring changes in legal theory, and understanding the rationale behind legal processes helps strengthen engineers' defenses against possible suits (11). A key to coping with litigation is understanding the role of engineers and attorneys. Both are highly educated, licensed to practice their professions and operate under fairly complete codes of ethics. Yet a basic difference is the degree of "truth" normally required in both of these professions. For an engineer, "truth" is related to design accuracy and standards, modified by conservative safety factors. For an attorney in a civil matter, truth rests on "a preponderance of evidence," theoretically only a small favorable margin (11). Trial attorneys are familiar with their adversarial roles, with public debate, and with the courtroom procedures. Engineers haven't been trained in these skills and are at a disadvantage when called to the courtroom and faced with lawyers trained to discredit them.

Engineers and attorneys also have different allegiances. Engineers are responsible to their clients and to society for their decisions. While attorneys are responsible to society according to a professional code, their primary duty is to their clients (11).

An attorney at law, is a person qualified in character and training to serve as an officer of the court in representing people, and advising people in regard to the law. Every lawyer is an advisor to his client, an advocate for his client, and a negotiator of compromise for this client. Trial lawyers are subdivided into plaintiff's counsel and defense counsel because of the different aspects of these activities. Office practice is another area, and is concerned with such matters as preparing documents, advising businesses, settling estates, etc. (10).

## Initiating A Trial

The purpose of pleadings in civil actions is to define the issues of the lawsuit. The plaintiff files with the clerk of the court a pleading usually called a complaint. The clerk then issues a summons (a warning or citation to appear in court) which, together with a copy of the complaint, is served on the defendant. The summons notifies him of the date by which he is required to either file a pleading in answer to the allegations of the complaint, or file some other pleading attacking the complaint (10). These steps are outlined in Table 2-1.

**Table 2-1, Starting a Legal Action In A Civil Trial**

1. **Filing of Complaint:** A Complaint is a document that asserts a legal claim to something. The lawsuit is begun either by the filing of the Complaint or service of same on the Defendant as the first step.
2. **Service of Complaint and Summons:** A Summons is a command to a party to either appear for a trial or to file a document of denial, which is called an "Answer."
3. **Filing of Answer:** After an Answer has been filed, the case is said to be at issue. This means that a comparison of the Complaint and Answer shows that there are disputes, factual or legal, which are at issue between the parties.
4. **Other Pleadings:** A Plaintiff may wish to file a Response, which is a document responding to the Answer. A Defendant may file a Counterclaim.

Source: Reference (9), page 4

During this stage of a trial, attorneys attempt to provide the soundest possible position for their clients, jockeying for the upper hand in the coming trial. At the request of the attorneys, the court may be asked to decide numerous pre-trial matters. These are presented to the Court in the form of motions (e.g., motion to dismiss based on the pleadings, motion to compel disclosure, motion to suppress evidence, etc.)(9).

Many lawsuits are decided without a trial even though the pleadings create issues of fact. These decisions result from the use of a procedure known as a summary judgment. This avoids trials when there is no genuine issue as to any material fact in dispute. If there are no facts in dispute, the only issue before the court is the legal effect of those facts. This can be decided without a trial.

## The Discovery Phase

Discovery is a process sanctioned by the court in which the attorneys representing each party gather information about the case. It is designed to reveal strengths and weaknesses of the case and thereby permits appraisal of settlement potential. In addition, it enables orderly and effective organization and presentation of the case (9). The court has the power to require an attorney for one party to respond to a request from the other party's attorney, under the threat of contempt of court.

There are four techniques commonly utilized to gather information during discovery:

1. **Interrogatories:** These consist of written questions about the case submitted by one party to the other party. The person responding is usually required to sign a sworn statement asserting that the answers are true (8).
2. **Requests for admissions:** Written statements of fact are addressed to one party by the other party, with a demand for admission of such statement of fact (9).
3. **Depositions:** Procedures have been established for oral questions to be asked by an attorney to other parties, witnesses, or experts, with the answers given under oath. A word-for-word transcript is made by a court reporter (9). If a deposition is being taken by the opposing side, a lawyer should be present to protect his client's interest, and to object to any questions that could not properly be admitted into court as evidence (2). Although a deposition cannot be introduced as evidence if the witness is present in court, it can be used to impeach testimony if the answers in court do not agree with the answers in the deposition (2).
4. **Production of documents:** This is a procedure for requesting and obtaining from the other party written material, such as correspondence, memoranda, logs, diaries and inspection sheets, plans, drawings, maps, photographs, and data, including computer storage (9).

The "Perry Mason" syndrome has disappeared from American courts. The element of dramatic courtroom surprise has been removed, mainly due to clearly defined discovery and pre-trial procedures. Attorneys usually know the strengths and weaknesses of their cases long before the trial begins. It is now common for lawsuits to be settled sometime prior to trial, based upon the attorneys' knowledge of the facts (and their knowledge of who would probably win the case).

## The Trial

As with the discovery phase, the actual court proceedings are now well defined in Kentucky. Table 2-2 outlines the required procedure.

## Table 2-2, Trial Sequence

- 1) Jury Selection (if a jury trial)
  - a) Challenges for cause
  - b) Preemptory challenges
- 2) Opening Statements of Counsel; (Not evidence)
- 3) Plaintiff's Case:
  - a) Witnesses: Direct Examination
  - b) Witnesses: Cross Examination
  - c) Documentary Evidence
- 4) Defendant's Case (same sequence as Plaintiff's)
- 5) Closing Statements of Counsel (not evidence)
- 6) Jury Instructions by Court
- 7) Jury deliberations and verdict
- 8) Judgment of Court

Source: Reference (9), page 6

The first step of the trial is to select the jury. Potential jurors are known as venire. They are selected by a method in which the court and the attorneys for each party examine the jurors' qualifications to ensure that they will be fair and impartial in reaching a verdict (10). Jury trials tend to be advantageous for plaintiffs. When the damages are great, a jury may be very sympathetic to the injured parties (8).

Next, the attorneys make opening statements, which are used to familiarize the jury with the essential facts in the case that each side expects to prove, so that the jury may understand the overall picture and the importance of each piece of evidence as presented (10).

After the opening statement, the plaintiff presents his evidence by means of examination of witnesses and production of documents and other exhibits. The party calling a witness questions him to establish facts about the case. After the party calling the witness has completed his direct examination, the other party is given the opportunity to cross-examine the witness. Cross-

examination is limited to those matters that were raised on direct examination. After cross-examination, the party calling the witness again has the opportunity of examining the witness, and this examination is called redirect examination. It is limited to those matters covered on cross-examination and is used to clarify matters raised on cross-examination. After redirect examination, the opposing party is allowed to re-cross-examination, with the corresponding limitation as to the scope of the questions.

The defense presents evidence after the plaintiffs evidence has been completed, using the same procedure. Finally, each side summarizes its case through closing arguments, and the judge outlines the points of law which are applicable to the case. The jury retires to determine the facts of the case, then delivers its verdict.

## Post-Trial Activities

One aspect of risk management that should not be overlooked occurs after the trial. The trial should be analyzed to see if a problem area has been identified, one that has the potential for additional future liability against the government.

It is important to collect data on the number of claims and losses, and the categories in which the losses occur. The objective is to classify functional areas and geographic locations that are most likely to generate lawsuits and large judgments. Once such problems are recognized, it makes sense to target resources into improving those facilities for which the agency is most vulnerable (8).

It is important for the expert witness to converse with the attorney after the case, and to have the attorney critique his performance. A good and conscientious lawyer will appreciate the call and be more than willing to give helpful hints toward better performance the next time around (12).

## Selecting Cases to Appeal

The basis for appealing a court decision is an alleged error in trial procedure or application of the law. The jurors finding of the facts of the case can not be appealed. Where the award is small, it is impractical to be concerned about an appeal, even if it appears that it could be won. Cases that result in large awards should be reviewed and; where there appears to be a valid basis for appeals, such action should be undertaken.

There is a more important criterion for appeal, however. Adverse court decisions can build up a body of case law that may substantially affect governmental liability in the transportation area. A well-conceived loss-mitigation program will carefully select those cases for appeal that will set adverse precedents (10). This approach may be far more beneficial in the long term than merely focusing on those cases involving large monetary verdicts.



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# CHAPTER 3      Tort Law In Kentucky

## Introduction

### General Negligence Laws

In order for there to be an actionable claim for negligence, three elements must be present; (1) duty and violation of the duty; (2) proximate cause; and (3) injury.

#### Duty

A duty is the standard of care that one person owes to another. It may include acts of omission as well as commission and varies according to the facts and circumstances of the situation.

The duty or standard of care owed to others is what determines the degree of the negligence. Ordinary negligence is the failure to exercise the care that a reasonable person would exercise in similar circumstances. Gross negligence however, is the failure to exercise even the slightest care and carries with it the possibility of punitive damages.

#### Proximate Cause

Proximate cause is the cause that leads to, and which might be expected to produce the result. It need not be the direct or immediate cause of injury, but must do more than merely furnish the condition or give rise to the occasion which made the injury possible. The test of whether a cause of an injury is the proximate cause is whether it is the natural and probable consequence of the negligent act (duty and violation of the duty) and involves some element of foreseeability. Obviously there can be more than one proximate cause of an accident as well as an intervening cause. An intervening cause, to relieve the original wrongdoer of liability to the victim, must be of highly extraordinary nature which is unforeseeable in character.

### Defenses

#### Contributory Negligence

The defense of contributory negligence is no longer applicable in Kentucky because of the Kentucky Supreme Court's 1984 decision of Hilen v. Hays, Ky., 673 S.W.2d 713 (1984). Prior to Hilen v. Hays, if a victim failed to use ordinary care for his own safety, he would be barred from any recovery from the original wrongdoer.

## Comparative Negligence

Hilen v. Hays made comparative negligence the law in Kentucky. Comparative negligence calls for liability of the parties for any particular injury in direct proportion to fault. This doctrine reduces the total amount of an award against a defendant in proportion to the relationship the injured person's own negligence bears to the total negligence that caused the injury or damage. Thus, a plaintiff can be negligent himself and still recover some award against a defendant.

## Negligence in Kentucky

Negligence law in Kentucky is rooted in the common law and in the Kentucky Constitution. Section 233 of the Kentucky Constitution adopted the common laws in force in Virginia as of June 1, 1792.

In addition to the negligence common law adopted through Section 233 of Kentucky's Constitution, there are other constitutional sections which insure a person's right to recover for another's negligence. Section 54 of the Kentucky Constitution provides that:

The general assembly shall have no power to limit the amount to be recovered for injuries resulting in death, or for injuries to person or property.

Furthermore, Section 241 states that:

Whenever the death of a person shall result from an injury inflicted by negligence or wrongful act, then in every such case, damages may be recovered for such death, from the corporations and persons so causing the same.

Finally, Section 14 says that:

All courts shall be open and every person, for an injury done him in his lands, goods, person or reputations, shall have remedy by due course of law, and right and justice administered without sale, denial or delay.

These sections of Kentucky's Constitution, when combined, mean that the legislature may not abolish common-law rights of action of injuries to the person caused by negligence. Saylor v. Hall, Ky., 497 S.W.2d 218 (1973).

This right to sue for recovery of damages resulting from negligence is tempered by Ky. Const. Section 231 and Kentucky common law whenever the wrongdoer is a state governmental entity. Section 231 grants the defense of sovereign immunity to negligence actions and is discussed more fully below.

# Sovereign Immunity

## History

The concept of sovereign immunity originated in the era of the divine right of kings when it was believed that a sovereign could do no wrong.

Kentucky has had a provision for sovereign immunity in each of its four constitutions of 1792, 1799, 1850 and 1891. With minor variations, each constitution stated that:

The general assembly may, by law, direct in what manner and in what courts suits may be brought against the commonwealth.

Section 230 of Kentucky's Constitution, a companion section to Section 231, compliments Section 231 by providing that:

No money shall be drawn from the state treasury but in pursuance of appropriations made by law.

The case of Foley Construction Company v. Ward, 375 S.W.2d 392 (1963) demonstrates that the Kentucky Supreme Court determines the applicability of state sovereign immunity by analyzing whether there is any fiscal impact on state funds if the plaintiff prevails and, if so, whether recovery from these funds is approved by the legislature. In Foley, the Supreme Court looked at whether the plaintiff could recover damages for breach of contract. The Court noted that "by this suit [The plaintiffs] seek to recover damages for an alleged breach of the contract." The Courts holding that sovereign immunity barred recovery is consistent with the basis behind sovereign immunity since the suit was not merely for enforcement of a contract, but for an expenditure from the state treasury for damages which had not been approved by the Legislature.

In Frederick v. University of Kentucky Medical Center, KY. App., 596 S.W.2d 30 (1979), the Kentucky Court of Appeals held that although the Legislature had established a fund out of which malpractice claims and judgments against the University of Kentucky Medical Center might be paid, the law establishing the fund did not specifically waive sovereign immunity as required by Section 231.

However, the Kentucky Supreme Court considered this same issue and reversed the Court of Appeal's ruling in Frederick. In Dunlap v. University of Kentucky Student Health Services, Ky., 716 S.W.2d 219 (1986), the Kentucky Supreme Court overruled Frederick and held that the Legislature had waived sovereign immunity by enacting the University of Kentucky Medical Center Malpractice Insurance Act. Unlike the Court of Appeals, Kentucky's Supreme Court found that the words of the Statute (KRS164.939) indicated that a limited "legislative waiver is plain in its meaning and intent." *Id.*, at 220. KRS 164.939 states that the legislative purpose of the act is to promote the health and general welfare of the people of the Commonwealth and that which public funds may be expended." By deciding Dunlap on the issue of whether there had been legislative approval for the expenditure of state funds for malpractice claims, the Kentucky Supreme Court continued to use the fiscal analysis in its determination that sovereign immunity did not apply in this situation. Since Dunlap sued the University of Kentucky Student Health

Service Clinic for monetary damages, the only issue before the Court was whether the Legislature had approved such payments.

The dissenting justices in Dunlap criticized the Supreme Court for setting a precedent for finding implied waivers of sovereign immunity even though Section 231 requires that the General Assembly specifically "direct in what manner and in what courts suits may be brought against the Commonwealth." Although technically correct, the dissenting justices' resolution of the case (in which sovereign immunity would have barred recovery) would have forced the court to consider abolishing sovereign immunity.

The Kentucky Supreme Court, in holding that the Legislature had consented for the University of Kentucky Medical Center to be sued, avoided the issue of whether state sovereign immunity should or could be judicially abolished. (The complete abolishment of the state's immunity by the courts was argued by Dunlap and by the Kentucky Trial Lawyer's Association, who filed an amicus brief in Dunlap.)

In Kentucky Center for the Arts Corp. v. Berns, Ky 801 S.W.2d 327 (1990) the Supreme Court faced the sovereign immunity question head on. The Court described the problem as

"the tension between our constitutional provisions, Kentucky Constitution Section 14, 54, and 241, protecting our citizens against legislative action to limit or deny access to the courts to pursue existing causes of action for personal injury and wrongful death, and our constitutional provision, Kentucky Constitution Section 231, interpreted through the years to constitutionalize the common law doctrine of sovereign immunity in suits brought against the Commonwealth".

Id., at 328\_29.

The court went on to confirm the relationship between Section 230 and 231 of the Kentucky Constitution and "ratified" sovereign immunity on the basis of protecting state funds.

However, the sovereign immunity accepted by the Supreme Court in Kentucky Center for the Arts is a very limited immunity applying

"only to those agencies which are under the direction and control of the central State government and are supported by monies which are disbursed by authority of the Commissioner of Finance out of the State treasury".

Id., at 331, citing Louisville & Jefferson Co. Metropolitan Sewer District v. Simpson, Ky., 730 S.W.2d 939 (1987).

After finding that the Kentucky Center for the Arts did not qualify under this test for sovereign immunity, the Supreme Court postponed the question of whether statutory authority to purchase insurance was a legislative waiver of immunity to a time when the governmental entity in question qualified for sovereign immunity protection. Although the court noted that KRS 44.073 (4) (enacted in 1986) states that "the purchase of liability insurance... shall not be construed as a waiver of sovereign immunity or privilege," the Justices gave an indication on where the Court

will stand on statutory authority for purchases as waivers of sovereign immunity. The opinion states that

Arguably, if the 1986 General Assembly meant to change the situation by enactment of KRS 44.073(14), it should have so stated with statutory language that immunity, where it exists, is not waived by the purchase of liability insurance even where, as here, the legislation expressly directs its purchase.  
Id., at 332.

It is probable that, unless the statute is amended as suggested by the Court, the purchase of insurance will be construed by the court as a waiver of sovereign immunity. (This has profound impact on state employees as will be discussed in subsequent sections.) The basis of this opinion rests on the Court's continued reliance on the relationship between Section 230 and 231 of the Kentucky Constitution. If an insurance company pays for the damages, the Court could justify a finding of waiver by saying that the money paid out is not coming from the state treasury and ignoring the fact that the State actually pays the premiums.

As a final note, the Supreme Court has recently reemphasized the Kentucky Center for the Arts test for what constitutes an agency protected by sovereign immunity and subject to Ky const. Section 231 in Calvert Investments Inc. v. Louisville and Jefferson County Metropolitan Sewer District, Ky., 805 S.W.2d 133 (1991). It is obvious from reading this opinion that although the Court acknowledges that sovereign immunity must be recognized in some instances, the Justices are not happy about doing so.

## Local Government Immunity

### Counties

Counties have long been considered an "arm of the state" and thus enjoyed sovereign immunity under Kentucky Constitution Section 231. As early as 1884 the courts extended this doctrine to Kentucky counties like state sovereign immunity, the immunity of counties could only be waived in negligence action by express provisions of the Legislature (1). The courts did, however, provide for the county to be sued on an express contract as early as 1909 and in nuisance cases on the theory that a nuisance may be such an invasion of the rights of an adjacent landowner as to amount to an injury and taking of property under section 242 of the Kentucky Constitution (2 and 3).

In 1955 the Kentucky Court recognized a Legislative waiver of "county" immunity pursuant to KRS 67.180, a statute which authorized, but did not require, counties to purchase insurance covering vehicles operated by counties (4). When a county purchased the insurance, the court said, it waived its immunity to the measure of the insurance policy. Similarly, in a case where a county failed to purchase Worker's Compensation insurance for its employees, the Courts declared that the county had not waived its immunity and was immune from a suit for damages (5).

In Ginter v. Montgomery, Ky., 327 S.W.2d 98 (1959), the court considered the effect of the Board of Claims Act on Counties. In Ginter, the court decided that even though the Act operates as a partial waiver of state immunity, it does not completely abrogate the doctrine as to the state and does not purport to waive any immunity as to local governments.

One recent Kentucky Supreme Court case in which the doctrine of sovereign immunity as applied to counties is considered is George M. Eady Co. v. Jefferson County, KY., 551 S.W.2d 571 (1977). The Court applied the doctrine and stated that the county was immune from suit for damages resulting from the failure of the county to procure right of way titles in time for Eady to perform excavation work it had contracted to do for the sewer district. Although there was a contract involved, the contract had a "no damages" clause in it. The Court stated that since the Legislature had not provided for counties to be sued for breach of contract (not to be confused with performance of a contract) as it had for the state, the court had to apply the doctrine and allow counties to "continue to enjoy their singular protection from the inroads of justice." Id., at 572.

Given the attitude of the court in the Eady case it would appear that, given the opportunity, the Kentucky courts would gladly find a waiver for the sovereign immunity doctrine as it applies to counties.

Counties currently have coverage through a self-insurance pool provided by the Kentucky Association of Counties. The latest information was that 114 of 118 eligible counties were participating in this pool. Fayette and Jefferson Counties are large enough to insure themselves. The premium for each county is based on exposure which considers many variables. This pool is reinsured to cover any large awards. Information is that there have been several lawsuits based on transportation issues.

### Urban-County Governments

The Kentucky Court of Appeals ruled in Hempel v Lexington Fayette Urban County Government, Ky. App., 641 S.W.2d 51 (1982) that an urban county government is not a city and retains the immunities of a county government. "It is, like a county government, an arm of the state entitled to the protective cloak of sovereign immunity." Id., at 53.

### Municipalities

Kentucky appears to have started without municipal immunity. In Prather v. City of Lexington, 52 Ky. (13 B.Mm.) 559 (1852), the court held that a city was liable in its corporate capacity, where the acts done would warrant a like action against an individual. By 1877, however, municipal immunity had found its way to Kentucky courts.

Twyman's Administrator v. Board of Councilman of Frankfort 117 KY. 518; 78 S.W. 446 (1904) is the first of an unbroken line of Kentucky cases which recognize municipal immunity. The Twyman court set out the state of municipal immunity at that time as follows:



So far as municipal corporations of any class, and however incorporated, exercise powers conferred upon them for purposes essentially public - purposes pertaining to the administration of general laws, made to enforce the general policy of the state - they should be deemed agencies of the state, and not subject to sue or be sued for any act or omission occurring while in the exercise of such power, unless by statute the action be given. Id., at 466.

In Gnau v. Louisville and Jefferson County Metropolitan Sewer District, Ky., 346 S.W.2d 755 (1961), the court considered the effect of the Board of Claims Act on municipal immunity. After finding that the sewer district was an independent corporation exercising a public function and not a "state agency", the Court held that the Board of Claims statute did not waive immunity for any government entities other than those which are under the direct control of the central state government. Thus municipalities retained immunity despite the passage of the Board of Claims Act.

Even though the court continued to uphold the immunity rule, rumblings of discontent began to be heard in 1958. Cases since 1964 were confusing and have often conflicted with one another.

The confusing nature of the cases since 1964 prompted the court in 1985 to decide Gas Service v. City of London, Ky., 687 S.W.2d 144 (1985). In Gas Service, the court held that municipal corporations are not immune from liability for ordinary torts, and carved out a narrow exception from this rule for a city's exercise of legislative, judicial, quasi-legislative or quasi-judicial functions. The Gas Service Court defined quasi-judicial and quasi-legislative functions as involving regulatory activity in which the government is not charged with having caused the injury, but only with having failed to prevent it by proper exercise of regulatory functions.

In applying the judicial/legislative exception to the cases decided since 1964, the Gas Service court said that in all but two, the functions carried out by municipal employees did not qualify for municipal immunity. The two that did qualify involved failure of employees of the government to inspect and regulate businesses and to enforce laws - activities which the court said fell under the quasi-judicial and "quasi-legislative" functions of government.

The legislative/judicial municipal protection exception stated in Gas Service assures "that lawyers for plaintiffs and defendants alike will have their work cut out for them in stitching together or unraveling the fabric of this latest judicial exception" (6). Unless and until the courts abolish municipal immunity without exception, application of the exceptions must be done on a case-by-case basis, with little guidance from the courts. If municipal immunity were completely abolished, perhaps the Legislature would finally be prodded into enacting a comprehensive governmental liability statute. Indeed, Justice Stephenson, in his dissent in the Gas Service case, stated:

The majority opinion will undoubtedly lead to bankruptcy of many municipalities, large and small. My only suggestion to city fathers is to run for the hills and seek help from the legislature. Id., at 153.

In 1988, the Kentucky Supreme Court decided that the Transit Authority of Northern Kentucky (TANK) was not entitled to the protections of sovereign immunity. Kestler v. Transit Auth. of N. Ky., Ky., 758 S.W.2d 38 (1988). The Court determined that the mass transit authorities' enabling statute, KRS 96A.101, etseq., is a statute which provides for the mandatory purchase of liability insurance by the transit authority. Kestler, 758 S.W.2d at 39; KRS 96A.180. The Court held that the foregoing statute "clearly contemplates a limited waiver of governmental immunity to the extent of the insurance coverage." Kestler, 758 S.W.2d at 40.

The court declined to apply KRS 44.072, the statute upon which TANK relied for its position that the purchase of insurance should not be construed as a waiver of immunity, because KRS 44.072 was enacted July 15, 1986, a year and one-half after the accident which prompted the claim against TANK. Kestler, 758 S.W.2d at 40. Because the Court did not hold KRS 44.072 to be retroactive, it had no application to the claim against TANK. Kestler, 758 S.W.2d at 40.

A year later, the Supreme Court held that the purchase of liability insurance coverage as authorized by statute by the Green River District Health department constituted a limited waiver of Sovereign immunity. Green River Health Dept v. Wigginton, Ky., 764 S.W.2d 475 (1989). In Wigginton, suit was filed against the Health Department after an infant had sustained brain damage at birth as a result of negligent treatment by an employee of the Health Department. Wigginton, 764 S.W.2d at 475. The Health Department was covered by a \$1.5 million liability insurance policy, purchased as authorized by statute. Wigginton, 764 S.W.2d at 475; KRS 212.890(4). The Supreme Court agreed with the court of Appeals that stated:

We agree with the circuit court that the appellee [the health department] is protected by sovereign immunity. However, KRS 212.890(4) allows the appellee to be sued and a final judgment obtained which shall measure the liability of its insurance carrier to the appellants.

Wigginton, 764 S.W.2d at 476.

With respect to KRS 44.072, the court in Wigginton, like in Kestler, held that that section expressly provides for no retroactive application. Wigginton, 764 S.W. 2d at 478. Thus, KRS 44.072 again was not considered by the Supreme Court.

In 1991, the Kentucky Supreme Court held that the Louisville & Jefferson County Metropolitan Sewer District was subject to liability as a municipal corporation. Calvert Investments v. Louisville & Jefferson County Metro. Sewer Dist., 805 S.W. 2d 133 (1991). Significantly, however, the Court in Calvert stated:

The distinction we have made in Kentucky cases between municipal corporations and counties, and municipal corporations and school districts, is recognized and commented on in Restatement, Second, Torts, Section 895C, comment a, as follows:

Under the governmental structure of some States, however certain types of geographic subdivisions, such as counties and school districts, have been held to be entitled to any broader immunity (either from suit or from tort liability) that has been retained by the state itself, rather than being subjected to the type of liability that is applicable to cities and towns .... The classification is a matter of governmental structure and statutory language for the particular state,.....

Thus, while we in Kentucky have treated tort liability for school districts and counties differently from other local entities, this difference may be explained by their particular status. School districts were created by the General Assembly and exist only as a means for the state to carry out the General Assembly's constitutional duty to 'provide for an efficient system of common schools throughout the state.' See Kentucky Constitution Section 186; Rose v Council for Better Education, Ky., 790 S.W.2d 186 (1989). Counties are unincorporated political subdivisions of the state, preexisting its formation, whose existence is provided for constitutionally in Section 63, 64 and 65 of the Kentucky constitution. Both MSD and the Board of Health Classify as municipal corporations liable for their torts without disturbing precedent extending state sovereign immunity to counties and school districts as represented by Cullinan v. Jefferson County, [Ky., 418 S.W. 407 (1967)].  
Cullinan, 805 S.W.2d at 137\_38.

In Cullinan, the plaintiff stepped into a hole and fractured his ankle while playing on county school premises. Cullinan n, 418 S.W.2d at 408. The appellant filed suit against Jefferson County, Jefferson County Board of Education, and Jefferson County Playground and Recreation Board. Cullinan, 418 S.W.2d at 407\_08. The court, in ruling that the county was protected from liability by sovereign immunity, stated that "Jefferson County is a political subdivision of the commonwealth..., and such is an arm of the state government. It, too, is clothed with the same sovereign immunity [as the state]." Cullinan, 418 S.W.2d at 408 (citing Monroe County v. Rouse, Ky., 274 S.W.2d 477 (1955); Ginter v. Montgomery County, Ky., 327 S.W.2d 98 (1959)).

Though the court was not faced with the specific issue of whether the purchase of liability insurance by a county constitutes a waiver of the county's sovereign immunity, the court's statement in Calvert that "MSD and the Board of Health classify as municipal corporations liable for their torts without disturbing precedent extending state sovereign immunity to counties and school districts as represented by Cullinan v. Jefferson Co., ..." tends to support the view that counties, unlike municipal corporations, continue to enjoy sovereign immunity.

In summary, municipalities do not maintain sovereign immunity as a defense. Many municipalities (almost 40 percent) are insured through the Kentucky Municipal Risk Management Association which is associated with the Kentucky League of Cities. Other

municipalities have private insurance carriers while others are self-insured. Claims related to transportation issues are common in municipalities.

## Board Of Claims

### Purpose of Board of Claims

The Board of Claims, created in KRS 44.070, allows an injured party to receive up to \$200,000 for injuries sustained at the hands of a negligent state agency or state employee. The Board is a limited waiver of the state's sovereign immunity from suit and the exclusive remedy available to one injured by the "Commonwealth, any of its departments or agencies, or any of its officers, agents or employees while acting within the scope of their employment". The Board of Claims Act created a board to investigate, take proof and compensate persons for the damages sustained as a result of negligence on the part of the commonwealth or its agents acting within the scope of their employment. The legislation originally provided only for claims arising from the negligent design and construction of highways but has been amended to compensate persons for damages sustained to either person or property as a proximate result of negligence on the part of the commonwealth or any of its agencies, departments, or cabinets.

Before creating the Board of Claims the General Assembly granted named persons the right to sue the state by passing a special resolution. One hundred eighty-five such special resolutions were introduced in the 1946 session of the General Assembly, the session that enacted the Board of Claims Act. The Board of Claims statute is now held to preclude special legislative authorizations to sue, thus the Board is the only avenue available for making a negligent claim against the state. Commonwealth v. McCoun, Ky., 313 S.W.2d 585 (1958).

The Board of Claims had its origin in an act of 1946 establishing a Highway Board of Claims with jurisdiction over claims for injuries to person or property due to "negligence in highways by the Department of Highways" (Chapter 189, 1946 Acts). The Act limited recovery to \$1,000. The statutes, now KRS 44.070 to KRS 44.160, have been periodically amended to increase the maximum recovery. Last amended in 2000 (Chapter 304, Section 4, Acts 2000) the Board of Claims Act provides for the maximum recovery per occurrence (\$350,000) to be equally divided among claimants provided that no individual claimant may recover more than \$200,000. Currently, the minimum claim amount is \$100 (Chapter 304, Section 1, Acts 2000).

In establishing the Board of Claims as an administrative agency the General Assembly intended to provide a method for processing claims against the Commonwealth with a minimum of formality and delay. However, its administrative proceedings must be fair and just. KRS 44.080. The powers of the Board to make an award are limited to those cases in which it finds that the damages were caused by the negligence of the Commonwealth. KRS 44.070. Timely filing is a condition precedent to any award. KRS 44.110 provides that a claim must be filed within one year from the date of the occurrence or the Board is without authority to make an award. The one-year statute of limitations has been held to apply over the two years provision of the Motor Vehicle Reparations Act. Commonwealth, Transportation Cabinet, Department of Highways v Micheal Abner, Ky., 810 S.W.2d 504 (1991).

An issue that is often questioned is whether a state agency can contract away its liability to a contractor. According to current state law an agency cannot contract away its liability because it is a power bestowed upon them by this legislative act. However, it is noted in KRS 44.073 (subsection 15) that a state agency would not be liable for the acts of independent contractors.

## Powers of the Board of Claims

The powers of the Board of Claims to make an award are limited to those cases in which it finds that the damages were proximately caused by the negligence of the Commonwealth or its agent. The Board is the statutorily designated finder of fact with exclusive authority to resolve any disputed issue of fact. Its decision or award may be overturned by a court when it is supported by substantial evidence and a circuit court may not substitute its own judgment for that of the Board. KRS 44.120 and KRS 44.140. In any case, a circuit court may not itself make an award but is limited to remanding the case to the Board only if the court finds that the Board's decision was in excess of its powers, the award was procured by fraud, the award did not conform to statute, or that the Board's findings did not support an award.

The Board of Claims applies only to agencies of the state. The Kentucky Supreme Court in 1961 ruled that the term "agencies" meant "those agencies which are under the direction and control of the central state government and are supported by monies which are disbursed by authority out of the state treasury." This includes many agencies of the state as well as the parties that represent the agencies. It should be noted that any action against a municipality cannot be filed under this act.

When making its decision the Board must apply the general law of negligence, which includes the doctrine of comparative negligence in appropriate cases KRS 44.073(10). It has exclusive authority to determine the amount of an award subject only to a requirement that the amount be supported by substantial evidence and within the statutory maximum recovery. While maximum recovery is usually presented as a straightforward issue, the doctrine of comparative negligence can have a significant impact upon an award. For example, if one were to assume a claimant had shown injury in the amount of \$1 million and that the Board determined 20% of the injury was a result of the Commonwealth's negligence, then the claimant would be entitled to 20% of \$1 million as a compensated injury by the Commonwealth. Applying this amount to the statutory limitation the claimant would be entitled to a full maximum recovery of \$200,000. This is supported by the case of Truman v. Kentucky Board of Claims (No.85-CA-2317-MR).

A recent case has provided case law for the Board of Claims' review on negligence cases (Commonwealth, Transportation Cabinet, Department of Highways v. Kenneth Shadrick, Floyd Circuit Court No. 93-CI-149). In this case, a driver lost control of her vehicle and impacted a dump truck parked on the Department's right-of-way in front of a junkyard. The Department had sent a notice to the junkyard owner to clear the right-of-way. The Supreme Court stated that they declined to extend the law to the point of guaranteeing that every right-of-way will be completely free of all obstructions, whether permanent or transitory, for motorists who operate their vehicles into that area of the roadway. The court held that it would be "unreasonable and impractical to hold the Department responsible for the negligence of others."

Finally, the Board's Orders, Awards and Judgments are enforced by the Franklin Circuit Court as authorized by KRS 44.130.

## 1986 Amendments to the Board of Claims Statutes

### 1. Collateral or Dependent Claims Not Allowed

KRS 44.070(1) states in part that the Commonwealth "shall not be liable for collateral or dependent claims which are dependent on loss to another and not the claimant. The Board of Claims has interpreted this language to mean that the amount of insurance available to a claimant is deducted from any potential award amount. Also, the Board has a policy that insurance companies who pay for a claimant's damages cannot sue the state in a Board of Claims action to recover their payout. This latter interpretation was accepted by the Court of Appeals on May 31, 1991 when it decided Richerson, et al. v. Transportation Cabinet, et al., Kentucky Supreme Court No. 91-SC-000546, in the Transportation Cabinet's favor. However, the claimants have filed a Motion for Discretionary Review with the Supreme court which was denied. The Transportation Cabinet will move to publish the Court of Appeals opinion. The ruling means that insurance companies cannot sue in the Board of Claims to recover their payouts to claimants. This was supported in Poole Truck Line v. Transportation Cabinet, Court of Appeals No. 94-CA-0752-MR.

The outcome of the Richerson case will not only affect the agencies of state government but also the individual employees. Many lawsuits brought against employees in their individual capacity are brought by insurance companies whose claims for contribution have been dismissed by the Board of Claims as being collateral or dependent claims.

### 2. Reduction of Award by Extraneous Proceeds

The provisions of KRS 44.070(1) also contain language which requires that

"any damage claim awarded shall be reduced by the amount of payments received or right to receive payment from worker's compensation insurance, social security programs, unemployment insurance programs, medical, disability or life insurance programs or other federal or state or private program designed to supplement income or pay claimants expenses or damages incurred".

The issues that have arisen from this language are: what are "private programs designed to supplement income or pay claimant's expenses or damages incurred?" and, does the payment amount from such programs reduce the actual damages amount incurred by the claimant or does it reduce the amount that is awarded by the Board of Claims? Of course claimants take the position that insurance payments received by them are not the "private programs" described in the statute and, even if they are, the insurance proceeds should be taken off the total damage incurred rather than the award amount.

For example, suppose there is a wrongful death claim resulting from a two-car accident where the estate of the decedent brings a claim against the Transportation Cabinet for negligent road design. The estate can prove damages of \$1,000,000 but has received "PIP" benefits of \$10,000. The question is whether the \$10,000 benefit should be taken off the \$1,000,000 damage amount or off the award. If it is taken off the \$1,000,000 and the Transportation Cabinet is held to be only 25% liable the cabinet is still faced with the maximum \$200,000 award ( $\$1,000,000 - \$10,000 = \$990,000 \times .25 = \$247,500$ ). If the "PIP" benefits are taken off the award and the Cabinet is held to be 25% liable, the Cabinet will pay \$240,000 ( $\$1,000,000 \times .25 = \$250,000$ . the maximum award is  $\$200,000 - \$10,000 = \$190,000$ ).

The case of Roof v. Transportation Cabinet contained these very issues. The Supreme Court held that the statutory maximum award can be reduced by basic reparation benefits received by the driver.

In Central Kentucky Drying Company, Inc. v. Commonwealth of Kentucky, 858 S.W. 2d 165 (Ky. 1993), the Supreme Court looked at whether amounts paid by a settling joint tortfeasor should be treated as a setoff against damages as specified in KRS 44.070(1). This section of the Board of Claims Act allows a damage award against the Commonwealth to be reduced by the amount paid to the claimant by enumerated sources. According to the Court, payments by a settling joint tortfeasor are not one of such enumerated sources. It is the Court's opinion that "other federal or state or private programs designed to supplement income or pay claimants' expenses or damages incurred" does not encompass settlement by a tortfeasor or its insurer. A general rule of statutory construction states that enumeration of particular items excludes other items which are not specifically mentioned. Louisville Water Co. v. Wells, Ky.App., 664 S.W. 2d 525 (1984). Therefore, the Court held that payments by a settling joint tortfeasor shall not be treated as an offset against a damage award in a Board of Claims action. As a result, it is possible for a claimant to recover damages from a settling joint tortfeasor in addition to the negligent state agency.

### 3. Suits Against Individual State Employees

#### (a) History and Present Status

Prior to the 1986 amendments, it was well settled law that the Board of Claims Act did not apply to claims against state employees in their individual capacity. Spellman v. Beechum, Ky., 365 S.W.2d 33 (1962). A claimant had an option insofar as the matter of liability of a state employee was concerned, to proceed to judgment in the Board of Claims or file suit against a negligent state employee individually. Slucher v. Miracle, Ky., 382 S.W.2d 867 (1964). An action filed with the Board of Claims and continued until there was an award precluded the right to sue a state employee in any other form. Dardeen v. Greyhound Corp, Ky., 412 S.W.2d 585 (1967); KRS 44.160. Therefore, after an award had been entered by the Board, a statutory immunity protected a state employee from further responsibility for his negligence.

The 1986 General Assembly attempted to vest the Board of Claims with exclusive jurisdiction over all negligent claims against state employees acting within the scope of their employment. Further, the amendments preclude a claimant's option of filing suit against a state employee unless and until the Board enters a judgment that it does not have jurisdiction over the claim because the employee was not acting within the scope of his authority. KRS 44.090 authorizes the Commonwealth to provide legal representation for state employees for "any claim filed with the board."

These efforts on behalf of the state employee have proven to be unsuccessful since their passage in 1986. Combined with the other 1986 amendments to the Board of Claims statutes and recent interpretations by the Kentucky Supreme Court, they have actually made state employees more vulnerable to being sued individually.

In 1989 the Kentucky Supreme Court decided three cases, all brought under the pre\_1986 amended Board of Claims Act, which made it obvious that employee immunity from suit would not survive a constitutional test. In Guffey v. Cann Ky., 766 S.W.2d 55 (1989), University of Louisville v. O'Bannon, Ky., 770 S.W. 2d 215 (1989) and Gould v. O'Bannon, Ky., 770S.W.2d 220 (1989), the Court paid lip service to the fact that the cases were brought under the old law and went on to state that "a Statute which purports to extend sovereign immunity to the personal liability of its employees violates Sections 14, 54 and 241 of the Kentucky Constitution." Gould v. O'Bannon, supra at 222. Following this cue, the Court of Appeals declared the provisions of KRS 44. 073 to be unconstitutional in Blue v. Purcell, Ky. App., 793 S.W.2d 823 (1989) in a case where the claim clearly arose after the effective date of the 1986 Amendments.

Although the Supreme court has not itself decided a state employee negligence case where the claim arose after July 15, 1986, the Court has decided Kentucky Center for the Arts Corp, v. Berns, supra, and Calvert Investments, Inc. v. Louisville and Jefferson County Metropolitan Sewer District, supra, in which the Justices make clear their position that sovereign immunity may only be applied to state government agencies which receive their funding directly from the state treasury.

These decisions could leave the state employee in a precarious position. Because insurance companies cannot recover their subrogation claims in the Board of Claims, they may choose to sue the employee involved. Also, this could occur if awards in the Board are reduced by other payments received by national recovery. There has been an increase in the number of suits brought against individual state employees.

#### b. Defenses

The only defenses in suits filed against employees individually (besides the assertion that there is no negligence) are KRS 44.160 precludes suit against an



employee where the Board of Claims has already entered a judgment. The Supreme Court (as the old Court of Appeals) ruled that an individual action against a state employee operating a dump truck was barred under this section where the Board of Claims had already entered an award. Dardeen v. Greyhound Corp., Ky., 412 S.W.2d 585 (1967). The Court stated of KRS 44.160 that "we find nothing unconstitutional in this statute". at 587.

As for the immunity defense, the Supreme Court has indicated that

"there is a distinction between discretionary and ministerial functions of state employees. Discretionary acts will result in liability when negligently performed.

...

State officers have frequently been held responsible for their ministerial conduct".

Gould v. O'Bannon, supra at 221-22.

Roughly speaking, a discretionary act is one which is done in the performance of lawful duties requiring personal deliberation, decision, judgment or planning (such, as policy decisions). 63A Am.Jur.2d Public officers and Employees Section 362. A ministerial act can be defined as a duty which is absolute, certain and imperative, in involving merely execution of a specific duty arising from fixed and designated facts, which is performed without regard to the exercise of the employee's own judgment. Id., Section 301. An example of a ministerial act would be entering information into a computer.

### c. Legal Representation

There is no uniform statewide policy on providing legal counsel for employees sued in their individual capacity. KRS 44.090 only authorizes representation of the employee before the Board of Claims. However, KRS 12.211 authorizes the Attorney General to provide for the defense of a state employee in a civil lawsuit so long as the employee was acting within the Governor to promulgate regulations to provide such defense by various methods. (By letter dated March 21, 1991, the Attorney General has delegated the authority for the Transportation Cabinet provided that the decision to do so is done by the Cabinet's budget. So long as the employee sued was acting within the scope of his authority, the Transportation Cabinet routinely provides legal defense for its employees sued individually).

### d. Judgment Against Individual Employees

Providing legal defense is a far cry from paying any judgment rendered against an individual employee. The state cannot pay such court judgments since the payments would be in violation of Sections 320 and 231 of the Kentucky Constitution. Even if there was a statute authorizing the payment of these judgments, it would likely be unconstitutional as violating Section 3 ("no grant of exclusive, separate public emoluments or privileges shall be made to any man or

set of men") and Section 241 (damages for wrongful death may be recovered "from the corporations and persons so causing the same") of the Kentucky Constitution. This was apparently the fate of former KRS 12.214, repealed in 1978, which provided that judgments against individual employees were to be paid out of the general fund.

If the state employee were working for any other employer, he could bring his employer (the state) into the lawsuit under the doctrine of respondeat Superior. This legal maneuver says that where an employee acts negligently while within the scope of his employment, his employer can also be held liable. Unfortunately this theory does not work against the state because the state has sovereign immunity.

Whether an employee sued individually could bring a claim against the state for contribution in the Board of Claims once a civil judgment has been rendered against him remains to be seen. However, the one year statute of limitations for filing an action in the Board would have to be considered as well as whether such a claim would be a "collateral or dependent claim" prohibited under KRS 44.070 or the type of claim which would violate Sections 3 and 241 of the Kentucky constitution.

#### e. Recommendations

Obviously the General Assembly will be faced with the problem of state employee liability in the near future. It appears that there are several legislative steps which may be taken to lessen the burden on individual employees and allow them to perform their assigned tasks without the fear that a lawsuit against them could mean personal financial risk.

1. Make the provisions of KRS 44.055, Insuring State Vehicles, mandatory rather than discretionary.
2. Authorize the purchase of general liability insurance for state employees while performing ministerial duties (or possibly the reimbursement of individual employee purchases). Provide in the legislation that the purchase of such insurance shall not be construed as a waiver of sovereign immunity against the commonwealth using language recommended in Kentucky Center for the Arts Corp. v. Berns, supra.
3. Remove the prohibition in KRS 44.070 against recovery by insurance companies for "collateral or dependent" claims.

## REFERENCES

1. Moberly v. Carter County, 5 Ky. Law Rep. 694, 12 Ky. Opin. 485 (1884)
2. Marion County v. Revis & McChord, 133 Ky. 477, 118 S.W. 309 (1909).
3. Brown v. Marshall County, 394 F. 2d 498 (6th Cir. 1968).
4. Monroe County v. Rouse, Ky., 274 S.W.2d 477 (1955).
5. Ginter v. Montgomery County, KY., 327 S.W.2d 98 (1959)
6. Snell, "A plea for a Comprehensive Governmental Liability Statute", 74 Kv.L.J. 521.



## CHAPTER 4      **Summary of Board of Claims Cases in Kentucky**

*One method of reducing the liability risk for government agencies and providing safer highways is to integrate information from highway case law into decision-making about the highway system. A method that can be used to obtain such information is to review tort claims in Kentucky to determine the basis of each claim.*

*The cases that relate to specific areas, such as pavement condition or roadside barriers, can be studied to detect trends or characteristics in the accidents that led to the lawsuits. The claims can also be analyzed as a function of variables such as geographical location in the state, amount of claim, and amount of award. The results of such an analysis can be used in the development of an effective risk management program. Claims filed against the Kentucky Transportation Cabinet must be filed through a Board of Claims procedure.*

*Therefore, by accessing this data, an analysis of these claims can be performed. The assumption is that the types of claims filed against the Transportation Cabinet would be similar to that filed against other government agencies. Following is a discussion of an analysis of claims made against the Kentucky Transportation Cabinet.*

### Procedure

A summary of the claims made against the Kentucky Transportation Cabinet (KyTC) through the Board of Claims was prepared for 1981 through 2001. The claims were located by searching records maintained by the Board of Claims and the KyTC.

Information was obtained from files maintained by the Board of Claims and KyTC. One source of information was the claim form filed when making a claim. Information concerning the location and description of the accident and the basis for the claim is given on the claim form. The KyTC also maintains a computer file giving summary information for each claim. This file was used to obtain a portion of the information. The Board of Claims maintains a listing of all claims with an indication of the agency against which the claim was filed. This listing also includes the amount of the claim, the resolution of the claim, and a brief description of the basis of the claim. When more detailed information was desired for a claim, the case file for that claim was reviewed.

Various information was coded onto a computer file for each claim. This information included the date of the claim, the county where the action on which the claim was based occurred, the reason for the claim, the amount sought, the decision, and the date of the decision. The reasons for the claims were classified into several categories and are listed in the summary tables. The reasons for the claims were classified into specific categories for one summary and then combined into broader categories for another analysis.

The Board of Claims information was summarized. Examples of the types of analyses included summaries of the total number and dollar amount of claims and awards by year as well as the

number and dollar amount of claims and awards as a function of such variables as type of claim, county, and highway district.

All claims under \$1,000 are investigated by the administrative staff of the Board of Claims. If the claim is less than \$500, a Findings of Fact is issued to the claimant (within 45 days of the date that receipt of claim is acknowledged) along with an Opinion and Order either awarding or denying the claim. If the claim is for between \$500 and \$1,000, the findings as to negligence are reported to all parties within the 45-day time period. Any party may then request a hearing before the Board. All claims over \$1,000 are investigated by the agency concerned. The agency is given 30 days to answer the charges in writing to the Board and to the claimant. If the response filed by the affected agency admits liability, the case is submitted to the Board. If the response filed by the affected agency denies negligence, or questions the amount of damages, in a claim of \$1,000 or greater, a hearing before a hearing officer is scheduled.

## Results

The total number and amount of Board of Claims actions against the Department of Highways (DOH) of KyTC are presented in Table 4-1. The dollar amount for any claim was limited to the maximum allowed by the Kentucky Revised Statutes (KRS). For example, claims for over one million dollars have been received; however, the maximum dollar amount possible under the KRS in effect at the time of the claim was used for the claim amount in the analysis since this amount represented the exposure of the KyTC. The total number of claims ranged from a minimum of 255 in 1981 to a maximum of 713 in 1990. There has been an average of 507 claims for the 21 years of 1981 through 2001. The maximum number of claims were filed in the three-year period of 1988 through 1990 with a general decreasing trend since 1990.

**Table 4-1, Total Number and Amount of Board of Claims  
Actions Against Transportation Cabinet**

<b>YEAR</b>	<b>NUMBER</b>	<b>DOLLAR AMOUNT*</b>	<b>AVERAGE CLAIM</b>
1981	255	\$1,359,206	\$5,330
1982	377	\$2,027,072	\$5,377
1983	432	\$1,479,683	\$3,425
1984	522	\$1,795,958	\$3,441
1985	630	\$2,839,702	\$4,507
1986	577	\$3,957,450	\$6,859
1987	580	\$6,341,047	\$10,933
1988	647	\$5,650,428	\$8,733
1989	616	\$6,284,142	\$10,202
1990	713	\$7,109,354	\$9,971
1991	576	\$6,262,259	\$10,872
1992	544	\$5,191,547	\$9,543
1993	454	\$4,599,475	\$10,131
1994	540	\$6,437,180	\$11,921
1995	382	\$4,995,892	\$13,078
1996	519	\$5,884,609	\$11,338
1997	459	\$5,331,493	\$11,615
1998	379	\$3,961,140	\$10,452
1999	597	\$3,462,845	\$5,800
2000	325	\$3,869,107	\$11,905
2001	529	\$3,169,056	\$5,991

\*The dollar amount for any claim was limited to the maximum allowed by the Kentucky Revised Statutes.

While the total dollar amount of claims has increased from 1981 to 2001, there has been a decrease in the total claim amount since the peak of over \$7 million in 1990. The average for 21 years is about \$4.4 million per year. This average was exceeded from 1987 through 1997 but was under this average before 1987 and after 1997. The average amount claimed for 1987 through 1997 is almost 6.0 million dollars per year. The increase beginning in 1987 would be related to the increase in the maximum allowable claim amount permitted by KRS which occurred in July 1986. There was a substantial increase in the average claim amount beginning in 1987. The average claim amount for the time period of 1987 through 1997 is about \$11,000. The reduction in claim amount in the most recent years may be related to factors such as more work conducted by contract and the lack of large awards which discourage additional claims.

A general summary of the results of the Board of Claims cases is presented in Table 4-2. At the time of this summary, a decision had been made in 98 percent of the claims. While some payment was provided in approximately one half of the cases, only 14 percent of the claim amount was paid (for claims in which a decision has been made). The payment given each year

represents the amount paid for claims filed that year. For example, if a claim was filed in 1995 but was not paid until 1998, the payment would be reflected for 1995. The smaller amounts of total payments in the most recent years are the result of the large number of unresolved cases filed during those years with large claim amounts. The high payment in 1985 resulted from two cases that accounted for \$700,000 in payments. The lower percent of claim amount paid in the most recent years results from the dismissal of several claims with large claim amounts. The percentages may change when decisions are made on numerous additional claims with large claim amounts.

**Table 4-2, Results Of Board Of Claims Cases**

Year	Number of Claims	Total Amount Claimed	Claims Decided		Percent of claims with payment*	Total Payment*	Percent Claim Amount Paid*
			Number	Percent			
1981	255	\$1,359,206	255	100.0	53	\$433,104	32
1982	377	\$2,027,072	377	100.0	64	\$618,491	31
1983	432	\$1,479,683	432	100.0	66	\$425,961	29
1984	522	\$1,795,958	522	100.0	68	\$471,166	26
1985	630	\$2,839,702	630	100.0	62	\$1,277,180	45
1986	577	\$3,957,450	577	100.0	57	\$1,072,281	27
1987	580	\$6,341,047	579	99.8	52	\$1,300,505	21
1988	647	\$5,650,428	645	99.7	44	\$995,567	19
1989	616	\$6,284,142	613	99.5	47	\$729,749	12
1990	713	\$7,109,354	705	98.9	46	\$542,042	8
1991	576	\$6,262,259	574	99.7	50	\$348,308	6
1992	544	\$5,191,547	542	99.6	46	\$447,946	9
1993	454	\$4,599,475	448	98.7	38	\$299,394	7
1994	540	\$6,437,180	531	98.3	40	\$564,102	10
1995	382	\$4,995,892	368	96.3	35	\$276,404	6
1996	519	\$5,884,609	508	97.9	32	\$126,326	2
1997	459	\$5,331,493	441	96.1	31	\$550,375	13
1998	379	\$3,961,140	351	92.6	35	\$260,316	9
1999	597	\$3,462,845	562	94.1	34	\$109,247	6
2000	325	\$3,869,107	308	94.8	44	\$66,665	3
2001	529	\$3,169,056	475	89.8	59	\$133,383	18
All	10,653	\$92,008,645	10,443	98.0	48	\$11,048,512	14

\*For claims in which a decision has been made. Applied to claims filed in given year.

As of the date of this summary, 210 cases filed from 1981 through 2001 have not been resolved. This represents about two percent of all cases filed during this time period. However, the amount claimed in these 210 cases is approximately \$11.6 million or about 13 percent of the total amount claimed in all cases during this time period. The average claim amount for the undecided cases is about \$55,000. Approximately 11 percent of the claims of \$50,000 or more remain





unresolved with claims filed as early as 1987 still not having been decided. This shows that there is a potential for a substantial additional payment for claims filed during this period.

A summary of the number of cases filed classified by the amount of the claim is shown in Table 4-3. As can be seen, the majority of cases (about 60 percent) were for less than \$500. Only about 10 percent of the cases were for \$10,000 or more. The number of cases in the highest claim amount of \$50,000 or more reached about 50 in 1986 and has remained fairly constant through 1997 before decreasing in recent years. For the years of 1981 through 1984, the number of claims of \$50,000 or more averaged about 25 or one half the number from 1986 through 1997. However, the average has been only about 25 for the last four years. The smallest number of claims over \$50,000 for the entire time period was in 2001. This shows that the increase in the maximum claim amount allowed by the KRS has not resulted in an increase in the number of large dollar amount claims.

**Table 4-3, Summary Of Number Of Cases By Amount Claimed**

Year	Number of Cases				
	Claim Amount				
	Under \$500	\$500-\$999	\$1,000-\$9,999	\$10,000-\$49,999	\$50,000 or More
1981	152	39	37	5	22
1982	254	34	51	6	32
1983	291	41	70	10	20
1984	372	47	71	5	27
1985	410	83	90	9	38
1986	369	70	72	20	46
1987	353	63	99	12	53
1988	405	91	94	8	49
1989	362	71	118	15	50
1990	433	93	102	24	61
1991	319	86	107	14	50
1992	281	105	102	12	44
1993	239	65	86	16	48
1994	317	73	78	16	56
1995	158	60	101	20	43
1996	293	64	99	12	51
1997	239	63	95	17	45
1998	180	67	92	8	32
1999	382	111	74	5	25
2000	176	49	66	6	28
2001	296	132	68	15	18
All	6281	1507	1772	255	838

More detailed information is given for the 838 cases involving a claim of \$50,000 or more in Chapter 9. The county and route where the accident occurred are given along with the amount sought and amount awarded. More detailed information is given concerning the reason for the claim. This information describes the alleged negligence which led to the claim. In some instances, comments giving more detailed information related to the claim are included.

The percent of claims in the various amount categories for which there was some payment is given in Table 4-4. The percentage of claims with a payment decreased as the claim amount increased; however, the percentages were not substantially different.

**Table 4-4, Decision Versus Claim Amount**

Year	Percent with Payment*				
	Claim Amount				
	Under \$500	\$500-\$999	\$1,000-\$9,999	\$10,000 - \$49,999	\$50,000 or More
1981	51	59	51	40	55
1982	69	62	55	33	47
1983	70	61	61	60	50
1984	71	55	65	20	56
1985	64	54	64	44	61
1986	58	57	54	40	57
1987	51	59	49	42	58
1988	40	51	45	63	57
1989	45	52	51	60	36
1990	49	46	40	46	33
1991	50	51	50	64	44
1992	47	46	48	67	34
1993	38	42	33	44	38
1994	38	40	50	56	23
1995	35	40	38	20	14
1996	34	33	31	25	12
1997	42	33	37	29	12
1998	34	30	32	38	38
1999	17	39	21	0	0
2000	72	45	52	17	17
2001	27	55	26	7	7
All	48	48	45	39	36

\*For claims in which a decision has been made and any payment was made.

A summary of the total amount claimed for the various claim amount categories is presented in Table 4-5. It is shown that the large majority of the amount claimed was in the "\$50,000 or more" claim amount category. While only about 8 percent of all claims is in the "\$50,000 or more" category, about 87 percent of the total amount of claims is in this category. In contrast, while about 59 percent of all claims are in the "under \$500" category, only 1.3 percent of the total amount of claims is in this category.

**Table 4-5, Summary Of Total Amount Claimed By Claim Amount**

Year	Total Amount Claimed				
	Claim Amount				
	Under \$500	\$500-\$999	\$1,000-\$9,999	\$10,000 - \$49,999	\$50,000 or More
1981	\$28,890	\$26,151	\$91,322	\$101,343	\$1,111,500
1982	\$46,850	\$24,204	\$118,809	\$146,309	\$1,690,900
1983	\$52,294	\$28,692	\$178,571	\$220,126	\$1,000,000
1984	\$66,173	\$33,174	\$181,724	\$94,887	\$1,420,000
1985	\$78,929	\$59,009	\$243,528	\$208,236	\$2,250,000
1986	\$70,657	\$47,985	\$179,677	\$488,131	\$3,171,000
1987	\$64,289	\$43,253	\$271,243	\$201,275	\$5,760,987
1988	\$79,317	\$62,779	\$244,899	\$152,433	\$5,111,000
1989	\$75,408	\$49,256	\$299,714	\$273,337	\$5,586,427
1990	\$80,345	\$65,266	\$221,822	\$450,031	\$6,291,890
1991	\$63,812	\$59,826	\$260,896	\$264,725	\$5,613,000
1992	\$56,298	\$73,605	\$277,248	\$264,428	\$4,519,968
1993	\$51,469	\$45,398	\$206,957	\$274,279	\$4,021,372
1994	\$63,298	\$51,320	\$224,348	\$298,214	\$5,800,000
1995	\$33,417	\$42,620	\$294,782	\$375,073	\$4,250,000
1996	\$58,167	\$45,461	\$290,363	\$246,764	\$5,243,854
1997	\$49,475	\$41,985	\$257,616	\$375,417	\$4,607,000
1998	\$35,956	\$48,106	\$237,905	\$188,769	\$3,450,404
1999	\$74,535	\$76,363	\$178,471	\$142,361	\$2,991,115
2000	\$36,976	\$33,980	\$170,445	\$135,506	\$3,492,200
2001	\$72,663	\$80,959	\$204,937	\$384,448	\$2,426,049
All	\$1,175,406	\$1,039,392	\$4,635,277	\$5,133,659	\$79,808,666

The amount of payments for claims in the various claim amount categories is presented in Table 4-6. About 72 percent of all payments were for claims of \$50,000 or more while about 5.0 percent were for claims of less than \$500. Given the large dollar amount for unresolved claims of \$50,000 or more, the percentage of all payments in this category will increase.

**Table 4-6, Payment Versus Claim Amount\***

Year	Total Payment				
	Claim Amount				
	Under \$500	\$500-\$999	\$1,000-\$9,999	\$10,000-\$49,999	\$50,000 or More
1981	\$13,550	\$14,527	\$47,631	\$8,536	\$348,860
1982	\$31,744	\$14,376	\$48,764	\$33,025	\$490,582
1983	\$34,014	\$16,776	\$89,133	\$60,036	\$226,002
1984	\$45,647	\$18,229	\$96,237	\$25,697	\$285,356
1985	\$54,902	\$35,912	\$158,716	\$20,600	\$1,007,050
1986	\$39,082	\$23,483	\$68,000	\$108,052	\$833,664
1987	\$26,107	\$19,194	\$73,470	\$17,850	\$1,163,884
1988	\$25,306	\$20,844	\$68,201	\$25,505	\$855,711
1989	\$27,333	\$16,960	\$95,275	\$68,535	\$521,646
1990	\$33,209	\$17,678	\$43,561	\$114,033	\$333,561
1991	\$25,994	\$20,421	\$68,318	\$16,991	\$216,584
1992	\$22,552	\$20,841	\$70,994	\$33,702	\$299,857
1993	\$16,795	\$12,016	\$41,839	\$53,111	\$175,633
1994	\$21,843	\$13,518	\$55,869	\$108,225	\$364,647
1995	\$10,571	\$11,332	\$61,846	\$31,155	\$161,500
1996	\$18,466	\$9,447	\$47,298	\$15,350	\$35,765
1997	\$12,588	\$11,846	\$48,733	\$57,402	\$419,806
1998	\$12,672	\$10,226	\$39,742	\$11,645	\$186,031
1999	\$15,795	\$15,414	\$14,538	\$0	\$63,500
2000	\$16,708	\$10,451	\$37,704	\$1,802	\$0
2001	\$47,130	\$40,481	\$35,159	\$10,613	\$0
All	\$552,008	\$373,972	\$1,311,028	\$821,865	\$7,989,639

\*For claims in which a decision has been made.

The percent of payments for claims in the various claim amount categories is presented in Table 4-7. The percentage of claims paid decreased substantially for the higher claim amounts. For claims of less than \$500, about one half of the claim amount was paid. This percentage decreased for claim amounts of \$10,000 or more to payment of under one fifth of the claim amount. The percentage for the claims of \$50,000 or more may change when the unresolved cases are decided.

**Table 4-7, Percent Paid Versus Claim Amount\***

Year	Percent of Claimed Amount Paid				
	Claim Amount				
	Under \$500	\$500-\$999	\$1,000-\$9,999	\$10,000-\$49,999	\$50,000 or More
1981	47	56	52	8	31
1982	68	59	41	23	29
1983	65	58	50	27	23
1984	69	55	53	27	20
1985	70	61	65	10	45
1986	55	49	38	22	26
1987	41	44	27	9	20
1988	32	33	28	17	17
1989	36	34	32	25	9
1990	41	27	20	25	5
1991	41	34	26	6	4
1992	40	28	26	13	7
1993	33	26	20	19	4
1994	35	26	25	36	6
1995	32	27	21	8	4
1996	32	21	16	6	1
1997	25	28	19	15	9
1998	35	21	17	6	5
1999	21	20	8	0	2
2000	45	31	22	1	0
2001	65	50	17	3	0
All	45	36	29	17	12

\* For claims in which a decision has been made

A summary of various claim information by county is given in Table 4-8. As would be expected, the highest number of claims was for Jefferson County with 1,597 claims. The county having the second highest number of claims was Kenton County with 546 claims followed by Boone County with 435 claims, Fayette County with 363 claims and Pike County with 358 claims. All counties had some claims with the lowest numbers of 6 claims for Robertson County, 10 claims in Elliott County, and 11 claims in Clinton County. The highest number of claims of \$50,000 or more was Pike County with 39 of these claims. The total claim amount in Pike County was approximately \$3.9 million which was the second highest total in the state. Jefferson County was second in the number of claims of \$50,000 or more with 34 claims and had the highest total amount of claims of about \$4.5 million. Only three counties (Jefferson, Pike, and Floyd) had claim amounts of over \$3 million while five other counties (Hardin, Kenton, Harlan, Warren, and



Fayette) had claim amounts between \$2 million and \$3 million. Robertson County had the lowest total amount of claims (\$885) followed by Cumberland County (\$6,398).

Thirteen counties did not have any claims of \$50,000 or more. The average claim amount varied dramatically by county with the highest amount in Leslie County of \$27,127 per claim and the lowest amount in Robertson County of \$148 per claim. The county having the largest amount paid was Jefferson County followed closely by Pike County. These counties were followed by Laurel and Floyd Counties. There were also large amounts of payments in Taylor and Spencer Counties which were the result of one crash in each of those counties that resulted in more than one large award. The percent paid (of claims in which a decision had been made) varied substantially by county from a low of about one percent in Boyle and Clinton Counties to 78 percent in Spencer County.

**Table 4-8, Summary By County (1981-2001)**

County	Total Number of Claims	Number of Claims \$50,000 or More	Amount Claimed	Average Claim Amount	Amount Paid	Percent Paid*
Adair	30	3	\$411,973	\$13,732	\$5,388	3
Allen	31	5	\$488,619	\$15,762	\$16,226	3
Anderson	41	7	\$734,222	\$17,908	\$148,757	45
Ballard	31	2	\$210,436	\$6,788	\$122,798	58
Barren	107	9	\$921,979	\$8,617	\$102,234	18
Bath	39	10	\$829,119	\$21,259	\$66,462	9
Bell	97	11	\$1,428,622	\$14,728	\$72,581	6
Boone	435	15	\$1,650,790	\$3,795	\$254,973	17
Bourbon	39	5	\$392,939	\$10,075	\$45,212	12
Boyd	128	8	\$832,443	\$6,503	\$112,618	20
Boyle	51	10	\$853,776	\$16,741	\$10,978	1
Bracken	10	0	\$7,577	\$758	\$1,447	19
Breathitt	40	3	\$361,363	\$9,034	\$11,117	3
Breckinridge	49	7	\$686,734	\$14,015	\$113,152	16
Bullitt	64	4	\$442,794	\$6,919	\$41,917	9
Butler	35	1	\$220,945	\$6,313	\$13,806	6
Caldwell	40	8	\$1,010,784	\$25,270	\$139,383	14
Calloway	54	9	\$1,012,086	\$18,742	\$45,866	10
Campbell	310	13	\$1,235,986	\$3,987	\$128,254	11
Carlisle	28	3	\$322,223	\$11,508	\$104,488	32
Carroll	65	6	\$482,545	\$7,424	\$16,898	4
Carter	57	12	\$1,468,521	\$25,764	\$48,193	3
Casey	26	0	\$25,471	\$980	\$10,331	51
Christian	72	6	\$725,940	\$10,083	\$55,051	8
Clark	73	4	\$460,402	\$6,307	\$51,291	14



**TABLE 4-8, SUMMARY BY COUNTY (1981-2001) - Continued**

County	Total Number of Claims	Number of Claims \$50,000 or More	Amount Claimed	Average Claim Amount	Amount Paid	Percent Paid*
Clay	55	3	\$400,034	\$7,273	\$16,710	4
Clinton	11	1	\$103,299	\$9,391	\$870	1
Crittenden	16	6	\$355,799	\$22,237	\$15,739	4
Cumberland	15	0	\$6,398	\$427	\$3,683	58
Daviess	179	8	\$862,469	\$4,818	\$114,007	15
Edmonson	29	3	\$321,393	\$11,083	\$7,235	3
Elliott	10	1	\$82,509	\$8,251	\$1,186	2
Estill	31	0	\$106,268	\$3,428	\$16,655	16
Fayette	363	20	\$2,210,667	\$6,090	\$179,422	9
Fleming	71	3	\$352,501	\$4,965	\$14,389	4
Floyd	252	27	\$3,025,490	\$12,006	\$445,565	18
Franklin	233	8	\$977,225	\$4,194	\$63,884	7
Fulton	44	8	\$595,542	\$13,535	\$64,746	11
Gallatin	46	7	\$572,330	\$12,442	\$38,552	7
Garrard	31	4	\$494,390	\$15,948	\$161,132	33
Grant	55	3	\$371,744	\$6,759	\$14,425	4
Graves	144	11	\$950,021	\$6,597	\$81,511	10
Grayson	103	15	\$1,368,934	\$13,291	\$211,589	17
Green	38	8	\$767,597	\$20,200	\$106,477	14
Greenup	110	15	\$1,332,091	\$12,110	\$341,633	26
Hancock	18	1	\$106,770	\$5,932	\$8,645	8
Hardin	245	25	\$2,958,515	\$12,076	\$234,750	9
Harlan	96	19	\$2,337,657	\$24,351	\$211,861	14
Harrison	21	3	\$316,201	\$15,057	\$11,646	4
Hart	38	3	\$291,587	\$7,673	\$32,077	17
Henderson	156	14	\$1,453,654	\$9,318	\$333,808	27
Henry	49	2	\$146,460	\$2,989	\$48,688	33
Hickman	25	0	\$7,259	\$290	\$1,766	24
Hopkins	233	17	\$1,669,584	\$7,166	\$171,059	11
Jackson	14	0	\$9,235	\$660	\$1,522	17
Jefferson	1,597	34	\$4,452,495	\$2,788	\$645,694	15
Jessamine	46	1	\$89,217	\$1,940	\$61,376	69
Johnson	54	9	\$985,085	\$18,242	\$74,017	8
Kenton	546	24	\$2,767,344	\$5,068	\$180,301	7
Knott	70	11	\$1,122,130	\$16,030	\$35,589	6
Knox	69	11	\$1,163,494	\$16,862	\$11,417	2
Larue	46	2	\$117,363	\$2,551	\$10,435	9



**TABLE 4-8, SUMMARY BY COUNTY (1981-2001) - Continued**

County	Total Number of Claims	Number of Claims \$50,000 or More	Amount Claimed	Average Claim Amount	Amount Paid	Percent Paid*
Laurel	78	9	\$938,009	\$12,026	\$456,130	49
Lawrence	40	9	\$881,823	\$22,046	\$109,415	14
Lee	18	0	\$39,168	\$2,176	\$2,983	8
Leslie	44	12	\$1,193,590	\$27,127	\$128,843	11
Letcher	71	10	\$1,148,769	\$16,180	\$32,041	4
Lewis	48	1	\$129,109	\$2,690	\$27,917	22
Lincoln	39	5	\$515,685	\$13,223	\$55,364	11
Livingston	27	1	\$267,837	\$9,920	\$6,879	3
Logan	69	4	\$594,980	\$8,623	\$22,390	4
Lyon	31	2	\$196,152	\$6,327	\$3,590	2
McCracken	185	12	\$1,257,495	\$6,797	\$219,685	18
McCreary	38	1	\$141,108	\$3,713	\$11,648	8
McLean	25	3	\$387,577	\$15,503	\$81,383	21
Madison	116	12	\$1,486,907	\$12,818	\$42,563	5
Magoffin	41	9	\$831,550	\$20,282	\$54,529	10
Marion	39	0	\$57,810	\$1,482	\$12,159	21
Marshall	75	5	\$727,233	\$9,696	\$50,050	8
Martin	44	7	\$714,767	\$16,245	\$48,719	7
Mason	83	1	\$204,085	\$2,459	\$16,355	9
Meade	49	13	\$1,275,029	\$26,021	\$160,230	14
Menifee	14	1	\$141,536	\$10,110	\$7,665	5
Mercer	33	6	\$647,586	\$19,624	\$106,994	17
Metcalfe	36	9	\$964,305	\$26,786	\$284,541	30
Monroe	36	3	\$268,046	\$7,446	\$55,976	33
Montgomery	57	12	\$1,209,249	\$21,215	\$117,804	10
Morgan	24	5	\$575,721	\$23,988	\$29,990	5
Muhlenberg	158	13	\$1,534,912	\$9,715	\$125,123	11
Nelson	74	3	\$553,158	\$7,475	\$16,822	5
Nicholas	22	0	\$92,492	\$4,204	\$34,812	39
Ohio	97	2	\$293,202	\$3,023	\$20,531	7
Oldham	72	4	\$692,223	\$9,614	\$96,193	16
Owen	34	1	\$118,303	\$3,480	\$13,478	11
Owsley	11	0	\$24,399	\$2,218	\$2,425	11
Pendleton	31	4	\$412,803	\$13,316	\$20,783	5
Perry	84	18	\$1,970,491	\$23,458	\$253,161	16
Pike	358	39	\$3,918,707	\$10,946	\$612,040	17
Powell	42	3	\$471,353	\$11,223	\$106,093	23





**TABLE 4-8, SUMMARY BY COUNTY (1981-2001) - Continued**

County	Total Number of Claims	Number of Claims \$50,000 or More	Amount Claimed	Average Claim Amount	Amount Paid	Percent Paid*
Pulaski	121	10	\$987,308	\$8,160	\$33,561	4
Robertson	6	0	\$885	\$148	\$357	40
Rockcastle	38	0	\$46,849	\$1,233	\$10,407	22
Rowan	81	11	\$1,036,969	\$12,802	\$217,215	21
Russell	28	4	\$575,330	\$20,548	\$206,691	36
Scott	105	8	\$1,242,466	\$11,833	\$161,721	16
Shelby	106	5	\$654,846	\$6,178	\$15,257	6
Simpson	47	3	\$509,731	\$10,845	\$14,971	3
Spencer	27	3	\$521,116	\$19,301	\$403,206	78
Taylor	52	14	\$976,750	\$18,784	\$416,293	43
Todd	20	0	\$28,075	\$1,404	\$2,532	9
Trigg	33	4	\$261,253	\$7,917	\$11,786	5
Trimble	26	1	\$122,812	\$4,724	\$24,985	20
Union	44	3	\$462,573	\$10,513	\$22,884	5
Warren	149	20	\$2,214,074	\$14,860	\$137,475	7
Washington	29	1	\$127,136	\$4,384	\$12,131	10
Wayne	31	3	\$221,984	\$7,161	\$17,091	8
Webster	84	3	\$369,454	\$4,398	\$82,097	22
Whitley	94	6	\$1,033,103	\$10,990	\$54,778	6
Wolfe	23	4	\$428,028	\$18,610	\$6,945	9
Woodford	48	7	\$7,311,270	\$152,318	\$178,451	39

\*For claims in which a decision has been made.

The numbers of claims classified by reason for the claim and year of claim are summarized in Table 4-9. The number of claims is summarized in four intervals over the 21-year study period. The categories used were based on the explanations given on the summaries maintained by the Board of Claims and review of case files. In some cases, more than one reason was coded for one claim. For example, a claim might state that there was inadequate warning for a curve which led to a vehicle running off the road, and there was no guardrail provided to protect the vehicle after it ran off the road. Up to two reasons could be coded for any single claim. There were 10,930 reasons coded for the 10,657 claims. The summary by year allows the determination of trends that may have occurred. Many of the reasons given, especially those with relatively small numbers of claims, fluctuated dramatically from year to year. There have also been changes in the numbers of the most common claims. For example, claims alleging damage to a vehicle from a pothole has increased in recent years while claims related to an object thrown from a mower and paint striping has decreased dramatically. These reductions may be related in the recent use of contractors for mowing and painting operations. The most common claim dealt with damage to a vehicle from hitting a pothole. The number of this type of claim has increased dramatically

in recent years. Other common reasons listed included a crash involving a KyTC vehicle, an object thrown from a mower into a vehicle, an object thrown from an uncovered load, hitting an object in the road, and paint striping where a vehicle drives through wet paint.

**Table 4-9, Summary Of Number Of Claims By Reason For Claim (1981-2001)**

Reason for Claim	1981-1985	1986-1990	1991-1995	1996-2001	ALL
Pothole damaged vehicle	188	338	541	1,435	2,502
Accident involving KyTC vehicle	357	367	215	35	974
Object thrown from mower	174	428	189	16	807
Miscellaneous	149	276	190	146	761
Object in road	128	157	191	247	723
Uncovered load	184	239	132	17	572
Paint striping	214	238	53	14	519
Falling rock/rock slide	45	108	143	150	446
Hit tree limb/falling tree	32	83	81	117	309
Damaged utility	119	95	38	46	298
Improper drainage	31	73	76	84	264
Inadequate/improper signs/markings	29	67	88	71	255
Construction zone - other	19	14	58	86	177
Snow removal-snowplow operation	53	64	28	8	153
Oil/tar on road	60	50	23	1	134
Spreading salt and/or cinders	87	32	11	0	130
Inadequate traffic control device – Work Zone	40	50	20	13	123
Accident due to pavement	21	22	44	33	120
Hit manhole cover/drain	29	41	34	14	118
Improper drainage damaged property	26	34	29	26	115
Pedestrian fall	20	31	44	16	111
Lack of guardrail	21	28	34	28	111
Accident due to debris in road	25	44	29	12	110
Break in pavement	26	32	23	23	104
Traffic signal malfunction-Inadequate	14	35	20	33	102
Construction damaged property	12	28	27	15	82
Object thrown up from road	20	21	24	13	78
View obstructed	6	15	35	18	74



**Table 4-9, Summary Of Number Of Claims By Reason For Claim (1981-2001)  
Continued**

Reason for Claim	1981-1985	1986-1990	1991-1995	1996-2001	ALL
Hit object on right of way (clear zone)	13	23	20	14	70
Sign fell onto vehicle	17	14	17	20	68
Work zone-flagger related	32	18	13	3	66
Shoulder dropoff	12	36	9	6	63
Substandard guardrail	10	13	20	20	63
Shoulder related defect	9	13	20	21	63
Loose part of bridge deck	20	12	11	13	56
Lack of stop sign	8	20	9	5	42
Inadequate signing at stop approach	3	12	13	2	30
Signal fell	7	11	3	2	23
Improperly designed curve	1	4	14	3	22
Pedestrian - other	1	12	2	3	18
Construction - loss of business	6	2	2	2	12
Road too narrow	2	0	0	9	11
Low clearance	7	2	0	0	9
Hit animal	0	5	3	0	8
Improper speed limit	4	1	2	0	7
Detour design	7	0	0	0	7
Related to issued license	0	2	3	0	5
No roadway lighting	0	1	4	0	5
Sandblasting	0	0	2	0	2
Improper construction of median	0	1	1	0	2

A more detailed analysis of the claims by the reason for the claim is given in Table 4-10. For each reason, the total number of claims, as well as the number of claims for \$50,000 or more, are listed. In addition, the total amount claimed, the average claim amount, and the amount and percent paid for claims for which a decision has been made are given. The largest amounts claimed were related to inadequate or improper signs or markings, improper drainage, lack of guardrail, inadequate traffic control in a work zone, a crash involving a KyTC vehicle, shoulder drop-off, accident due to pavement defect, problem with a traffic signal, substandard guardrail, view obstructed, falling rock or rock slides, shoulder related defect, lack of a stop sign, hit object on right-of-way (clear zone), debris on road caused loss of control, inadequate signing on a stop approach, improper drainage damaged property, and other construction zone issues. Lack of a stop sign and inadequate signing on a stop approach were classified separately from the general category of inadequate signs because these reasons were specified in a number of claims.

**Table 4-10, Analysis Of Claims By Reason For Claim (1981-2001)**

Reason for Claim	Number of Claims	Number of Claims \$50,000 or More	Amount Claimed	Average Claim Amount	Amount Paid*	Percent Paid*
Pothole damaged vehicle	2,502	2	\$1,135,897	\$454	\$301,907	27
Accident involving KyTC vehicle	974	42	\$5,360,996	\$5,504	\$1,207,460	24
Object thrown from mower	807	3	\$569,864	\$706	\$208,766	37
Miscellaneous	761	18	\$2,762,957	\$3,631	\$169,246	8
Uncovered load	573	1	\$254,094	\$443	\$129,539	51
Object in road	724	2	\$623,032	\$861	\$80,810	20
Paint striping	519	0	\$159,058	\$306	\$73,312	46
Falling road/rock slide	446	25	\$3,328,822	\$7,464	\$387,126	12
Damaged utility	298	0	\$348,882	\$1,171	\$148,578	43
Hit tree limb/falling tree	309	10	\$1,675,153	\$5,421	\$126,842	13
Inadequate/improper signs/markings	255	146	\$14,957,147	\$58,655	\$1,045,292	8
Improper drainage	263	120	\$11,934,213	\$45,377	\$2,084,896	20
Snow removal/snowplow operation	153	1	\$147,512	\$964	\$21,472	15
Oil/tar on road	134	0	\$72,569	\$542	\$16,651	23
Spreading salt and/or cinders	130	0	\$34,591	\$266	\$19,576	57
Inadequate traffic control device - Work Zone	123	62	\$5,713,502	\$46,451	\$660,931	12
Hit manhole cover/drain	118	3	\$205,592	\$1,742	\$9,149	6
Construction zone/other	177	19	\$2,034,828	\$11,496	\$196,372	13
Pedestrian fall	111	14	\$1,416,940	\$12,765	\$17,706	1
Accident due to pavement	120	51	\$5,170,479	\$43,087	\$510,144	11
Accident due to debris in road	110	23	\$2,663,839	\$24,217	\$278,253	12
Break in pavement	104	6	\$803,300	\$7,724	\$44,556	6
Improper drainage damaged property	115	17	\$2,077,360	\$18,064	\$263,673	14
Lack of guardrail	111	86	\$8,693,862	\$78,323	\$803,458	11
Traffic signal malfunction - inadequate	102	46	\$4,766,809	\$46,733	\$301,923	7
Construction, damaged property	82	5	\$878,866	\$10,718	\$153,741	18
Object thrown up from road	78	0	\$31,439	\$403	\$4,780	15
Hit object on right of way (clear zone)	69	28	\$2,770,760	\$40,156	\$451,864	18
Work zone/flagger related	66	8	\$785,943	\$11,908	\$54,501	7



**Table 4-10, Analysis Of Claims By Reason For Claim (1981-2001)**

Sign fell onto vehicle	68	0	\$53,218	\$783	\$18,604	35
Shoulder dropoff	63	51	\$5,229,845	\$83,013	\$791,405	17
Loose part of bridge deck	56	0	\$108,246	\$1,933	\$28,101	26
Substandard guardrail	63	52	\$4,730,658	\$75,090	\$674,154	18
Shoulder related defect	63	33	\$3,007,483	\$47,738	\$244,976	10
Lack of stop sign	42	26	\$2,957,125	\$70,408	\$491,297	18
View obstructed	55	39	\$3,866,299	\$70,296	\$390,887	11
Inadequate signing at stop approach	30	26	\$2,619,976	\$87,333	\$387,050	16
Signal fell	23	0	\$24,778	\$1,077	\$7,071	29
Improperly designed curve	22	18	\$1,224,718	\$55,669	\$78,202	6
Pedestrian - other	18	5	\$716,171	\$39,787	\$1,019	0
Hit animal	8	2	\$132,249	\$16,531	\$1,605	1
Construction, loss of business	12	4	\$290,725	\$24,227	\$52,267	18
Low clearance	9	0	\$11,899	\$1,322	\$2,046	17
Detour design	7	5	\$291,309	\$41,616	\$84,920	29
Improper speed limit	7	5	\$563,825	\$80,546	\$6,000	1
Road too narrow	11	8	\$702,773	\$63,888	\$0	0
Related to issued license	5	2	\$210,240	\$42,048	\$190	0
No roadway lighting	5	4	\$402,000	\$80,400	\$0	0
Improper construction of median	2	2	\$200,000	\$100,000	\$32,500	16

\*For Claims in which a decision has been made.

Each of these 18 reasons accounted for more than two million dollars in claims. Combining the claim amounts related to these 18 reasons accounts for about 84 percent of the total claim amounts (considering two reasons can be associated with one claim). The highest average claim amount (for these 18 major reasons) was for claims related to inadequate signing at a stop approach followed by claims related to a shoulder dropoff, lack of guardrail, substandard guardrail, lack of a stop sign, a view obstruction, and inadequate or improper signs or markings. The amount paid was highest for improper drainage followed by claims related to a crash involving a KyTC vehicle, inadequate or improper signs or markings, lack of guardrail, shoulder drop-off, substandard guardrail, and inadequate traffic control in a work zone.

Considering all the reasons for claims, the highest percent paid was for claims related to spreading salt and/or cinders followed by claims related to an uncovered load, paint striping, utility damage, and an object thrown from a mower. The lowest percent paid (considering reasons for which there were several claims) was for claims related to a pedestrian fall followed by hitting a manhole cover,

Since there was such a large number of classifications for the reason for the claim, the reasons were grouped into several broader categories and analyzed as presented in Table 4-11. If two

reasons were given for a claim, it would be added to both classifications. If both reasons were in the same broad category, it would only be counted once. This resulted in 10,920 reasons classified with 1,020 reasons classified for claims of \$50,000 or more. The largest number of claims related to the road surface or a maintenance activity, but these claims were generally small in dollar amount. The major type of claims in the road surface category were pothole damage and hitting an object in the road. The largest claim amounts related to road surface were for claims in which a road defect was alleged to have caused a crash. The major types of claims in the maintenance activity category included an object thrown from a mower, paint striping, and spreading salt or cinders. The largest total claim amounts were related to claims involving traffic control devices. The major types of claims in this category would be related to inadequate signs or markings, lack of a stop sign, or inadequate warning on a stop approach. The total amount claimed in this category was substantially higher than any other with approximately 24 percent of the amount for all claims involving this reason. The category with the second highest amount claimed was drainage with approximately 13 percent of all claims involving this category. Following drainage, the categories with the highest amount claimed were barrier, road surface related, shoulder related, and work zone traffic control. The highest average claim amounts were for claims related to alleged deficiencies in barriers (guardrail) and shoulders.

**Table 4-11, Summary Of Reason For Claim Into Various Categories (1981-2001)**

Reason for Claim	Number of Claims	Amount Claimed	Average Claim Amount	Number \$50,000 or More	Amount Paid*	Percent Paid*
Maintenance Activity	2,665	\$6,318,054	\$2,371	40	\$986,422	18
Vehicle Operation	1,547	\$5,615,090	\$3,630	43	\$1,336,999	25
Road Surface Related	4,056	\$12,231,059	\$3,016	101	\$1,292,067	12
Fixed Object	70	\$2,771,260	\$39,589	28	\$451,864	18
Barrier	172	\$12,974,520	\$75,433	136	\$1,477,612	14
Traffic Control Devices	543	\$25,851,897	\$47,609	250	\$2,256,347	10
Shoulder Related	126	\$8,237,328	\$65,376	84	\$1,036,381	15
Drainage	378	\$14,011,573	\$37,068	137	\$2,348,569	19
Geometric Feature	99	\$6,005,689	\$60,664	67	\$503,635	10
Work Zone Traffic Control	187	\$6,484,846	\$34,678	70	\$713,082	12
Construction Activity	278	\$3,495,728	\$12,575	33	\$487,300	16
Miscellaneous	799	\$4,377,961	\$5,479	31	\$172,770	5

\* For claims in which a decision has been made.

The largest number of claims of \$50,000 or more as well as largest amount paid were related to traffic control devices and drainage. The highest percentages of claim amount paid were for claims involving vehicle operation and drainage with the lowest percentage paid for claims involving a geometric feature or traffic control devices.

An analysis of the claims by highway district is presented in Table 4-12, The largest number of claims was in Districts 5 and 6 with the fewest number in Districts 10 and 8. The largest number of claims of \$50,000 or more was in Districts 12 and 7 with the fewest number of these claims

again in Districts 8 and 10. The largest total amount claimed was in District 12 with the lowest in District 8. The highest average claim amount was in District 10 with the lowest average in District 5. The highest amount paid was in District 12 with the lowest amount paid in District 8. The highest percentage paid was in District 5 with the lowest percentage paid in District 6.

**Table 4-12, Summary By Highway District (1981-2001)**

District	Number of Claims	Number \$50,000 or more	Amount Claimed	Average Claim Amount	Amount Paid*	Percent Paid*
1	693	63	\$6,163,336	\$8,894	\$728,904	14
2	1,106	78	\$8,877,099	\$8,026	\$1,153,971	14
3	559	57	\$6,532,147	\$11,685	\$657,386	12
4	762	91	\$9,180,613	\$12,048	\$1,326,273	16
5	2,174	61	\$8,009,971	\$3,684	\$1,339,824	18
6	1,559	76	\$7,936,508	\$5,091	\$681,288	9
7	1,003	96	\$10,553,091	\$10,522	\$1,121,022	13
8	377	27	\$3,035,405	\$8,051	\$355,034	14
9	649	62	\$6,359,839	\$9,799	\$880,780	15
10	328	43	\$4,949,877	\$15,091	\$491,563	13
11	547	71	\$8,503,744	\$15,546	\$953,842	14
12	889	112	\$11,796,771	\$13,270	\$1,358,175	14

\* For claims in which a decision has been made.

A summary of the reason for the claim versus highway district is shown in Table 4-13. Some differences were noted when comparing the distribution by district. The largest number of claims related to maintenance activity, vehicle operation, road surface, traffic control devices, and construction activity were in District 5. The largest numbers of claims related to barriers was in District 4. District 7 had the largest number of claims related to the shoulders. District 1 had the highest number related to a geometric feature. The largest numbers of claims related to construction zone traffic control and fixed objects were in District 6. District 12 had the highest number related to drainage. A summary of the reason for the claim versus highway district for claims of \$50,000 or more is given in Chapter 9.

**Table 4-13, Summary Of Reason For Claim Into Various Categories (1981-2001)**

Number in Given Category													
Highway District													
Reason Category	1	2	3	4	5	6	7	8	9	10	11	12	All
Traffic Control Devices	41	49	52	57	80	45	73	18	44	13	23	48	543
Drainage	21	25	13	40	35	42	23	21	39	26	41	52	378
Road Surface Related	115	453	117	190	1209	857	365	64	184	81	162	259	4056
Barrier	10	21	7	24	13	13	23	2	11	11	15	22	172
Construction Zone-Traffic Control	14	14	9	12	25	32	17	16	10	10	11	17	187
State Vehicle Operation	156	143	133	130	264	175	120	59	109	55	79	124	1547
Shoulder Related	14	17	6	20	10	6	23	5	9	3	4	9	126
Fixed Object	7	5	2	8	8	13	8	2	2	2	7	6	70
Geometric Feature	18	14	7	13	7	9	7	5	1	8	7	3	99
Construction Activity	16	14	16	22	71	20	20	18	21	15	14	31	278
Maintenance Activity	237	271	167	220	346	298	252	139	178	94	165	298	2665
Miscellaneous	69	101	49	59	130	80	93	39	62	31	38	48	799

## Summary

The analysis of Board of Claims cases revealed several specific sources of claims against the KyTC. Some of the major sources included inadequate traffic signs and markings (such as the lack of a stop sign or inadequate warning of a stop approach), inadequate drainage, lack of or substandard guardrail, and shoulder related defects such as a shoulder drop-off. Identification of these areas should allow a government agency to take measures that would both reduce liability risk and provide safer highways. A previous research report (KTC-90-8, "Tort Liability Related to Highways in Kentucky") reviewed Board of Claims cases and made recommendations relating to the establishment of an effective risk management program. The summaries given in this report support the recommendations made in the previous report.



## CHAPTER 5      High-Risk Areas

### High-Risk Areas

It is impossible to eliminate all traffic crashes. As long as people are imperfect, they will make mistakes and crashes will happen. Some of these crashes are more likely to result in tort claims than others. These "high-risk" crashes (or potential conditions for high-risk crashes) deserve special attention in this notebook. Crashes resulting in fatalities or serious injuries are prime candidates for lawsuit activities. The probability for fatal or serious-injury crashes increases as vehicular speeds increase and where the potential for head-on, fixed-object collisions increases. Based on these factors, it would seem that crashes occurring on urban freeways and rural roadways would have a higher general risk of tort claims. It is difficult to determine if this statement is true.

Although many people will indicate that they "knew someone would eventually get killed at that intersection", it is impossible to predict when or where a fatal crash will occur. There are, however, some roadway locations or conditions that are considered to have a greater potential for crashes. Collisions are more likely to occur along highway curves than on straight sections of a roadway simply because the driver must apply some driving skill to negotiate a curve. Crashes are more likely to occur as traffic volumes increase and at locations where motorists are required to make several decisions in a short period of time.

Rather than attempt to discuss the full range of operational or geometric design conditions that may influence crash occurrences, this chapter will address eight "defects" often identified by plaintiffs as the basis for lawsuits and the causes of crashes. These eight "defects" are listed below and are addressed at length in this section.

1. High-Crash Locations (HCL's)
2. Maintenance and Construction Sites
3. Edge Drop-offs
4. "Slippery" Roads
5. Narrow Bridges
6. Fixed Objects Near The Roadway Edge
7. Pavement Defects (Potholes)
8. Traffic Control Devices

### High Crash Locations

A high-crash location (HCL) is defined as an intersection or section of roadway that has a relatively large number of reported traffic crashes within a specified period of time when compared with other intersections and roadway sections within the same jurisdiction. The term "relative" is important. An intersection having 10 or more crashes within a 12-month period may be considered a high-accident crash if it was located in a small town, like Sandy Hook. However, if that intersection was located in a large city, like Lexington, then it would not be considered as a high-crash location. The reason for the difference is due to traffic volumes. In Sandy Hook,

intersection traffic volumes may be 3,000 per day. In Lexington, intersection traffic volumes may be 50,000 per day. Many more accidents would be expected to occur in Lexington than in Sandy Hook.

Selection of HCL's for a city, county, or state is based upon one of several accepted techniques. Engineers may simply count the number of collisions, may calculate the crash rate, may use a combination number-rate method, or may use a sophisticated, statistical procedure to choose HCL's. The Kentucky Transportation Cabinet (KyTC) now has a very good procedure that uses a computer analysis of crash data and an optimization procedure to select HCL's. The crash statistics necessary to enable these locations to be identified are summarized in an annual report (1).

Recognizing high-crash locations is important because the occurrence of many previous crashes at a particular site may be viewed by the court as constructive notice. Failure to identify, analyze, and improve the HCL may be interpreted as negligence on the part of the governmental unit. It is difficult to defend the Department's position when a jury is given an abundance of information about a HCL that was essentially ignored by the government. Such inaction may be considered as a lack of reasonable care.

## Maintenance and Construction Sites

Maintenance and construction sites (work zones) are high-risk areas of special concern for a number of reasons. One of the primary factors is that in addition to the vehicular exposure hazard, pedestrians and construction workers are also exposed. Work zones are at variance with the motorist's normal expectations (2). That is, they contradict the popular ideologies of driver consistency and expectancy. In light of this, it is usually held that state authorities should provide proper safeguards or adequate warnings of work zone areas and that these warnings must be commensurate with the degree of danger. The adequacy of these warnings is a question in tort law that is usually left for the courts to decide. Unfortunately, most of the past cases discuss only what is not adequate; decisions on what is adequate warning are rarely addressed. The Manual on Uniform Traffic Control Devices (MUTCD) (3) contains provisions for adequate warning in construction and maintenance zones which should alleviate this problem to a great extent.

The Federal Highway Administration (FHWA) conducted a nationwide review of construction sites. Though safety had been improved over previous years, several areas were selected for continued emphasis (4):

1. Management was not fully utilizing crash data at construction sites.
2. Guardrail and barrier rail transitions were a problem. There were still too many blunt-end and transition hazards.
3. There seemed to be a lack of concern by construction personnel for the motoring public. For example, construction equipment and vehicles were often located hazardously close to the traveled way.
4. There was a problem with pavement drop-offs.

5. Other problems which were a bit less prevalent included unneeded and confusing pavement markings, the use of damaged and dirty warning signs, and inadequate taper lengths.

In consideration of motorist safety, pedestrian safety, and worker safety in work zones, the following paragraphs have been provided.

### Motorist Safety

Crash experience in work zones is almost always higher in comparison to non-work zone areas. This relatively high crash experience can usually be attributed to motorist expectations as applied to one or more of the following practices: signing, delineation, shoulders, geometrics, control device maintenance, surface maintenance, flagging, speed zoning, or debris removal. Inadequate implementation in any one of these areas may lead to increased driver confusion and subsequent accidents. The MUTCD contains guidance on these practices and the KyTC has established good training programs in these areas. A training course dealing with traffic control in work zones has also been presented by the Kentucky Transportation Center.

Different types of projects require different work zone layouts, and some types of work zones have greater potential for accidents than others. In addition, it is easier to provide adequate warning for some maintenance activities than for others. For example, the construction or rehabilitation of a bridge is a stationary activity in which there is typically ample opportunity to warn motorists of any possible hazards. This is in contrast to shorter term activities, such as pothole repairing or striping, when the adequate warning doctrine can be more difficult to implement. The key elements for protecting any work zone activity are sufficient warning and visibility.

### Pedestrian Safety

One of the major weaknesses in work zone safety has been the lack of attention given to pedestrians who pass through these zones. In a report sponsored by the FHWA, work zones were referred to as "obstacle courses" with the following observation being made: "It seems as though there is no real concerted effort being made by an organization, group, or any agency to afford the pedestrian the same rights and privileges that a vehicle has as it passes through a construction zone. The pedestrian is simply allowed to fight through construction areas full of debris, mud, and other obstructions." (5) The report went on to say that, although the MUTCD provided comprehensive guidelines for vehicular traffic control, there was not a large amount of attention given to pedestrian safety.

### Worker Safety

It is generally accepted that work zones experience higher accident rates than sites where there is no construction. However, workers are more vulnerable to serious injury since they have a high degree of exposure to vehicles operated by confused and irritated drivers

(6). The seriousness of this problem can be seen in the following injury rate statistics. The mean injury rate for all industries is 6.24 per 100 full-time employees. The rate for municipal workers is 24.34 per 100 full-time employees, while utility maintenance workers experience 18.10 injuries per 100 full-time employees. These rates are evidence of a problem in accommodating employee safety in work zone areas.

From the standpoint of motorist, pedestrian, and worker safety, a conscientious effort might be extended toward existing safety practices in the highway work zone. Adherence to the fundamental rules of thumb listed below will help mitigate the hazard:

1. Traffic safety in construction and maintenance zones should be an integral and high priority element of every project from planning through design and construction.
2. Traffic movement should be inhibited as little as practicable.
3. Motorists should be guided in a clear and positive manner while approaching and traversing construction and maintenance work areas.
4. The implemented traffic control elements should be inspected on a routine basis to ensure acceptable levels of operation.
5. Constant attention should be given to the implemented traffic control elements to minimize (or negate) potential increases in hazards.

## Edge Drop-offs

Edge drop-offs (or low shoulders) are usually brought about by pavement overlay and resurfacing activities. These edge drop-offs may also result from erosion associated with highway drainage. When a given section of highway is resurfaced, a differential is introduced between the elevation of the main lanes and elevation of the shoulder area. Over a period of several years, successive asphalt overlay applications may produce excessive elevation differentials creating potentially hazardous conditions for motorists leaving the main lanes and entering the shoulder area. This hazard exists regardless of whether the shoulder is grass, gravel or pavement. The hazards associated with edge drop-offs are obvious. The responsibility of the public agency is basically twofold: (1) warn of the defect, and (2) correct the defect.

Where a shoulder drop-off or low shoulder exists at a site, and after it has been identified as a potentially hazardous condition, it is the responsibility of the public agency to provide adequate warning of this condition. A warning device such as the W8-9A Low Shoulder sign should be used where the shoulder is sufficiently lower than the pavement, thus creating a hazard to vehicles that may get off the pavement: This sign may be warranted on a roadway where erosion of the shoulders has occurred, whether or not the shoulder is safe for vehicular traffic travel. The sign shall be removed when the hazard has been corrected (3).

It is important to note that merely warning of the defect (hazard) is not sufficient; it is the responsibility of the public agency to correct the defect as soon as practicable. The sign is not intended as a long-term solution.

Evidence strongly suggests that a 1:1 slope (or flatter) on the edge of pavement allows an errant motorist a much better opportunity to execute a recovery maneuver to return his vehicle to the travelway. There could be a benefit from emphasizing this procedure in the future to provide an extra margin of safety for motorists.

## Slippery Roads

Most "slippery" road cases involve a wet-weather crash in which an out-of-control vehicle slides along or off of the roadway and collides with another vehicle or a fixed object, or possibly flips over one or more times. Occasionally, the roadway surface was slippery due to mud or diesel (or gasoline) spillage, but usually water is the lubricant. Crashes resulting from diesel (or gasoline) spillage are rare. Usually the spillage is the result of a previous crash on the roadway and investigating officers are normally quick to have such spillage removed by the local fire department, or they notify the responsible maintenance agency to spread sand on the roadway to soak up the fuel.

In tort cases involving slippery roadway surfaces, the plaintiff must prove that an unusually unsafe condition existed at the time of the crash, and that such a condition was known (or should have been known) to exist. Generally, proof of a slippery road condition requires a crash history that contains several wet weather crashes similar to the crash relating to the lawsuit. The question that must be addressed is whether the number of previous crashes is sufficient to prove that a hazardous condition really existed. Each claim must be viewed individually because there is no definite number of wet weather crashes that is considered to be the dividing point between a hazardous or non-hazardous condition.

A governmental agency which is investigating two roadways having similar design characteristics, equal volumes, and the same number of accidents in the most recent 12-month period may look at wet weather crashes as part of the analysis. If roadway A has 65% wet weather accidents, and roadway B has 25% wet weather accidents, then roadway A probably would have a more slippery surface and might be studied for possible improvements to minimize wet weather accidents.

Because motorists do not usually drive more cautiously in wet conditions, even though they certainly should, wet weather crash rates are usually higher than dry weather crash rates. Generally, roadways in the Southeast are only wet a maximum of about seven percent of the time. Consequently, if wet weather crashes are found to occur 25 percent of the time on a roadway, such a condition is fairly typical. However, when wet weather crashes approach 50 percent or more of the total, then consideration should be given to analyzing wet weather crashes. It must be noted that if 50 percent or more of the total number of crashes on a roadway are wet weather crashes, this does not necessarily mean that the roadway is "hazardous" or "slippery". There may be other reasons for the high wet weather rate. Every location is unique and should be analyzed before determining if a hazardous condition does exist.

Another measurement of the "smoothness" of a roadway surface is obtained with the use of a skid-test trailer. The skid-test numbers reflect wet conditions on the pavement; in fact, the trailer sprays water on the roadway immediately prior to beginning the skid of the trailer tires to provide wet conditions. Skid test numbers usually are found to be between 20 and 60. These numbers provide a good basis for comparing pavement surface textures and they provide a conservative approximation of the actual pavement friction factor.

Highway engineers would like to know what skid test number constitutes the division between a "hazardous" and "non-hazardous" condition. Once again, the answer is not specific. Nationally, skid test numbers around 30 are often viewed as suggesting the need for additional analysis, but do not necessarily signify an impending hazardous condition. Dry pavements usually have a friction factor of about 0.50 to 0.80. Wet pavements usually have a friction factor between 0.30 to 0.55. A skid test number of 30 indicates a pavement having a friction factor in the lower range of the normal readings. This is the basis for considering a skid test number of 30 as an indication that there may be a need for additional analysis. It indicates that the pavement is approaching the end of its life and that some improvement will be needed at some point in the future.

Similar to any roadway condition where the governmental agency determines that the public should be warned of a potentially hazardous condition, a "Slippery When Wet" sign may be installed in advance of a roadway segment that has had an unusually high number of wet weather accidents, a low skid test number, or a combination of the two. Installation of such a sign satisfies the government's requirement to warn the public of an unusual roadway condition.

A governmental agency can reduce its risk of tort liability by identifying roadway segments having a significant number of wet weather crashes, skid-testing its roadways on a scheduled basis, warning the traveling public of unusually smooth roadway surfaces, and improving the roadway surface texture (i.e., increase its friction factor) by overlaying the section with new pavement.

## Narrow Bridges

Of the more than 500,000 bridges that serve vehicular traffic in the United States, the FHWA has determined that about 45 percent (or about 250,000) are deficient in some respect (7). As defined by the FHWA, the term deficient includes bridges that are functionally or structurally obsolete. Since it is quite rare for individuals to bring suit against agencies for structural deficiencies (i.e., death or injury brought about by a bridge collapse), attention will be focused on functional deficiencies that are more common in bridge tort litigation.

Functionally obsolete bridges are those that are structurally sound but are no longer adequate to serve current traffic demands (7). Most are too narrow, or are poorly aligned with the roadway, or have insufficient under clearances. Narrow bridges seem to be the deficient area of greatest concern. Studies by the FHWA and others have shown that accidents and fatalities are more numerous on narrow bridges (7).

The most common (and successful) claim by plaintiffs who are involved in highway bridge crashes is that the state was negligent in failing to provide adequate warning of a hazardous condition on the bridge (7). Courts which are unwilling to approve damage awards against the

state for narrow or structurally weak bridges appear more willing to hold the state accountable for the far less costly duty of warning the public of the potential hazard. For example, in Barr vs. State [355 so. 2d 1324 (1978)], the court held that the State of Louisiana was liable for the death of a truck driver on a narrow bridge. It ruled that the decision not to widen the bridge was within the State's discretionary boundaries, but the State was judged negligent in failing to warn of the narrow bridge according to the adopted MUTCD.

In summary, courts generally appear to favor enforcement of the duty to warn motorists of potential bridge hazards as opposed to penalizing the State for failing to rehabilitate or replace a narrow or structurally weak bridge. This is usually attributed to the high cost and inconvenience to the public associated with major bridge renovations.

## Fixed Objects Along The Roadway

Many fatal and serious-injury crashes are the result of vehicular impact with fixed objects. Development of breakaway signs and luminaire supports, flexible roadside barriers, and attenuation devices (crash cushions) was stirred by the desire to minimize the number of fixed object crashes. Typical fixed objects adjacent to the roadway include utility poles, signal poles, trees, bridge wing walls, overpass support columns, culvert headwalls, and improper barrier rails.

The recommended treatment of roadside objects involves a three-step process:

1. remove the object;
2. relocate the object; or
3. protect a vehicle from hitting the object.

Tort liability cases involving fixed object crashes usually include the claim that one of the three actions stated above should have been taken by the defendant. The decision concerning which action may be appropriate is site specific. Once again, it is difficult to say that certain objects should always be removed or relocated or that crash cushions should always be installed at certain locations. These decisions are site specific and discretionary in nature.

There are two areas of concern for fixed object crashes: (1) traffic barrier design and installation, and (2) the clear zone concept. Quite often, the plaintiff in a lawsuit will state that the installation of a guardrail would have prevented a fixed object crash. However, it must be understood that the installation of a guardrail (or barrier) is essentially the installation of a fixed object to protect a vehicle from hitting another fixed object. A guardrail should be installed only if it can reduce the severity of an accident with the fixed object that it is designed to "protect". In many cases, the presence of a guardrail will actually increase the possibility of an accident (vehicle with guardrail) but decrease the severity of accidents because guardrails are designed to contain and redirect a vehicle that approaches at a small angle. Proper end treatment is a portion of guardrail design.

The clear zone concept is also presented in many tort liability cases involving fixed object crashes. The concept is based on many research studies whose results advocated clearance of roadside obstacles as a way to reduce accidents. Study results indicated that about 85 percent of all run-off-road crashes involved vehicles that never traveled beyond 30 feet from the edge of the

travelway. Consequently, a clearance of 30 feet was established as the ideal condition for roadside safety.

Current roadway design standards generally support this concept and highway designers should attempt to locate roadside obstacles as far from the travelway as possible. Of course, it is not feasible to design extremely wide bridges and overpasses to accommodate such wide clearances; consequently, design standards provide some minimum clearances that should be maintained for new construction or major reconstruction projects.

It is also not feasible to provide such wide clearances in urban areas. A Policy on Geometric Design of Highways and Streets (8), recommends a range of minimum clearance for different conditions. Clearances vary depending on the type of roadway (its functional classification) and the speed of the roadway. A review should be made of this publication for more detailed information.

Another source of information concerning necessary clear zone widths and guidelines for installing roadside barriers is the Roadside Design Guide (9). Information in this report was used to develop a procedure used by the KyTC to identify and prioritize existing highway sections in need of guardrail (10). This procedure identifies locations which have had a high number of run-off-the-road crashes and developed a rating method. The logic is that a procedure was developed which allows guardrail to be installed at locations which would provide the most benefit.

## Pavement Defects

Pavement defects are of several types including potholes, cracks, and fragmented sections. The government's duty to correct these defects (or warn of them) is related to the government's duty to exercise reasonable diligence to keep highways and streets reasonably safe for travel.

In cases involving pavement defects, the question often arises as to whether or not the plaintiff is guilty of contributory negligence in failing to avoid the defect. In Louisiana, in Hogg vs. Department of Highways of the State [80 So. 2d 182 (1955)] the plaintiff was injured when his motorcycle struck a large hole in a highway bridge and overturned. The passage of heavy traffic had caused chunks of concrete pavement to become dislodged, creating a hole 12 by 14 inches wide which extended entirely through the wood decking of the bridge. The judgment of the court was for the plaintiff since the evidence indicated that the State's road foreman had ample (constructive) notice of the broken condition of the pavement on the bridge. Further, the court held that the plaintiff was not guilty of contributing negligence in failing to avoid the hole, and that the State of Louisiana was liable because it knew of and failed to correct the hazardous condition of the bridge floor.

In all of these cases, the duty of the state to warn of the defect and correct the defect is obvious. A comprehensive program to install adequate warning devices as well as a documented ranking program for the correction of defects are examples of methods to minimize liability of state agencies.



## Traffic Control Devices

Traffic control devices are commonly used to expedite traffic safely and efficiently through potentially high-risk areas such as intersections, curves, or other sections of roadway which may present some type of risk to the motorist. The MUTCD defines traffic control devices as those "used to direct and assist vehicle operators in the guidance and navigation tasks required to traverse safely any facility open to the public" (3).

Traffic control devices may be classified into three basic categories:

1. Signals;
2. Signs; and
3. Pavement markings and delineation.

According to the MUTCD, all traffic control devices in these three categories should fulfill the following five basic requirements:

1. Fulfill a need;
2. Command attention;
3. Convey a clear, simple meaning;
4. Command respect of road users; and
5. Give adequate time for proper response.

In most tort cases dealing with traffic control devices, the MUTCD (or some similar document adopted by the state) is introduced by either the defendant, the plaintiff, or both. The governmental agency (who is usually the defendant) may introduce the MUTCD to prove that recommended standards were followed to make the road reasonably safe for use by the motorist. On the other hand, the plaintiff may introduce the manual to show that the government did not follow its own adopted standards, or that the adopted standards were less than reasonable. These conflicting views are an example of the legal concept of "prima facie"; though the reasonability of the standard is presumed, evidence may be introduced to the contrary.

## Cases Involving Principle Categories Of Traffic Control

### Signals

In the case of Bourgeois vs. State of Louisiana (255 So. 2d 861, 1971), the plaintiff brought suit for the State's negligence in failing to properly maintain a traffic signal at an intersection. The plaintiff encountered a green light at an intersection and attempted to proceed through the intersection when she was hit by a vehicle traveling on the intersecting street. Witnesses claimed the traffic signal was stuck with green showing on the one street and red on the other. The plaintiff's car was hit by another vehicle when the other vehicle attempted to maneuver across the intersection against a red indication. The court found the State guilty of negligence in failing to properly maintain the signal and this was determined to be the proximate cause of the crash. Negligence was determined since the State had received actual notice three days prior to the

crash, yet failed to take corrective action. Moreover, a crash had occurred the day preceding the Bourgeois crash and corrective action had not been taken.

In a similar case involving a malfunctioning traffic signal, Williams vs. Michigan State Highway Department [205 N.W. 2d 200, (1972)], the state was found negligent in failing to reasonably maintain a traffic signal. The case involved a collision at a signalized intersection in which a young girl was severely injured. The girl was a passenger in a car driven by her sister. The plaintiff's vehicle was struck by another vehicle at an intersection controlled by a traffic signal which was displaying green on all approaches. A gas station owner whose business was located on the corner of the intersection testified that on three previous occasions the signal was green on all approaches, and that on two previous occasions the signal was red on all approaches. On the first occasion when the signal was green on all approaches, he notified the police of the problem, whereupon the police instructed him to strike the controller cabinet with a rubber mallet. After he followed these instructions, the signal returned to normal operation. The second time the signal malfunctioned, he struck the cabinet on his own with the same successful result. The third time the signal malfunctioned, showing green on all approaches, the signal began functioning normally before the gas station owner could attack it with his mallet! The courts held that the State had actual notice and a reasonable amount of time to correct the defect, yet failed to do so. The defective signal was determined to be the proximate cause of the accident, and the plaintiff was awarded \$1,200,000 by the judge.

These cases illustrate the necessity of maintaining traffic control devices in proper functioning order. When an agency has actual or constructive notice of a traffic signal malfunction, maintenance and repair work should commence as soon as feasible. Failure to do so opens the door for possible tort litigation.

## Signs

The proper signing of roadway facilities is necessary if tort liability is to be minimized. Of the various categories of signs, tort cases almost always involve only two categories, Regulatory or Warning signs. Additionally, the majority of these cases involve tort suits against governmental agencies for either:

1. Improper placement of a sign, or
2. Failure to place a sign where one is needed

Thus, in Boeing Co. vs. The State of Washington (572 P. 2d 8, 1978), the state was held negligent for its failure to post an adequate number of warning signs. The case involved a truck hauling two jet engines in which one of the engines struck the underside of an underpass and the other was knocked to the roadway. At the time of the accident, a warning sign was in place which correctly stated the height of the underpass and the driver observed the warning sign in sufficient time to stop. The driver attempted to proceed underneath the underpass since he incorrectly guessed the height of his load, and the crash ensued. The plaintiff contended that the clearance of the underpass was so low as to constitute an inherently dangerous condition. The plaintiff argued further that numerous previous accidents at the same site provided evidence that the existing warning signs were inadequate to prevent crashes, and that either truck traffic should have been re-routed or a device should have been installed to warn traffic if their load was too

high to clear the underpass. The court agreed with the plaintiff, citing that the history of frequent crashes indicated the need for a more effective system and that the agency was negligent in failing to provide such a system.

In the case of Lynes vs. St. Joseph Road Department, [185 N.W. 2d 111 (1970)], the plaintiff sued the St. Joseph Road Commission in St. Joseph's County, Michigan, for the Department's failure to maintain a regulatory sign. The plaintiff's car was involved in a crash at an intersection with another vehicle. The plaintiff contended that the stop sign at the intersection had inadequate reflective quality, and since the crash happened at nighttime, he was unable to see the sign in sufficient time to avoid the crash. The court found the Department negligent in failing to properly maintain the sign, stating that "the County has a duty to maintain the highway in reasonable repair so that it is reasonably safe and convenient for the public". The court ruled that signs are part of the highway and are thus part of the safe street doctrine.

## Markings

Roadway markings are a necessary form of traffic control which may be used in one of two ways:

1. To supplement the regulations or warnings of other devices such as traffic signs or signals, or
2. To be used alone to produce results which could not be achieved through use of any other device.

The MUTCD outlines the functions of markings: "... some instances, markings are the only practical means of conveying the desired regulations and warnings to vehicle operators" (3). Sometimes markings make it possible to convey regulations and warnings to the driver without diverting his attention from the roadway. This is an important concept to keep in mind when discussing sign and marking cases. If the driver is supplied with too much information, the drivers' attention may be diverted from the roadway. Likewise, if information is not supplied adequately along the roadway, the driver's attention will be diverted as he searches for the necessary information to accomplish the driving task. The majority of the tort cases involving markings result from either inadequate or incorrect roadway markings, or from markings that have faded too much to be useful.

In Elliott vs. State of Indiana (342 N.E. 2d 674, 1976), the driver of one vehicle on a two-lane state highway attempted to pass on the left side of the vehicle immediately in front of him which suddenly turned to the left onto an unmarked county road. The vehicles collided and the driver of the first car was killed. The plaintiff claimed that pavement markings failed to indicate a no-passing zone, and in addition, there were no traffic signs indicating the existence of a road or left turn possibility. Portions of the state-adopted MUTCD were introduced into evidence. The court found that while there was no absolute duty imposed by statute to provide warning signs and striping at intersections, and while there was no breach of ministerial duty, the State of Indiana had a general duty to exercise care in the design, construction, and maintenance of its highways, and was negligent in not doing so at this intersection.

In the following case, Norris vs. State of Louisiana (337 So. 2d 257, 1976), the court held that failure to comply with the State MUTCD does not necessarily constitute negligence. In this case, a fatal accident occurred at a point known as "Cooper's Curve" on Louisiana Highway 498, a two-lane rural highway. At the accident site, the degree of curvature was 13.75 degrees. A curve warning sign with a 25 mph advisory plate attached was posted approximately 484 feet from the beginning of the curve. In addition, the width of the roadway was 20.17 feet and there was a large tree 9.25 feet from the edge of the roadway. The plaintiff filed suit against the state claiming there were numerous defects present along "Cooper's Curve"; the curvature was excessive and should have been reduced to 6 degrees; reflective curve delineators and center striping, both of which were not present at the site, would have made the curve less hazardous; a right turn sign should have been installed instead of the curve sign; and the tree was located too close to the edge of the roadway. The court held that there was adequate signing and maintenance for the average prudent person; the situation was not ideal, but was adequate. In addition, the court held that the failure to comply with the requirements of the state MUTCD manual does not necessarily constitute negligence. The State was held not liable and there was no recovery.

## Summary

In the preceding three traffic control areas of signals, signs, and markings, the government was found to have a responsibility to the public to provide and maintain facilities which are adequate and safe for the reasonably prudent driver. Strict adherence to adopted MUTCD statutes does not ensure against tort claims, but will certainly minimize recovery in such cases.

A final and important note in the application of traffic control devices according to the MUTCD statutes is the use of the words "shall", "should", and "may" in the description of specific conditions concerning these devices. As addressed in the Manual; these words are defined as follows (3):

shall - a mandatory condition. Where certain requirements in the design application of the device are described with the "shall" stipulation, it is mandatory that these requirements be met.

should - an advisory condition. Where the word "should" is used, it is considered to be advisable and desirable usage, recommended but not mandatory.

may - a permissive condition. No requirement for design or application is intended.

Obviously, the "shall" condition is most subject to tort claims since there is minimal discretion involved in such applications. The "should" and "may" conditions are of a more discretionary nature, and as such, are less subject to litigation. Special consideration should be given to these latter two conditions, however, because a governmental agency may be required to justify why a signing condition which the manual may have recommended with the term "should" was not initiated. Recent court cases have indicated the word "should" has strong implications of "shall".

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## CHAPTER 6 Risk Management Principles

*Since the mid 1970's, there have been numerous books, manuscripts and articles written on the subject of automobile crashes and tort liability. Governmental agencies have not completely utilized this material. Heavy use of legal jargon, the bewildering assortment of articles, and (perhaps) a fear of discovering a self-incriminating piece of information are a few reasons that the articles have not been heavily utilized.*

*This chapter contains summaries, by topic, of actions being taken to reduce liability across the nation. This information was gathered through a literature review. While reading the summaries, several points must be kept in mind:*

- 1) These are solely the author's condensations of many pages of technical literature, and have not been issued or endorsed by any agency.*
- 2) These are not to be considered as a euphoric solution to the liability problem. They are examples of things that seem to be working at various locations across the nation.*
- 3) In deciding which, if any, of the ideas to adopt, public entities should carefully consider each item (or combination of items) in light of the local situation.*

*The literature review was performed to simplify a complex situation, and to help responsible officials select actions to reduce traffic crashes and related tort liability exposure.*

### Risk Management

Tort liability must be managed (1). A successful risk management program involves the implementation of both risk finance and risk control techniques. A risk management program is desirable and necessary to achieve the following three important goals:

1. Minimize the potential number of lawsuits being filed;
2. Minimize the number of lawsuits lost; and
3. Minimize the damages from lawsuits lost.

From the standpoint of achieving these goals, several desirable elements should be considered when developing a risk management program. Risk finance techniques, which have been discussed previously, are generally most useful in achieving the third goal: minimizing money damages to the agency from lawsuits lost. Risk control techniques, on the other hand, are useful in achieving all three of the goals. The remainder of this chapter will cover various risk control measures and their applications in a successful risk management program.

## Accident Reduction Program

The heart of any good RMS action should be a program to reduce crashes, injuries and fatalities. Realistically, we must recognize that we can never eliminate all traffic crashes, but we may be able to decrease the number of collisions by altering the roadway environment. Specifically, emphasis should be placed upon improving situations and locations, which have demonstrated a potential for high risk.

The crash reduction program might proceed in the following manner:

1. Ensure that local police know why crash data is needed, that crash reports are correctly filled out, and that they are filed in a manner that facilitates cross classification and retrieval;
2. Prepare a high-crash situation or location list;
3. Look for patterns of crash types and causes;
4. Develop alternative corrective measures for each site, and determine the most cost-effective treatment;
5. Develop a priority list among competing sites, and program corrective actions based upon the list;
6. Erect warning signs at sites which cannot immediately be repaired, or take routine maintenance actions to improve safety at the site;
7. Review projects after completion;
8. Periodically reassess the priority list and the need for warning or minor improvements at sites not yet completed; and
9. Keep good records of all portions of the program.

Obviously, there are many details, which might be added to the above list to specify the manner in which the individual tasks are performed. The details vary with type of highway, degree of hazard, and other factors.

High crash locations can be identified by reviewing the accident data. In the simplest case, police crash reports may be examined and crash locations marked with pins on a street map. On the other hand, the Kentucky Transportation Cabinet and a few large cities have automated records of accidents, and use computers to monitor traffic crashes. Computer programs are used in crash reduction efforts, including calculating crash rates for state routes and finding high crash locations. This data is routinely provided to cabinet employees or public officials. Employees of the Transportation Cabinet may obtain the appropriate crash data by contacting:



Crash Surveillance Section  
Division of Traffic Engineering  
Kentucky Transportation Cabinet  
State Office Building  
Frankfort, Kentucky 40622  
Telephone: (502) 564-3020

Officials of local public agencies in Kentucky (for example, county road officials) may gain access to this data by contacting the local Highway District Office. Local agencies (sheriff's office, police departments, etc.) should be consulted first, because they originate this data, and their information is more likely to be up to date.

Once the high-crash situations or locations are known, patterns of crashes should be identified and matched to causes if possible. This may be as simple as reviewing a few crash reports to see the types of crashes occurring at an intersection, or it may require using supporting data (collision diagram, condition diagram, traffic counts, warrant analysis, summary of key facts, field observations, etc.) for complex locations. Procedures for making these studies are well documented (1,2,3) and are outlined in more detail in another chapter. Likewise, processes for matching corrective measures to crash patterns, and for choosing the most cost-effective improvements, are well documented in the same references.

In addition to examining individual crash locations, it may be prudent to develop programs to remedy system wide deficiencies. For example, the Transportation Cabinet has made special studies of items like railroad crossings, roadside obstacles, and other major topics.

In summary, good crash reduction programs may take many different forms. Discretion should be exercised in devising a program to fit the local situation. Good programs share several characteristics:

1. They require good crash reporting (including an accurate method to identify the crash location),
2. They include periodic review of crash data,
3. They identify areas and situations of high risk,
4. Corrective actions are directed where they will do the most good,
5. A program of improvement is developed to optimize use of resources (establishing a rational priority system for making safety improvements is important in spending safety funds wisely),
6. Motorists are warned of known defects until they are repaired,
7. Completed projects are evaluated, and
8. Good documentation is maintained.

A concerned, aggressive attitude on the part of governmental officials and employees will help. Discretionary decisions must be made to establish a productive safety program, and dedicated employees are needed to carry it out.

Routine inspection of "high-exposure" crashes, those that have a high probability of a lawsuit, would be an obvious method of preparing for suits, and of gaining direct knowledge of crash situations. This is also a good way of minimizing the problems associated with attempting to recreate crash scenes many months after the date of the crash. Defendants may not learn that they are being sued until it is too late to gather first hand knowledge of the scene. The first significant question that must be addressed is, "what is a high-exposure crash?" Any crash that results in a death or major injuries has a much higher potential for lawsuit activity than one involving only minor injuries or property damage. If multiple deaths or major injuries are involved (e.g., a bus accident or several automobiles in a multiple collision), then the potential for lawsuit activity increases. Each public entity will have to decide which crashes warrant immediate investigation. As a general rule, all fatal crashes should be considered as "high-exposure" accidents. Injury crashes will need to be dealt with on an individual basis.

Other "high-exposure" crashes are identified by the conditions of the crash. If much publicity is provided, the potential for lawsuit activity will be increased. If a specific claim of a roadway deficiency is made by a witness, the investigating officer, or by an individual involved in the crash, the potential of lawsuit activity will be increased. These claims may be similar to one of the following:

- "There was a shoulder drop-off that caused me to lose control of the vehicle."
- "There were not any signs warning me of this problem."
- "The signs confused me."
- "The road surface was so slick that I could not even stand up on it without falling down."
- "I hit the pothole and lost control and hit the other car."
- "I hit that puddle of water and lost control."
- "The signal pole was located much too close to the road."
- "This is the 10th crash like this one that I have investigated this year."
- "The weeds were so tall that I could not see anything traveling down the road."
- "The traffic signals were apparently showing GREEN in all directions."

## Notice of a Defect

Once a public entity has notice of a defect, a duty arises to repair it or to warn the public until it can be repaired. Notice can be obtained in three ways:

1. **Actual Notice:** This is the simplest form, such as a complaint call. It is important that the notice be properly recorded and that an appropriate response be taken. A planned program of standby crews and spare parts may be necessary for calls after normal work hours.
2. **Constructive Notice:** If a defect exists for an unreasonable length of time, the agency should have discovered it. All employees are usually considered agents of the government, and if they observe defects (or should have observed them), constructive notice may have occurred. Educational programs become important in making employees aware of the need to notice and report defects.
3. **Notice By Own Actions:** If the entity's own actions cause the defect, notice is not required. For example, if a poor repair job leaves a defect, then notice of the defect exists already.

A separate section of this report has been devoted to notice of defects to emphasize that notice does not have to be actual or direct, and that the government may be liable for failure to act after receiving notice. All public employees should be trained to look for defects and to report them promptly. Provisions should be made for immediate response, and for warning the public.

## Action On Complaints

A procedure should be established for receiving complaints, and if possible, a single person should be designated to receive and handle them. Upon receiving a notice of a defect, this person should:

- 1) Record key information as required by the complaint form.
- 2) Determine the severity of the defect and the appropriate response action. If the nature of the complaint is:
  - a) Routine, file a normal work request.
  - b) Critical, call for a maintenance crew to investigate and repair the problem.
  - c) Questionable or unknown, call for (or perform) a field visit to confirm the nature of the problem.
- 3) If needed, call for law enforcement control of dangerous sites, and instruct maintenance crews on the use of temporary control devices.

The person handling complaints, and a sufficient number of backup personnel, should receive detailed training. Experience and good judgment are desirable characteristics for these persons to possess.

It is advisable to adopt a standard procedure for handling complaint calls, and to adopt a standard data form to record key information:

1. The time the complaint was received;
2. The name, address and phone number of the person who made the complaint;
3. The time the maintenance crew received notice;
4. The time the crew responded;
5. The time the repair was completed;
6. What trouble was found by maintenance personnel;
7. What repairs were made; and
8. What materials were used. (5)

The forms should be prepared in a timely manner, completed, dated, signed, and filed in a reasonable manner (1).

It is important to maintain records of complaints and response actions. Periodically review these files to ensure that corrective actions have been completed, and to analyze patterns, etc., in order to improve agency response.

Though the documentation of defect notices is important, caution should be exercised in the written description of such complaints. The description should be as objective as possible. Words such as "hazardous" or "unsafe" should be used sparingly or avoided. Only facts should be recorded, not opinions (1). The documentation should be prepared in such a way that its authenticity and authorship may be easily demonstrated.

## Maintenance Records

One of the most important aspects of risk management is good maintenance record keeping. Standard forms may be used for acquiring and storing pertinent information for routine maintenance, response to complaints, and gathering information on defects.

Highway agencies regularly perform routine preventative maintenance. Checklists may be used to include items to be checked at each site. These forms should include remarks by work crews and the date. They should be filed for future reference.

Recording and/or documenting agency actions is useful in the following situations:

1. Justification for discretionary decisions;
2. Complaints;
3. Maintenance/Repair activities; and
4. Roadway conditions (Inventories).

## Inventories

A traffic control device inventory is a very useful way to minimize liability suits. It should locate and identify devices, note those which are not in conformance with the MUTCD, find unnecessary devices which should be removed, note those that need replacing due to age or wear, and serve as the basis for a continuing maintenance/ replacement program. Where defective devices are noted, the public should be warned until the defect can be repaired. The warning should not be considered as a permanent substitute for remedial action.

The control device inventory should be updated as a continuing review. The entity should attempt to find and replace defective devices before constructive notice occurs. As old devices are replaced or new devices installed, records should be changed. As defective devices are identified, the inventory should be coded to indicate the need for correction.

A roadway inventory system is another effective tool which usually contains information about roadway conditions and the general roadway environment. Such a file would include such basic roadway information as the number of lanes, roadway alignment, access control, and cross-section information (lane width, shoulder width, clear zone, etc.) (1).

Other types of inventories are also useful in court. Video-logging and photo-logging are two methods of obtaining roadway inventories which are becoming increasingly popular. Such documentation methods are advantageous for two reasons:

1. A large amount of information may be obtained quickly and economically; and
2. Pictorial information is more easily understood by lay persons on a jury than are engineering plans and diaries.

This form of documentation requires timeliness to be useful. If the roadway has changed appreciably since the photo-logging activity, the photographic information should be updated to restore its usefulness.

## Operational Reviews

Public entities are generally immune to liability caused by the design of a highway, where the design is prepared in conformity with established current standards and approved in advance by a public authority. The immunity does not last forever, however. Changed conditions can demonstrate the need for additional or remedial action. Using outmoded standards can also lead to liability.

Operational reviews are used in several situations. First, a review may be conducted after completion of construction (opening day) to determine if the design is functioning properly and to look for unexpected adverse effects. Another review should be performed after traffic has had an opportunity to stabilize and to become familiar with operating on the new facility.

The third type of operational review is a periodic examination of sample sites throughout the jurisdiction. Representative sites should be selected based upon crash history, complaints, geographic balance, and other criteria.

The purpose of the operational review is to check basic design and traffic control elements. If changed conditions have produced a dangerous condition, the hazard should be investigated. Where corrections could produce substantial improvements, they should be programmed. It may be necessary to modify or improve design standards if operational reviews indicate that another design technique would be more appropriate.

A camera, a tape recorder, and a checklist are all valuable tools for performing reviews. It is helpful to develop a standard series of items to check in the field, and to use the list at every site to ensure uniformity.

## Qualified Staff

A critical consideration in any public agency's risk management program is to provide qualified and capable personnel to perform agency duties in a responsible manner. It is generally held that public agency employees owe a duty to the public to provide a reasonable "standard of care". If such care is not exercised, the agency or responsible employees may be held liable for such conduct. Obviously, if an agency is operating with unqualified, incompetent personnel, it will be more difficult to provide a reasonable standard of care.

As a minimum, employees are generally expected to follow guidelines and procedures which have been adopted by the agency. Such documents generally contain information ranging from design criteria to operational policies to procedures for periodic reviews. Strict adherence to such guidelines, standards, and policies will not absolutely guarantee against tort claims. In a court of law, however, testimony to the effect that rules and guidelines were being followed will help prove "reasonableness" since a reasonable person would follow such rules (1). It may be necessary to provide training to ensure employees are aware of their responsibilities.

## Educational Programs

The first aspect of a good educational program involves the public. There is a need to gain public support for the governmental unit's crash reduction program, which should be perceived as a high priority item. The consequences of sign vandalism, techniques for reporting defective devices, and the "cost" of traffic law suits are examples of items which might be kept before the public.

The second part of the educational program might include government employees. Since the courts consider them agents of the transportation department, they need to be aware of their roles as observers and reporters of defects. They might be informed of how to submit a report of a defect, and of the importance of prompt reporting.

Employees of the transportation agency need to be aware of the total safety effort. A crash reduction program or a risk management program will not be fully successful until transportation employees understand it and adopt it as their own. They must feel responsible, involved and

useful in the program. Specific technical training will be needed for employees involved directly with the RMS such as the person handling complaint calls, etc. Maintenance personnel must learn to examine all functions of the traffic control device, not just repair the specific portion reported as defective.

A good educational program must include both initial training and periodic updating. New employees should be indoctrinated, and existing employees should be updated through continuing education activities. Brief (10 to 20 minute) training sessions on a frequent basis have proven to be better than a longer program at less frequent intervals.

## Standards

One way to minimize risk of liability is to operate within accepted standards and guidelines. In a liability suit, the standard may be introduced as defense to show that the entity took reasonable action. Merely going by the book does not guarantee freedom from liability however. The courts have held that on occasion action beyond the standard is required to create "a reasonably safe condition". For example, a city using MUTCD signal clearance intervals lost a suit because they failed to consider that the signal had a heavy volume of high-speed trucks on a downhill route which might need a longer clearance. The same principle applies to construction, maintenance, and other standards.

A word of warning is in order. Adopting a standard is a good way to define the performance level for the local entity, but failure to adhere to adopted standards or guidelines constitutes negligence. Therefore, the standards should be kept current, realistic, and obtainable.

Adherence to agency guidelines and policies brings to mind a potential problem deserving serious consideration: the wording and terminology used in agency documents. This matter is discussed in the following subsection.

## Review of Agency Standards and Policies

The adoption of relevant standards, policies, and manuals by an agency is necessary and useful to:

- 1) Define the manner in which various activities are to be performed, and
- 2) Insure a consistent degree of quality and safety for work performed by the agency (1)

As previously mentioned, such documents also may serve a useful purpose in court, if it can be shown that the agency was adhering to them. On the other hand, if written policies and procedures are not followed, it will be relatively easy for a plaintiff's attorney to establish that a reasonable standard of care was not exercised. In light of this, a periodic review of all relevant documents or manuals adopted by the agency should be undertaken.

One reason for such a review is to determine if the terminology and wording, which may have been appropriate at the time the document was written, are presently applicable. In the past,

manuals were often written with strong language to stimulate procedures of higher quality. In terms of application, little or no leeway was given to achieve general compliance. Now that much of the desired improvement seems to have come about, tort liability is a major concern. The strong language which was chosen to benefit the agency in the past may now make an agency extremely vulnerable to lawsuits (1).

Four important points to consider when reviewing agency policies are the following:

- 1) Are the documents useful and needed?
- 2) Are the documents current and consistent with present policy?
- 3) Are the documents written from a defensive standpoint?
- 4) Are the documents imposed as required "standards" or as general guidelines? (1)

From a liability standpoint, the fourth point may deserve special consideration. It has been suggested that terms such as "standards" or "warrants" may serve as potential traps. It will likely be difficult to convince a jury that any deviation from such a document was prudent or reasonable. As such, the use of terms like standard or warrant should be carefully scrutinized, and in most cases avoided (1). "Guidelines" would be considered as the preferred terminology.

Regardless of whether a document is a standard or a more general guideline, any deviation from such a document may pose problems in terms of convincing a jury that the deviation was a correct engineering decision instead of an omission or oversight. The most important consideration is to provide adequate documentation of such discretionary decisions to show that a conscious decision was made and that guidelines were not merely disregarded.

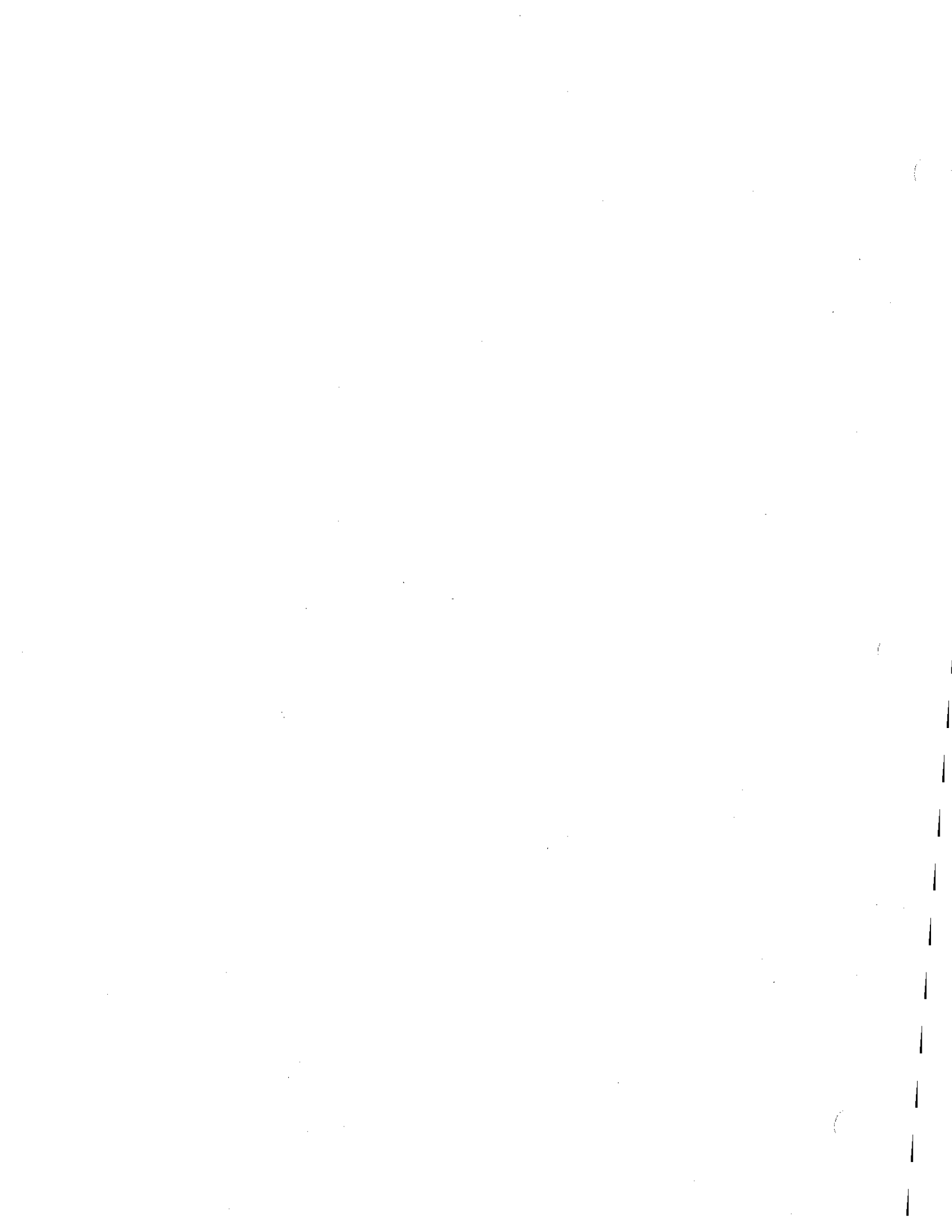
## SUMMARY

Suits alleging that governmental negligence caused traffic crashes are becoming more common, and officials are becoming acutely aware of the subject. To address this problem, a project was conducted to determine ways to devise a Risk Management System to limit governmental liability (6). The objective of this study was to develop a procedure to implement a Safety Management System (SMS) in Kentucky. A recommended process was described. Agencies and organizations were identified which have a role or interest in traffic safety. Contacts were made with these agencies and organizations, and their activities in the area of traffic safety were described. The purpose of these contacts was to establish a safety inventory for the state.



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## CHAPTER 7      Accident Reduction Programs

*Crash reduction efforts come in many forms. They may be as casual and simple as reviewing a few copies of police crash reports to look for patterns of crashes. They may be formal and complex, utilizing computers to sift large data bases, and optimization procedures to select improvements for specific sites. This chapter will outline crash reduction programs in general, and will document procedures that may be used to investigate a site with a suspected crash problem.*

### Federal Aid Safety Program

The primary program of the Kentucky Transportation Cabinet dedicated entirely to accident reduction is the Federal Aid Safety Program. The Highway Safety Act of 1973 established five concentrated areas for categorical safety funding, in the following specific areas:

SECTION 203: Rail-Highway Crossings on the Federal Aid System

SECTION 205: Pavement Marking Demonstration Program

SECTION 209: High Hazard Location

SECTION 210: Roadside Obstacle Removal

SECTION 230: Safer Roads Program

Some sections of the act have been deleted since 1973; however, Section 203 and Section 209 money is still available.

### Section 209: Hazard Elimination Program

The Hazard Elimination Program is a federal program that still appropriates money which the state may use on high hazard locations. Approximately \$3,500,000 has been appropriated to Kentucky in past years. On projects which qualify for high hazard funds, the federal money pays 90 percent of the cost and 10 percent is left to be paid by the state or local governing agencies.

Typical projects include replacing and upgrading signs and pavement markings, upgrading traffic signals, installing traffic signals, constructing or lengthening turning lanes, resurfacing slick pavements, and implementing minor bridge treatments. Many other safety improvements are also made with these funds. Typical costs include:

1. Installing or upgrading traffic signals: \$30,000 - \$60,000
2. Constructing turning lanes on existing pavement: \$30,000 - \$100,000

3. Constructing turning lanes (purchase new ROW and widen pavement):  
\$50,000 - \$300,000
4. Typical HES safety project includes both items 1 and 2 (or 3): \$100,000 -  
\$200,000
5. Resurfacing on a curve or within an intersection: \$10,000 - \$50,000

The procedures utilized by the Cabinet for allocation of Section 209 funds are as follows:

1. Potential High Crash Locations (HCL's) are selected through routine Accident Surveillance Section monitoring of accident data for the previous years, or from candidate sites suggested by District or Central Office personnel, or from sites suggested by local officials.
2. If not already done, District employees visit the site, assess the need, and prepare specific recommendations for improvements.
3. Crash data and construction cost data are identified, and benefit-cost analyses are performed.
4. Using a benefit-cost and optimization routine, the data are analyzed and the projects are prioritized by computer, using benefit-cost as the basis.
5. A program document (list of sites and recommended treatments) is prepared and submitted to FHWA for approval.
6. FHWA-approved projects are added to the Cabinet's six-year plan as they are programmed for design.
7. Projects are then authorized for construction as funds become available.

### Section 203: Rail Highway Safety Program

The Federal Aid Safety Act of 1973 and subsequent safety acts allocated funds for the upgrading of hazardous rail-highway crossings located on Federal Aid System roads or on off-system roads. The purpose of this program is to reduce fatalities, injuries and property damage through improved rail-highway grade crossing safety. For crossing improvements, the funding ratio is 90% federal funds and 10% state or local governing agency funds.

Typical types of rail-highway improvement projects are the installation of standard signs and markings at all crossings, installation of crossbucks, installation of active warning devices, crossing illumination, crossing surface improvements and separation or relocation to eliminate at-grade crossings.

Typical costs for some of these types of warning devices are as follows:

1. Signs and Markings: \$1,500
2. Standard flashing lights and bell: \$40,000
3. Standard lights, bell and gates: \$70,000
4. Cantilever signals and bell: \$50,000
5. Cantilever signals, bell and gates: \$80,000
6. Grade separation: \$1,000,000 - \$3,000,000
7. Standard surface improvements: \$5,000
8. Rubberized crossing surface: \$15,000 - \$30,000

The procedures used to fund a rail-highway project are much the same as those outlined for Section 209 funds, except that the criteria used to define high accident locations are different.

### Additional Uses of Crash Data

In addition to the Federal Aid Safety Program, the Kentucky Transportation Cabinet utilizes crash data in many other ways to enhance safety, and provides crash data to other users upon request. Several of these uses are listed as examples:

1. Generate special reports for the crash surveillance program. These are predominately "build up" reports, where the continued accumulation or build up of crashes at a site leads to its inclusion on a computer summary report.
2. Provide "overnight reports" for specific locations for specific time periods, upon request by Cabinet District personnel or public agency officials.
3. Special studies of crash characteristics and types are performed to provide input to administrators for use in discretionary decisions while formulating policies.
4. Provide detailed crash listing and summary information for use by Cabinet personnel in evaluating potential safety enhancements for all 3-R safety projects.

There are many other uses of crash data, but the foregoing list illustrates typical applications.

## Other Safety Improvements

The major existing Cabinet safety effort is the Crash Surveillance Program, which identifies and analyzes sites for improvement. Funds to construct major safety projects usually come from Section 203 and 209 programs; however, state moneys are used for many safety projects.

Crash data may be used as a planning tool to help locate sites that need improvements, and to set priorities among sites competing for the limited available funds. As a general rule, those safety projects which are low cost in nature are usually handled with existing maintenance funds or other state funds. When the safety improvements are expensive or require extensive construction work, it is usually referred to categorical safety or construction funding programs.

A number of safety improvements are included as a part of most reconstruction or upgrading projects. Current design standards are applied, on a project by project basis, to produce safer roadways than existed prior to the project.

Crash data is used in the Drive Smart programs. For example, crash data were used to identify highway corridors for increased law enforcement activities, education programs, and engineering improvements.

Cabinet and local government employees may identify potential sites for safety treatment. The investigation may indicate that the appropriate treatment is inexpensive (such as signs, pavement markings, or shoulder work). When this occurs, the normal procedure is to improve the site, using routine maintenance funds to abate the problem. The key factor is finding the cause of the crashes so that corrective measures and their costs can be identified. Once these costs are known, the appropriate state or local funding mechanism can be utilized. The rest of this chapter is devoted to procedures for investigating crash problems at individual sites. This information can be used while making crash studies.

## Crash Analysis At Individual Sites

Once a hazardous location has been selected, an employee can proceed through a series of work steps to identify the cause of the problem, to find a solution, and to implement the best improvement to remedy the situation. The general sequence of work steps is fairly well defined:

- Crash data and summary reports are obtained,
- Crash patterns are isolated,
- The cause(s) for the patterns are identified,
- Possible improvements are matched to the causes,
- The best improvement is selected,
- The improvement is implemented, and

- The site is evaluated to determine if the improvement worked.

This workbook will concentrate on the first three topics, although all of them are necessary to conduct a full-scale accident reduction program.

Crash Patterns. These may be identified by combining the information from collision diagrams, condition diagrams, summaries of crash characteristics, field observations, traffic parameters (speed, volume and turning movements) and other data specific to the individual site.

The majority of the investigator's time will probably be spent in preparation and analyzation of these work steps.

Crash Causes and Improvements. Once the crash pattern has been isolated and identified, the cause can be pursued. This may be as simple as replacing a stop sign, or it may be very difficult to cure because several factors have combined to cause the collisions. In the second case, a great deal of careful effort will be required to locate the most probable causes. Researchers have developed lists of the most likely causes for certain patterns of crashes to aid in the diagnosis, and a sample table is included later in this chapter. Tables of improvements were developed in a similar manner. A sample of this type of table has also been included.

Other Steps. Identifying, implementing and evaluating the improvement are the remaining work steps. However, detailed instruction in these areas is beyond the scope of this course.

### Collision Diagrams

A collision diagram is a visual summary of the crashes which have occurred at a particular location. It is prepared to identify accident patterns (and thus causes). Rather than having to look through numerous crash reports, the information is condensed and placed on a single diagram. The investigator does not become distracted or bored while turning from page to page and can concentrate on finding crash patterns.

Data Required. A sample collision diagram is shown as Figure 1. Its main purpose is to display the location and direction of travel for vehicles and pedestrians prior to the collision, and to give clues to the intent of the parties involved. The diagram contains a wealth of data, including general qualifying information such as:

- The location,
- The street or highway names,
- The investigator's name,
- The study period, and
- The traffic control devices.

In addition, detailed data is provided for each crash, including the following (1):

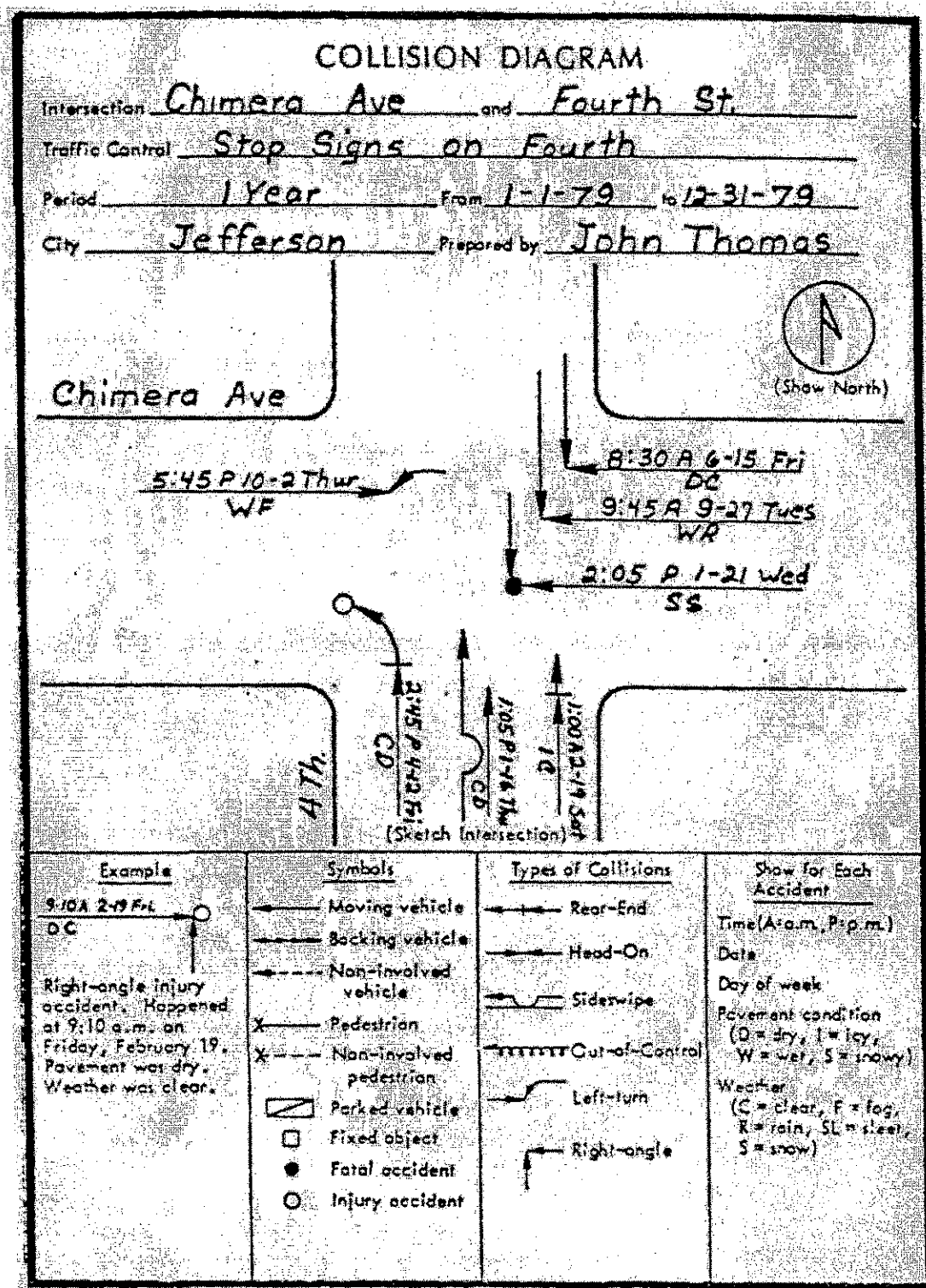
- Type of crash,
- Severity (property damage only, injury, or fatality),
- Time of day,
- Date,
- Day of the week,
- Pavement condition (wet, dry, icy),
- Weather (clear, fog, rain, sleet, snow, etc.), and
- A special note if the crash happened at dawn, dusk, or in darkness.

Data Coding. In order to place information from multiple crashes on a single diagram, it is necessary to reduce the data to codes and symbols to conserve space. The bottom of Figure 1 shows many of the commonly used symbols. These symbols may vary slightly from location to location as alternate or additional symbols are adopted to suit local needs.

Data which cannot be easily represented by a symbol is presented in an abbreviated code form. The lower right hand corner of Figure 7-1 contains several examples of these codes. For instance, the letters D and C indicate dry pavement and clear weather respectively. Engineers often enlarge the codes to represent other items pertinent to their investigations.



Figure 7-1, Typical Collision Diagrams



Source: Identifying Alternative Highway Safety Improvements, A Self-Instructional Text, Institute of Transportation Engineers, 1977.

Types of collisions are indicated by varying the manner in which the arrows are drawn. Rear-end, head-on, right-angle and other collisions are defined by such variations. They make it possible to recognize patterns by looking for groups of collision types.

Preparing a Collision Diagram. The diagrams are relatively simple to prepare. They may be drawn freehand, without emphasizing the exact location of accidents. The following list summarizes the principles involved in plotting diagrams (2, 3):

- Collision diagrams are not drawn to scale,
- Travel direction is important, but exact location is not,
- Diagrams are usually prepared for the most recent one, two, or three years of data, depending upon the number of accidents,
- Note any major changes that have occurred and do not include accidents that occurred before the change,
- Patterns are important, and
- Include non-involved vehicles and pedestrians.

The advantages of using a prepared form include having a handy list of symbols and codes, blanks to remind the user of key information, and standardization. The investigator must use care to ensure that symbols used in constructing a diagram correspond with those shown on the particular form being utilized.

### Condition Diagrams

A condition diagram is a map that contains the physical characteristics of a site. Unlike the collision diagram, it is a scaled drawing which represents the accurate location of objects influencing the crash. The purpose in preparing it is to relate crash patterns, as found on the collision diagram, to the roadway and operational elements at the hazardous location.

### Summaries of Crash Characteristics

In addition to preparation of collision and condition diagrams, a third source of data is usually developed. Crash characteristics are tabulated and examined in the search for patterns. A series of summaries can expose factors that may not be obvious on the diagrams. For example, rush hour crashes that occur only on wet pavement could be identified quickly through a summary table, while they may not be evident on a diagram.

Here are the most important characteristics to summarize (1):

- Time of day,
- Day of week,
- Month,
- Road surface condition,
- Weather,
- Light,
- Crash type, and
- Severity.

It may not be necessary to tabulate all of these items. The investigator should prepare as many summaries as necessary to develop a feel for the characteristics of crashes at the particular location before moving to the next step.

### Field Trips

There are some types of information that can only be gathered by going to the site and observing conditions. For example, a stop sign might have become faded and hard to read. The investigator would not be able to isolate this problem from the diagrams and summaries. The next few paragraphs will describe the types of procedures that should be used during field trips in order to maximize the amount of data gathered by the observer.

Preparation for the Visit. Too often an investigator has gone to a hazardous location, performed an investigation, and returned to the office to discover that valuable information had been overlooked. The investigator can minimize this type of error by thorough preparation prior to visiting the site. Collision and condition diagrams, crash characteristic summaries, speed profiles, and traffic volumes might be reviewed to acquaint the investigator with the situation being studied. He or she may find it appropriate to make notes about confusing items so that they may be checked in the field.

Care must be used in selecting an appropriate time for the visit. If the data indicates a unique situation (such as rush hour crashes), the observation period should be timed to include the unique occurrence. In the absence of a specific time associated with the collisions, two visits are recommended, one should be made during daylight and the other at night. The dual visits will disclose any visibility problems during either type of light condition.

Observation Techniques. The observer should drive through the site on each approach to develop a feel for the location. It is important that the observer see the site through the

eyes of a typical driver, noting things which might be confusing or which might require exceptional maneuvers by the motorist. Any item that might have contributed to the crash should be noted. Special attention should be given to driver visibility problems during this portion of the investigation.

After having driven through the site several times, the observer should find a good vantage point and spend some time looking at traffic flow. There are a number of items to check. A checklist provides a helpful method to ensure that no important items are overlooked. In the absence of a checklist, the investigator might carefully prepare a list of items to review and questions to answer at the site.

The I.T.E. Manual of Traffic Studies lists eleven questions that the analyst should consider during a field investigation (3):

- Are the crashes caused by physical conditions of the road or adjacent property, and can the conditions be eliminated or corrected?
- Is a blind corner responsible? Can it be eliminated? If not, can adequate measures be taken to warn the motorists?
- Are the existing signs, signals, and pavement markings doing the job for which they were intended? Is it possible that they are, in any way, contributing causes of crashes rather than preventing them?
- Is traffic properly channelized to minimize the occurrence of crashes?
- Would accidents be prevented by the prohibition of any single traffic movement, such as a minor left-turn movement?
- Can part of the traffic be diverted to other thoroughfares where the crash potential is not as great?
- Are night crashes far out of proportion to daytime crashes, based on traffic volume, indicating need for special nighttime protection, such as street lighting, signal control or reflectorized signs or markings?
- Do conditions show that additional traffic laws and selective enforcement are required?
- Is there a need for supplemental studies of traffic movement, such as driver observance of existing control devices, speed studies of vehicles approaching the crash location, and others?
- Is parking in the area contributing to crashes? If so, perhaps reduction of the width of approach lanes or parking-related obstructions in advance of the intersection are causing the crashes?

- Are there adequate advance warning signs of route changes so that the proper lanes may be chosen by approaching motorists well in advance of the areas, thus minimizing the need for lane changing near the crash location?

Design and Geometrics. Traffic volumes and characteristics may change with time. Many intersections become outmoded or deficient in capacity due to these changes. As a result, these intersections become hazardous and crashes begin to accumulate.

The inspector must decide if the physical features of the crash location are adequately serving the existing level of traffic. Poor pavement conditions, erratic vehicle maneuvers, or a condition that violates driver expectancy may indicate that the geometrics need improvement.

Traffic Control Devices. Signs, pavement markings, and signals are examples of traffic control devices. Each control should be examined for three specific reasons. The observer should determine for each device:

- If it is clearly visible and operating as designed,
- If it is properly controlling traffic, and
- If the accident problem can be remedied by altering the device.

It is important for the observer to examine the devices in the same manner that an unfamiliar driver would use. For example, faded advisory signs would not be important to a local driver, but could cause an out-of-town motorist to miss important information.

### Identifying Causes And Selecting Improvements

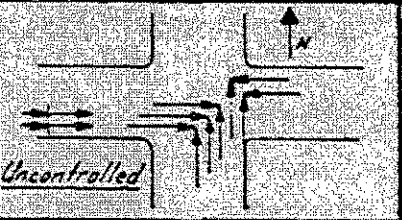
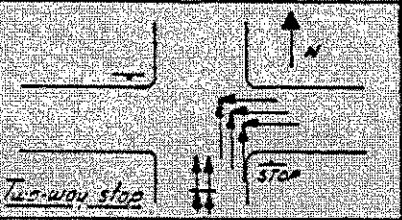
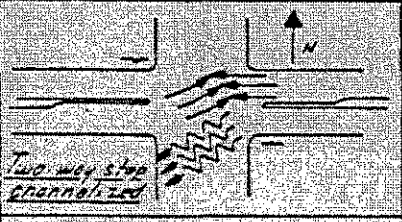
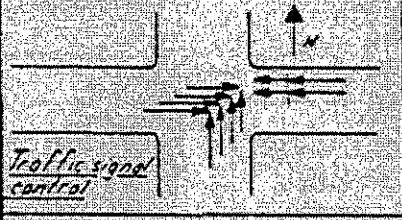
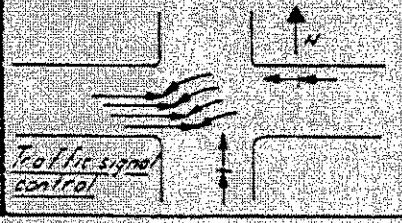
After the data gathering and preparation has been completed, the investigator will have collision and condition diagrams, summaries of characteristics, field observations and other information with which to work. At this point, he or she should concentrate on the most pertinent data items from these multiple sources. Any patterns discovered on one source should be confirmed, where possible, using other sources.

Collision Diagrams. This document is usually the key to identifying crash patterns. The first step in the analysis is to group similar crashes to see if one type dominates. If this occurs, the pattern recognition process might be finished. If several groups of patterns are obvious, or if no pattern can be found, then the analyst must carefully review the summary of characteristics and field observations for further clues.

Once a pattern is found, the condition diagram should be consulted to see if there is an obvious cause. For example, a series of rear-end crashes on the collision diagram, combined with numerous wet-weather crashes in a summary table, might be tied to slippery pavement on the condition diagram.

A good example of supplying possible explanations for obvious crash patterns may be found on Figure 7-2. The five portions of the diagram cover four separate types of control devices. The first part (uncontrolled intersection) will be discussed as an example of how the table may be used. There are two patterns on this part of the figure. The dominant pattern is the right-angle type involving northbound vehicles. Evidently the drivers of such vehicles are not always able to see or to get out of the way of traffic on the other roadway. The figure lists the two most probable causes as: (1) northbound drivers are not able to see vehicles on the other road due to poor visibility, or (2) excessive speed causes problems in estimating whether vehicles will miss each other, or prohibits northbound vehicles from stopping once the drivers realize the intersection is blocked.

Figure 7-2, Causes for Accident Patterns

ACCIDENT PATTERN	POSSIBLE EXPLANATION
 <p><i>Uncontrolled</i></p>	<ul style="list-style-type: none"> <li>• Poor corner visibility at SE and/or SW</li> <li>• Excessive approach speeds, especially for northbound</li> </ul>
 <p><i>Two-way stop</i></p>	<ul style="list-style-type: none"> <li>• Poor visibility of stop sign at SE corner</li> <li>• Corner visibility and location of stop line at SW corner not compatible</li> <li>• Excessive westbound approach speed</li> </ul>
 <p><i>Two-way stop channelized</i></p>	<ul style="list-style-type: none"> <li>• High approach speed and stopping sight distance inadequate for westbound</li> <li>• Edge of pavement delineation and width inadequate at SW corner</li> <li>• Visibility for left-turning drivers, west to north, is poor</li> </ul>
 <p><i>Traffic signal control</i></p>	<ul style="list-style-type: none"> <li>• Visibility of signal heads, for eastbound, northbound, and for westbound is poor</li> <li>• Pavement surface for westbound is poor</li> <li>• Stopping sight distance and queue lengths for westbound are not coordinated</li> </ul>
 <p><i>Traffic signal control</i></p>	<ul style="list-style-type: none"> <li>• Visibility for left turning drivers, east to south, is poor</li> <li>• Approach speeds from the west are too high</li> </ul>

Source: Design Of Urban Streets, Technology Sharing Report Number 80-204, Federal Highway Administration, Washington, DC, January 1980.

An excellent discussion on how to relate patterns and causes is found in Reference (2). Many types of crashes are covered, including right angle, rear-end, side-swipe, and non-involved vehicle types.

Pattern Cause Treatment Tables. Several of these tables have been developed in recent years. In general, they try to define causes for specific crash patterns, and then try to suggest as many realistic improvements as possible for the causes.

An example table has been included as Table 7-1. The information in it came from various sources, and illustrates that many approaches have been used in the past to solve the problem of matching patterns to improvements. The important point is that such tables provide instant access to techniques used for crash reduction.

**Table 7-1, Typical Pattern-Cause-Improvement Tables**

<b>Accident Pattern</b>	<b>Cause of Problems</b>	<b>Items to Check or Common Improvements</b>
Right-Angle Reference (4)	Right-of-Way Assignments	Relationship of control to design Visibility of traffic control devices Sight distance to intersection Visibility of approaching vehicles Types of control present Amber time on signals Sun blindness Interference of commercial signing Placement of traffic control devices
Right-Angle Reference (1)	Restricted Sight Distance	Remove sight obstructions Restrict parking near corners Install yield signs, see ref (5) Install stop signs, see ref (5) Install warning signs, see ref (5) Install signals, see ref (5) Channelize intersection Move near-side bus stop to far side
Right-Angle Reference (1)	Large Total Intersection Volume	Install signals, see ref (6)
Right-Angle Collision Reference (6)	Restricted Sight Distance Inadequate Signals Inadequate Signs Timing Under Designed	

Using the Tables. An example has been provided to illustrate how improvements may , be selected. The initial diagram on Figure 2 will be analyzed to compare the recommendations in Table 7-1. This is the example used previously, a right-angle crash pattern at an uncontrolled intersection. Possible causes for the pattern and suggested improvements are compared in Table 7-1. Even though the solutions come from several sources, the same terms show up throughout the table:

- Visibility ...of devices,
- Visibility ...of vehicles,
- Sun blindness,
- Sight distance,
- Interference of...signing,
- Remove sight obstructions,
- Inadequate signals,
- Inadequate signal timing,
- Amber time,
- Install control devices, etc.,

Usually these tables present as many practical solutions to the problem as possible, and the investigator must choose the most appropriate.

There are many occasions when no one pattern dominates the collision diagram. In such cases, it may be difficult to identify the best solution. An intensive screening of all data should be conducted to give clues as to the best solution. It may be that several improvements must be implemented simultaneously to solve the problem. There may be no exact answer to a complex crash problem, and the investigator must strive to match patterns and improvements to the highest degree possible. Experience in crash studies greatly aids this action.

## Summary

The techniques in this chapter generally provide the best methods available to reduce crashes, whether by the Federal Aid Safety Program or by other means when resources are limited. They are not fail-proof, mandatory, "cook-book" techniques that automatically ensure that the optimum improvement will be implemented. Rather, they offer opportunities to exercise good judgment in attacking a complex, costly and tragic problem.



## REFERENCES

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6. Alabama CORRECT Investigation Manual, State of Alabama Highway Department, 1974.



## CHAPTER 8      If You Are Involved In A Suit

*If national recent trends hold true, Kentucky government managers and employees may be involved in an increasing number of tort liability suits over the next few years. They can expect to spend substantial time preparing for and defending these suits. In addition, employees will be called upon as third parties to testify as expert witnesses to items such as which standards governed a crash location. This chapter provides practical advice on how to prepare for and handle these situations.*

### Release Of Information to Attorneys

During the initial stages of a trial or potential trial, the plaintiffs attorney is trying to decide if he has a case, how strong his case is, and who to sue. He (or one of his investigators) may visit the transportation agency's office for his general education or to begin to gather evidence.

Public records in Kentucky are subject to the Open Records Statute (KRS 61.850 to 61.884). Virtually all of the documents handled by members of the Kentucky Transportation Cabinet come under this act, with a few exceptions (such as some types of negotiations while in progress, some types of personnel investigations, etc.). The public is allowed to inspect and copy documents as part of the statutes.

Administrative regulations have been prepared to carry out the intent of this legislation. Under them, each department of State government is required to appoint a "records custodian" and to post this Cabinet, the Commissioner of the Administrative Services Department has been designated as the custodian. The administrative regulations require persons seeking information to make their request to the custodian in writing. The custodian then either releases the information, or serves notice that the information cannot be made available. There are many other details to the regulation, and affected public employees are encouraged to consult their agency's attorney.

If you are approached for information, refer the request to the records custodian. If the custodian requests that you supply information to a person or group, courteously comply. It is a good idea to keep a record of information dispensed in this manner in case a suit develops. You may also sometimes decide to notify agency attorneys if it is apparent that information is being gathered for a suit.

The attorney's request must be reasonable. Where the request is specific and the attorney knows what he wants, it should be a simple matter for you to provide the information. Often times this is not the case, and you may have to help the attorney deduce what he needs. It may be a matter of not knowing the correct nomenclature to ask for what he knows he needs. You may have to provide a limited amount of assistance as a matter of courtesy.

At some point, it may become obvious that the attorney does not know what he needs and is "fishing," trying to "catch" information upon which to begin a case. Normally, you are not required to respond to these types of questions. When you suspect that this is the situation, excuse yourself, go to a telephone and call your agency's attorney for advice.

Attorneys are generally not allowed to ask broad, sweeping questions that require universal answers, i.e., "List for me all of the times you have ever reviewed a roadway for maintenance needs." A question must be realistic and within your realm of knowledge before you may be required to answer it. It also helps to remember that "I do not know the answer to that question" is always an appropriate response when it is how you truthfully feel.

In responding to questions, it is helpful to consider yourself as a courteous, public minded employee, and to respond in line with the "Tips For Witnesses" listed later in this chapter.

## If You Are Subpoenaed

Subpoenas are a routine and normal portion of a court case. If you receive one, the first thing to do is to contact the appropriate attorney in your agency's central office. Jointly, determine the nature of the subpoena, what the plaintiff's attorney wants you to provide, and whether you are the correct person to respond.

The counselor can help you prepare a response for your testimony by defining the limits of your testimony and the appropriate nature for your remarks. Read the "Tips for Witnesses" later in this chapter. When the time comes for you to give your testimony, relax, then give your remarks with confidence, knowing you have prepared as well as you can.

## Tips for the Witnesses

If you find yourself testifying in court or giving a deposition under oath, remain calm and take your time. Appropriate time should be taken before answering, in case your attorney wants to object to a question. This also allows you to gather your thoughts and give an accurate but brief answer. If questions are answered more quickly on direct examination than on cross-examination, the jury or hearing officer will notice this and may feel that you are in trouble (1). Some general suggestions that can be offered as an aid to being a good witness are:

1. Walk to the witness stand with even steps.
2. When the officer finishes the oath, say "I do" in a loud voice so that all in the courtroom can hear. Do not act timid.
3. Be thorough and frank. Do not be too anxious to please, or too eager to please, or too eager to fight.
4. If you make a mistake or a slight contradiction, admit it and correct it. Do not tie yourself in knots trying to cover up some slip of speech or memory.
5. Keep your temper. Do not let anyone draw you into arguments over trivial points or even important ones. Be firm but flexible.

6. If you cannot answer "yes" or "no", say so, but modify your reply by "under certain circumstances..."
7. If you do not know or cannot remember, say so. These are legitimate answers to the most illegitimate questions.
8. Avoid mannerisms in speech. The habit of prefacing replies with something like "I can truthfully say" may cast unwarranted doubts on your whole testimony.
9. If a lawyer asks: "Are you as positive about this as you are about the rest of your testimony?" - stop. Are you?
10. "Do you want this jury to understand?" Listen closely to that one; if you do not want the jury to understand it that way, make clear what you do want them to understand.
11. If the opposing attorney interrupts you before you had a chance to complete your answer, you should indicate this to the presiding judge.
12. Do not volunteer information.
13. Be brief; just answer the question and stop.
14. Do not memorize any of your testimony.
15. Wait until the entire question is asked before answering.
16. On cross-examination, do not look at your attorney.
17. Keep your hands away from your face and mouth.
18. When addressing the court, use "your honor"; when addressing the attorneys, use their names.
19. During the recess you should not carry on any conversation with other witnesses or parties to the controversy. You should be aloof from everyone except the attorney who retained you to testify.
20. Remember that the witness stand is not a comfortable place for one who is not telling the truth, the whole truth, and nothing but the truth (2).

### The Role of the Expert Witness

The expert witness has much to consider in the giving of testimony while on the witness stand. An expert witness should be able to communicate clearly, and be able to explain technical or scientific subjects and matters in plain, understandable language. Above all, he should not try to impress the jury with his learning and ability, but try to communicate

to them in a way that they can understand. He should have good speaking ability and be definite in his opinions. He should never tender an opinion unless he has one and unless it is sound, based upon good scientific knowledge and experience, and should stick to that opinion once it has been rendered.

Expert witnesses should follow certain guidelines in their preparation of, and giving of, testimony. The most obvious guideline for an expert witness is ALWAYS tell the truth. Of course, lying under oath is a crime and for that reason alone should never be considered. Honesty is the best policy not only from a moral and legal standpoint but also because it is the best way to get across the true facts to the trial of the case (1).

Litigation should be a reach for truth. The court is looking for guidance in its decision and the best way to get it in technical matters is from expert testimony. It should be the expert's intention to provide the court with as much unbiased background and detailed information as he can. This will better enable the court to adjudicate the matter correctly and, hopefully, determine as much of the truth as possible.

The expert witness should never be an advocate. The lawyer is supposed to be the advocate - to take sides in the matter before the court. The expert witness is decidedly not there to take sides, hard as it may be to avoid being prejudiced on occasion. It is certainly only human for the expert witness to try to help the attorney who engaged him, especially if he is directly involved in the case. Or, if the expert is a consultant engaged for a specific litigation, it would be reasonable to expect at least some bias for the side paying the bills. The expert has certainly heard more favorable testimony from one side than from the other. The tendency toward bias must be resisted if the expert's credibility is to be maintained (1). The better course is to steer clear, as much as possible, of personal involvement in the case and answer all questions without the intent to help either side.

Temperament is important. If an expert finds it difficult to accept the fact that anyone would dare question his knowledge, then he belongs in an office. One should not be an expert witness if he finds it difficult to keep complete control over his emotions. If the attorney expects to get the best result for his client by attacking the expert witness, that's what he will do (1). He has to be careful though, because sometimes if the expert stays cool and answers responsively without trying to hide anything, the tables can be turned the judge and jury can be very sympathetic to the expert under the right circumstances.

Equally important to keeping emotions under control on the witness stand is answering questions responsively. That means listening carefully to the specific question, which is asked (not anticipating another question), and answering it as briefly as is reasonably possible. The attorneys for both sides have reasons for each specific question. They are not usually interested in any further explanation. Sometimes the judge will direct a specific question at the witness, and that is one time when the expert can expand on his answer (1).

Another very important guideline while on the witness stand is that one should always stay within one's own area of expertise when testifying. In a court of law an opposing attorney can make mincemeat of the expert who tries to extend his testimony into uncharted water outside the scope of his education, experience and background.

The attorney in direct examination should always know the answer that you will give to any question he asks. In cross-examination, one should be aware that the effective lawyer can sometimes lead the witness and extract testimony, which the witness did not intend. The expert should not permit himself to be led by the nose by either attorney. He should try to ignore adjectives and adverbs which tend to channel him toward a specific answer and reply honestly based only on his own knowledge and opinion of the case (1).

After testimony has been given on the witness stand, good trial lawyers will sometimes request that the expert sit at counsel's table during the remainder of the trial. The purpose of this is to provide the attorney with background information of a technical nature as the trial develops, which may be useful to the court (1). He can help frame questions and interpret answers, especially if the other side's expert is giving testimony. The expert witness should never leave the courtroom after testifying, on the assumption that the attorney is through with him, without first checking that his services are no longer needed in the chamber. He should also not drop out of sight after the case is over. He should be interested in the outcome that may not be settled for some time after the last witness has spoken and lawyers for both sides have completed their summations.

### If Your "Name Is On The Bottom Line"

You may have the unfortunate experience of being named as a defendant in a traffic crash related suit. Upon notification of a lawsuit immediately contact your agency's chief counsel. A preliminary investigation should be made of the complaint, and preparation for trial should begin. For cases involving the State, the Cabinet's chief counsel will organize an investigation and prepare a file to determine if there is liability. If there is liability, the Cabinet may try to settle out of court. If no settlement is possible, both parties will obtain information from one another to prepare for court action. Facts are of prime importance to both the plaintiff and the defendant.

A local attorney will often be appointed to help you prepare your case. A good working relationship should be established with your attorney as soon as possible. Attorneys need to be assured of a reasonable chance of winning a case before investing substantial time, energy and money (3). Once the decision to go ahead has been made, a diligent and complete investigation must follow. In the investigation, a thorough and accurate crash data collection and evaluation program should be followed. The next step in preparing for a trial is selecting the necessary witnesses. You may be called upon as a witness, or to assist in finding appropriate witnesses, and to evaluate their potential contributions to the case.

### Selective Witnesses

Sometimes a law enforcement officer makes a statement at the scene of a crash, which misrepresents conditions or increases the liability of the governmental entity. The officer may, or should, be made a party to the suit (4). Officers are not experts in traffic engineering, roadway design, vehicle ballistics, etc., to the extent of knowing what constitutes a dangerous condition. Yet, statements have been made by officers at the

scene of a crash, which were successfully used by plaintiff's attorneys to win cases. This problem should be resolved by working with the law enforcement agencies.

Cabinet or other governmental employees may be used as expert witnesses in a suit, or they may be needed to advise the government's lawyers. Often, providing technical or organizational assistance during the preparation for the trial may be their most important function.

Generally, an expert is needed if the jury will be helped appreciably, and if general experience of an ordinary person is not sufficient. An expert is not needed if the jury can just as easily determine the answer to the question at issue. An expert witness is one who has acquired by study or experience a special skill or superior knowledge in a particular field about which persons who do not have special training are incapable of forming an accurate opinion or of deducing correct conclusions (1). Expert witnesses differ from ordinary witnesses in that the expert witnesses can state their opinions and conclusions based on fact, whereas ordinary witnesses can only testify to something they said, smelled, tasted, felt, and in some cases heard. The weight that a jury will give to expert testimony will depend upon the extent of the experts' learning, skills, experience, and primarily the foundation and the reasons that they give for their opinion in drawing their conclusions.

The witness should do his research well. Once it has been determined that he is the person for the job, most of the time spent doing the work will not be in actual court time, but in preparation for that day. Usually, a written report will be prepared which will form much of the basis for the attorney's case. Because of the permanence of written information, words must be selected very carefully (words like "reasonable", "never", "absolutely", "definitely".) Every avenue of information should be researched so that full preparation is achieved

### Being Prepared for Trial

Being prepared means visiting and inspecting the site as many times as necessary to fill in the gaps of your knowledge. Being prepared means reviewing files, plans and available data to find all pertinent information. Being prepared means locating all pertinent standards and specifications, and learning how they apply to this case. Being prepared means interviewing your colleagues who may be able to shed additional light on the subject. Being prepared means making the necessary calculations and preserving them for future reference in case certain lines of questioning come up while you are in the witness chair. In order to be an effective witness, you must be totally prepared.

Promptness and availability by all witnesses, including the expert witness, are two characteristics, which are absolutely essential to the proper management of a case. The witness must schedule his time carefully so that he will be there when he is needed. Conferences relating to litigation should be held in the attorney's office a day or so before trial, especially when experts are involved. Experts are expected to be professional, and their appearance reveals something about their knowledge and ability. The noble intent of an expert does not excuse implied disrespect for the court.



## When All Is Said And Done

Using information collected during the investigation and evaluation program, information received in the depositions and interrogatories, and information obtained in the form of documents, your attorney can prepare for trial in order to successfully defend a lawsuit or win a lawsuit and recover damages.

Your portion of defending a lawsuit can be taken care of by careful preparation of your testimony, and by close coordination with your attorney. Make up your mind to be prepared, to be scrupulous in your testimony, and to represent your agency as well as you can.

After the trial, commit yourself to risk management principles to minimize your chances of having to go to court again. Your time is best spent in providing the citizens of your state with the best roads possible, not in preparing for court!

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## CHAPTER 9

# Detailed Information For Board of Claims Cases Of \$50,000 Or More

As noted in Chapter 4, for the time period of 1981 through 2001, there were 838 cases in which the amount sought was \$50,000 or more. Prior to June 1986, the maximum claim was \$50,000. In 1986, the maximum single award was increased to \$100,000 with a total award of \$250,000 allowed for all claims in a single crash. Starting in July 2000, the maximum single award was increased to \$200,000 with a total award of \$350,000 allowed for all claims in a single crash.

An analysis of these claims by the reason for the claim is given in Table 9-1. Up to two reasons could be listed for any claim. For each reason, the total number of claims is given along with the amount claimed, average claim amount, amount paid, and percent paid.

**Table 9-1, Analysis Of Claims For Claim Amount Of \$50,000 Or More**

Reason for Claim	Number of Claims	Amount Claimed	Average Claim Amount	Amount Paid*	Percent Paid*
Uncovered load	1	\$50,000	\$50,000	\$50,000	100
Object thrown from mower	3	\$300,000	\$100,000	\$113,400	38
Construction – loss of business	4	\$200,404	\$50,101	\$52,267	26
Detour design	5	\$250,000	\$50,000	\$51,895	21
Substandard guardrail	52	\$4,712,400	\$90,623	\$671,723	18
Improper drainage caused accident	120	\$9,922,200	\$82,685	\$1,783,835	18
Lack of stop sign	26	\$2,900,000	\$111,538	\$483,447	18
Hit object on right of way (clear zone)	28	\$2,710,000	\$96,786	\$445,697	18
Shoulder dropoff	51	\$5,129,968	\$100,588	\$791,405	17
Improper construction of median	2	\$200,000	\$100,000	\$32,500	16
Inadequate signing at stop approach	26	\$2,600,000	\$100,000	\$386,300	16
Accident involving KyTC vehicle	42	\$3,600,600	\$85,729	\$415,704	13
Falling road/rock slide	25	\$2,473,887	\$98,955	\$281,212	12
View obstructed	39	\$3,759,427	\$96,396	\$385,887	12
Lack of guardrail	86	\$8,477,500	\$98,576	\$776,628	11
Inadequate traffic control device, work zone	62	\$5,429,854	\$87,578	\$567,102	11
Construction zone – other	19	\$1,725,000	\$90,789	\$127,500	10
Accident due to debris in road	23	\$2,300,000	\$100,000	\$210,200	10
Shoulder related defect	33	\$2,926,500	\$88,682	\$231,856	10
Accident due to pavement	51	\$4,700,000	\$92,157	\$398,202	10

**Table 9-1, Analysis Of Claims For Claim Amount Of \$50,000 Or More Cont.**

Reason for Claim	Number of Claims	Amount Claimed	Average Claim Amount	Amount Paid*	Percent Paid*
Hit tree limb/falling tree	10	\$1,200,000	\$120,000	\$51,000	9
Inadequate/improper signs/markings	150	\$14,877,071	\$99,180	\$982,664	8
Construction damaged property	5	\$325,000	\$65,000	\$22,000	7
Traffic signal malfunction – inadequate	46	\$4,590,000	\$99,783	\$278,196	7
Improperly designed curve	18	\$1,211,500	\$67,306	\$76,702	6
Improper drainage damaged property	17	\$1,356,965	\$79,821	\$66,500	6
Pothole damaged vehicle	2	\$200,000	\$100,000	\$4,750	2
Work zone-flagger related	8	\$700,000	\$87,500	\$12,500	2
Improper speed limit	5	\$550,000	\$110,000	\$3,000	1
Break in pavement	6	\$571,000	\$95,167	\$3,000	1
Pedestrian fall	14	\$1,100,000	\$78,571	\$2,000	0
Miscellaneous	20	\$2,122,500	\$106,125	\$0	0
Road too narrow	8	\$700,000	\$87,500	\$0	0
Pedestrian – other	5	\$700,000	\$140,000	\$0	0
No roadway lighting	4	\$400,000	\$100,000	\$0	0
Hit manhole cover/drain	3	\$151,890	\$50,630	\$0	0
Related to issued license	2	\$200,000	\$100,000	\$0	0
Hit animal	2	\$200,000	\$100,000	\$0	0
Object in road	2	\$200,000	\$100,000	\$0	0
Snow removal - Snow Operation	1	\$100,000	\$100,000	\$0	0

\*For claims in which a decision has been made.

\*\*No cases decided.

While these claims account for only 7.9 percent of the total claims filed, they account for about 87 percent of the amount sought and 72 percent of the amount paid as of the date of this summary. Also, 11 percent of these cases remain open as of this date. These open cases represent approximately \$10.8 million in claims. This shows that the basis and results of these claims should be examined in more detail than the summaries given in Chapter 4.

An analysis of the claims of \$50,000 or more by the reason for the claim is given in Table 9-1. For each reason, the total number of claims for \$50,000 or more are listed. In addition, the total amount claimed, the average claim amount, and the amount and percent paid for claims for which a decision has been made are given. There were 1,026 reasons coded for the 838 claims of \$50,000 or more. The largest number of claims, as well as the largest amount claimed, related to inadequate signs or markings, followed by improper drainage. The improper drainage cases

typically involved a vehicle hydroplaning and losing control. If the claims related to lack of a stop sign or inadequate signing on a stop approach are combined with the general category of inadequate signs or marking, there was more paid in this area than any other. Claims related to shoulder drop-off, lack of a guardrail or sub-standard guardrail, and inadequate traffic control in a work zone also resulted in large amounts paid.

There were 10 reasons which had an amount claimed of over \$3 million. Of those 10 reasons, inadequate drainage and substandard guardrail had the highest percentage paid. Accidents involving inadequate or improper signs or markings, or a traffic signal problem had the lowest percentage paid.

A summary of the reason for claims of \$50,000 or more versus highway district is shown in Table 9-2. The reasons listed in Table 9-1 were combined into a smaller number of reason categories. The highest number of claims related to drainage, road surface condition, and maintenance activity occurred in District 12. There were also several claims involving drainage in District 4. The highest number of claims related to barriers and shoulder condition were in District 4. The largest number of claims concerning a geometric feature (typically obstructed view or improper curve design or super elevation) was in District 1. The highest number of claims related to traffic control in a work zone or a fixed object, which typically involved hitting an object within the clear zone, were in District 6. District 7 had the highest number of claims related to a traffic control device. District 2 had the highest number of claims related to state vehicle operation and construction activity.

**Table 9-2, Reason Versus Highway District for Claims \$50,000 or More (1981-2001)**

Number in Given Category													
Highway District													
Reason Category	1	2	3	4	5	6	7	8	9	10	11	12	All
Traffic Control Devices	17	22	34	26	18	18	39	8	24	5	10	29	250
Drainage	5	8	6	24	5	12	7	7	12	10	14	27	137
Road Surface Related	5	2	4	6	6	13	5	1	8	14	14	23	101
Barrier	8	20	6	21	8	12	19	1	11	9	11	10	136
Construction Zone-Traffic Control	7	5	1	4	9	19	7	4	0	1	2	11	70
State Vehicle Operation	4	10	8	2	3	3	4	3	1	1	2	2	43
Shoulder Related	11	13	5	15	2	4	14	2	5	3	2	8	84
Fixed Object	4	1	1	3	1	7	2	1	1	0	4	3	28
Geometric Feature	15	9	6	13	2	5	4	2	1	7	2	1	67
Construction Activity	1	14	0	2	13	1	4	1	3	0	5	1	45
Maintenance Activity	1	1	0	1	1	0	0	1	9	4	10	13	41
Miscellaneous	1	1	1	0	5	5	5	1	2	2	5	3	31

Following in Table 9-3 is a more detailed description of each of these claims. The county and route on which the accident occurred was obtained along with the amount sought and amount awarded. A more detailed explanation for the basis of the claim is given. This information describes the alleged negligence which led to the claim. In some instances, comments giving more detailed information related to the claim are included.





**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
81-3	Leslie	US 421	\$50,000	Vehicle struck steel beams left on right-of-way and overturned.	\$1,000	DOT left beams on right-of-way.
81-5	Christian	US 41A	\$50,000	A fatal accident in which the traffic signal was not working properly.	0	
81-37	Oldham	US 42	\$61,500	Car went out of control on improperly banked icy curve.	\$61,702	
81-65	Hardin	US 31W	\$50,000	Fatal accident when vehicle lost control due to shoulder drop off and was hit by vehicle in opposing lane.	\$50,000	Gravel shoulder lower than PCC pavement.
81-66	Hardin	US 31W Bypass	\$50,000	Refer to 81-65.	\$50,000	
81-67	Hardin	US 31W Bypass	\$50,000	Refer to 81-65.	\$25,000	
81-68	Hardin	US31W Bypass	\$50,000	Refer to 81-65.	\$25,000	
81-73	Hardin	US 31W Bypass	\$50,000	Refer to 81-65.	\$5,542	
81-80	Grayson	US 62	\$50,000	Injury accident resulted when car broke through inadequate guardrail.	0	
81-123	Whitley	1-75	\$50,000	Rear-end collision into slow moving DOH vehicle traveling in right lane. Alleged that DOH vehicle did not have proper lighting or identification.	0	
81-166	Trigg	Mill Road	\$50,000	Vehicle driven into river because bridge removed with no warning signs.	0	Glenwood Mill Road had not been a state-maintained road since 1965.
81-201	Campbell	KY 8	\$50,000	Pedestrian injured when fell because of hole in pavement.	0	Hole in pavement in parking lot.
81-234	Pulaski	KY 461	\$50,000	Injury accident occurred when car hit pothole and lost control.	0	Car hit embankment and utility pole.
81-290	Bourbon	Peacock Road	\$50,000	Injury accident when pickup ran through wooden rail on bridge.	0	Peacock Road not state maintained. Bridge in sharp curve.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
81-291	Graves	KY 893	\$50,000	Fatal accident occurred when vehicle backed from driveway and did not observe approaching vehicle due to weeds on side of road limiting visibility.	\$17,500	
81-201	Campbell	KY 8	\$50,000	Pedestrian injured when fell because of hole in pavement.	0	Hole in pavement in parking lot.
81-234	Pulaski	KY 461	\$50,000	Injury accident occurred when car hit pothole and lost control.	0	Car hit embankment and utility pole.
81-290	Bourbon	Peacock Road	\$50,000	Injury accident when pickup ran through wooden rail on bridge.	0	Peacock Road not state maintained. Bridge in sharp curve.
81-291	Graves	KY 893	\$50,000	Fatal accident occurred when vehicle backed from driveway and did not observe approaching vehicle due to weeds on side of road limiting visibility.	\$17,500	
81-292	Graves	KY 893	\$50,000	Refer to 81-291.	\$17,500	
81-336	Webster	KY 132	\$50,000	Fatal accident when vehicle lost control due to a shoulder drop off and hit bridge.	\$40,000	Drop off of 3 to 6 inches.
81-359	Campbell	1471	\$50,000	Accident in construction zone involving collision with a highway divider, which was not properly marked.	\$3,500	
81-380	Campbell	Parking Lot	\$50,000	Pedestrian injured when fell in parking lot due to defective pavement.	0	Plaintiff moved to dismiss.
81-406	Fayette	KY 922	\$50,000	Inadequate markings (traffic control) in a construction zone. Fatal accident.	0	At 164 interchange.
81-423	Hopkins	KY 109	\$50,000	Flagman allowed truck to come through dangerous area (injury accident).	0	Flagging for previous accident at request of state police.
81-443	Jessamine	US 27	\$50,000	Vehicle dropped off the shoulder in a construction zone and then overcorrected and hit an oncoming vehicle.	\$52,166	A drop off of 1 to 18 inches was measured. The driver had a BAC of 0.22. The KyTC was found to be 20 percent at fault.
82-294	Larue	US 31E	\$50,000	Fatal accident due to spillage of oil, which was not cleaned from the road.	0	Alcohol and speed involved.



**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
82-298	Pike	US 23	\$50,000	Fatal accident occurred when vehicle hit pothole and lost control resulting in a head-on collision with vehicle in opposing lane.	\$25,000	Partial negligence for claimant. Noted previous complaints about road conditions.
82-299	Pike	US 23	\$50,000	Refer to 82-298.	\$25,000	
82-300	Pike	US 23	\$50,000	Refer to 82-298.	\$25,000	
82-301	Pike	US 23	\$50,000	Refer to 82-298.	\$25,000	
82-302	Pike	US 23	\$50,000	Refer to 82-298.	\$25,000	
82-330	Warren	KY 101	\$50,000	Fatal accident due to inadequate signing. Driver failed to stop at intersection and was struck by a bus.	0	At intersection of KY 101 and KY 1297.
82-370	Pike	KY 194	\$50,000	Injury accident resulting when lost control of vehicle due to water and oil on road.	0	
82-411	Grayson	W.K. Pkwy.	\$50,000	Fatal accident when guardrail end penetrated into the vehicle.	\$50,000	Blunt guardrail end treatment.
82-432	Jefferson	1-65	\$50,000	Vehicle overturned due to detour not in conformity with acceptable engineering standards; inadequate warning signs.	\$13,333	Cargo shifted on truck.
82-481	Knox	Masters Street	\$50,000	Pedestrian injured when stepped in a hole in pavement during repaving operation.	0	Four-inch drop off about eight inches from curb.
82-531	Morgan	KY 205	\$50,000	House and property damaged due to construction (inadequate drainage).	0	Flooded because culverts too small.
82-12	Breckinridge	KY 86	\$50,000	Injury accident when truck ran off road, lost control, and hit opposing vehicle. Alleged insufficient roadway width.	0	
82-16	Daviess	Fairview	\$50,000	Accident involving DOH driver having heart attack.	\$32,287	Driver allowed to drive although previously complained of chest pains.
82-110	Barren	US 68	\$50,000	Fatal accident due to missing stop sign.	\$42, 500	Intersection of US 68 and Old Mayfield Mill Road.
82-125	Jefferson	Unknown	\$138,400	Hit guardrail on icy bridge.	\$138,400	
82-148	Carter	KY 1	\$50,000	Fatal accident when vehicle hit rock on shoulder. Alleged failure to straighten curve and failure to reduce speed limit.	0	Excessive speed was determined to be the cause of the accident.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
82-183	Pike	KY 194	\$50,000	Driver lost control due to shoulder drop off.	0	Collision with opposing vehicle.
82-188	Green	KY 793	\$52, 500	Fatal accident when vehicle hit steel bridge which collapsed. No guardrail on approach to bridge.	0	Bridge was scheduled for replacement. State did not maintain bridge.
82-192	Campbell	Gerger Ave.	\$50,000	Damage to home and unacceptable traffic noise due to construction of 1471.	0	In Bellevue.
82-264	Kenton	KY 177	\$50,000	Pedestrian injured when fell into drain opening left uncovered.	\$500	Decamsey Street in Covington. Hole four feet in depth.
82-291	Pulaski	KY 39	\$50,000	Fatal accident due to water pooling.	0	Highway did not drain properly.
82-292	Pulaski	KY 39	\$50,000	Refer to 82-291.	0	
82-293	Pulaski	KY 39	\$50,000	Refer to 82-291.	0	
82-533	Jefferson	KY 864	\$50,000	Construction caused loss of business due to lack of access.	0	On Poplar Level Road in Louisville.
82-536	Scott	1-75	\$50,000	Tractor-trailer hit raised area in traveled portion of road throwing driver from his seat and around the cab.	\$50,000	
82-551	Jefferson	1-65	\$50,000	Refer to 82-432.	\$16,062	
82-552	Jefferson	1-65	\$50,000	Tractor-trailer overturned on curve on detour.	\$12,000	Contractor had majority of liability.
82-553	Jefferson	1-65	\$50,000	Truck overturned on cure on detour.	\$10,500	Contractor had majority of liability.
82-554	Jefferson	Unknown	\$50,000	Turning left from an intersection and hit in side.	0	
82-573	Jefferson	1-65	\$50,000	Refer to 82-432.	0	
82-600	Perry	US 28	\$50,000	Vehicle lost control on patch of ice. Alleged lack of warning sign and guardrail.	0	No record of accident found.
83-26	Pike	KY 195	\$50,000	Injury accident when vehicle lost control due to pothole and hit oncoming truck.	\$3,200	Pothole was 15 inches wide by 41 long and 5 inches deep.
83-45	Pike	US 23	\$50,000	Injury accident occurred when vehicle left road and hit ditch on shoulder causing loss of control.	\$14,454	KyTC caused deep ditch by periodic cleaning.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
83-98	Carter	US 60	\$50,000	Injury accident due to accumulation of mud on the road.	0	Mud accumulated where coal company constructed a service road.
83-188	Martin	KY 292	\$50,000	Soft shoulder broke away with loaded truck allowing it to go over embankment.	\$37,900	Both KyTC and claimant judged 50 percent at fault. Truck overweight.
83-648	Bourbon	KY 353	\$50,000	Fatal accident in construction zone. Warning devices not proper or adequate.	0	
83-650	Pike	US 119	\$50,000	Had to close business due to traffic flow, dust and mud during construction.	0	
83-691	Wayne	KY 90	\$55,000	Dust in the air from road cleaning and flagman signaled claimant to proceed.	0	
83-719	Boone	KY 16	\$50,000	Injury accident when vehicle ran off road in curve and hit a tree. Failure to warn and provide guardrail.	0	
83-733	McCracken	US 60	\$50,000	Driver confused by traffic controls which had been changed from 4-way to 2-way stop.	0	At intersection of Park Avenue and 8th street in Paducah.
84-95	Warren	US 31W	\$50,000	Lost control on ice and slid into guardrail. Fatality occurred when end of guardrail went through driver's door.	\$37,500	KyTC admitted 10 percent negligence. Blunt guardrail end treatment.
84-98	Graves	KY 3141	\$50,000	Vehicle struck utility pole in narrow median. Pole location was hazardous and markings were insufficient. Injury accident.	\$5,000	Crittenden Lane in Mayfield. KyTC judged 10 percent at fault.
84-173	Elliott	KY 32	\$50,000	Four-year old fell into 5-foot deep hole and broke leg.	0	
84-175	Pike	US 23	\$50,000	Rock and debris fell on car from a rock cut resulting in injuries.	\$200	KyTC aware of condition of rock cut (no offsets in wall).
84-176	Pike	US 23	\$50,000	Refer to 84-175.	\$31,300	
84-226	Jefferson	KY 1932	\$50,000	Pedestrian injured at intersection controlled by traffic signal because signal timing did not allow sufficient time for pedestrian to cross intersection.	\$22,500	Intersection of Breckinridge Lane and Hikes Lane in Louisville.
84-802	Greenup	KY 750	\$50,000	Pedestrian injured when stepped on water meter cover.	0	Cover turned which allowed pedestrian to fall into hole.

Table 9-3, Detailed Information For Claims of \$50,000 or More

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
84-804	McCracken	US 60	\$50,000	Confused at intersection where traffic control had been changed from a 4-way to a 2-way stop.	0	Intersection of Eighth Street and Park Avenue in Paducah.
84-805	Fulton	US 51	\$50,000	Construction limited visibility at intersection. Traffic control devices not adequate. Fatal accident. properly install and maintain traffic.	\$30,000	Embankment on inside of curve limited visibility.
84-931	Madison	KY 876	\$50,000	Injury accident related to failure to signal (specifically, a pedestrian signal).	0	Intersection of KY 876 (Bypass) and Lancaster Avenue.
84-932	Warren	KY 1297	\$50,000	Injury single-vehicle at intersection due to no stop sign.	\$3,222	Intersection of KY 1297 and Hydro Cole Bend Road.
84-970	Pike	US 23	\$50,000	Injured when car hit rock slide.	\$25,346	Previous rock slides in area.
84-1033	Pike	Unknown	\$50,000	Property flooded as a result of blockage of culvert.	0	
84-1053	Fulton	US 51	\$50,000	Refer to 84-805.	\$33,063	
84-1094	Warren	1-65	\$50,000	Fatal accident when driver lost control of vehicle due to hydroplaning.	\$40,000	Partial negligence for plaintiff.
84-1157	Harlan	KY 160	\$50,000	Fatal accident when vehicle dropped off shoulder drop off (inadequate warning).	0	Driver BAC of 0.26. Shoulder dropped off one to two feet.
84-1174	Campbell	US 27	\$50,000	Water pooling in construction area resulted in fatal two-vehicle collision.	\$35,000	Water pooling in median area in crossover.
85-72	Grant	1-75	\$50,000	Fatal accident when truck hit guardrail and then hit bridge abutment.	0	Truck hit turned down end treatment and then rode on top of guardrail to impact.
85-102	Bourbon	KY 1876	\$50,000	Stop sign hidden by route marking signs.	0	Intersection with US 460. Hit utility pole.
85-116	Campbell	DNA	\$50,000	Fell while carrying license plate and cut hand.	0	Occurred in county courthouse.
85-181	Greenup	KY 10	\$50,000	Retaining wall fell and damaged home.	0	
85-182	Monroe	Jackson St.	\$50,000	State employee pulled from maintenance facility into path of motorcycle.	\$5,000	Employee driving private vehicle.
85-345	Jefferson	I-65	\$50,000	Vehicle lost control at exit ramp in construction area. Alleged lack of proper traffic control and no guardrail.	0	Exit ramp to KY 841.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
85-346	Jefferson	I-65	\$100,000	Vehicle lost control at exit ramp in construction area. Alleged lack of proper traffic control and no guardrail.	0	Exit ramp to KY 841.
85-434	Caldwell	US 62	\$50,000	Ran into the rear of vehicle that was slowing down because of water on the road. Failed to warn of flooded roadway.	\$750	
85-435	Spencer	KY 1251	\$200,000	Fatal accident at intersection with no stop sign or warning sign in place.	\$200,000	Intersection with KY 44. Vandalism caused problem, keeping stop sign.
85-489	Lyon	KY 293	\$50,000	Road was blocked by construction denying access to business.	0	Bridge was being replaced. Resulted in lost business.
85-491	Meade	US 60	\$50,000	Lost control of vehicle at curve due to inadequate warning.	\$35,000	Noted previous accidents and complaints.
85-492	Muhlenberg	KY 181	\$50,000	Pedestrian injured when hit by vehicle because driver could not see claimant due to overgrowth of trees, shrubs.	\$36,000	
85-502	McLean	US 431	\$50,000	Fatal accident occurred when DOH ditcher pulled onto highway into path of vehicle.	\$50,000	
85-521	Spencer	KY 1251	\$200,000	Refer to 85-435.	\$200,000	
85-543	Boone	Union Hathaway Road	\$50,000	Injury accident when vehicle hit unmarked culvert headwall on right-of-way.	0	
85-598	Lincoln	Unknown	\$50,000	Rocks and boulders fell from truck and crashed through windshield of car.	\$50,000	
85-599	Jefferson	1-75	\$50,000	Lost control due to debris on road and ran off ramp. State had removed guardrail on ramp.	\$500	Kyl'C truck was parked on shoulder partially blocking view.
85-600	Jefferson	KY 1631	\$50,000	Injured in collision caused by malfunctioning traffic light.	\$21,120	Intersection of Fern Valley Road and Old Shepherdsville Road in Louisville.
85-650	Madison	1-75	\$50,000	Fatality when worker fell from the bridge he was painting. No safety equipment required to be worn.	0	Kentucky River bridge.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
85-654	Montgomery	US 460	\$50,000	Highway employee was mowing right-of-way and obstructed the highway causing injury accident.	\$4,500	
85-755	Muhlenberg	KY 277	\$50,000	No warning signs at point where road ended at a boat ramp resulting in fatal injuries to passenger.	\$15,000	Driver intoxicated and arrested.
85-786	Taylor	KY 210	\$50,000	Car hit water in road causing driver to lose control and travel into creek resulting to handle flow of water, lack of guardrail in fatalities. Improper design of culvert and no warning devices.	\$50,000	Water 2 feet deep across road due to heavy rain.
85-787	Taylor	KY 210	\$50,000	Refer to 85-786.	\$50,000	
85-788	Taylor	KY 210	\$50,000	Refer to 85-786.	\$50,000	
85-789	Taylor	KY 210	\$50,000	Refer to 85-786.	\$50,000	
86-9	Breckinridge	KY 261	\$50,000	Injury accident when driver lost control on slick asphalt.	0	
86-36	Fayette	KY 1685	\$50,000	Lost control of vehicle on icy road and slid off highway into culvert due to no guardrail.	0	Vehicle slid into 25-foot deep ditch. Time limit for filing had expired.
86-38	Wayne	KY 90B	\$50,000	Fatal accident resulting when driver failed to stop at stop sign due to inadequate warning of stop condition.	\$3,000	Intersection of KY 1275 and KY 90 Bypass. Driver BAC of 0.19.
86-60	Floyd	US 23	\$50,000	Fatal accident. In process of repairing traffic signal which was not operating properly. Inadequate work zone traffic control.	\$5,426	Intersection of US 23 and KY 114.
86-61	Grayson	KY 79	\$50,000	Drainage water permitted to drain across highway. Car lost control on ice and hit guardrail end which penetrated car.	\$50,000	Blunt guardrail end treatment.
86-127	Henry	KY 127	\$50,000	Fatal accident involving tractor trailer that ran off road in curve. Inadequate warning signs and inadequate guardrail.	0	Plaintiff dismissed suit.
86-144	Taylor	KY 210	\$50,000	Refer to 85-786.	0	
86-145	Taylor	KY 210	\$50,000	Refer to 85-786.	\$50,000	
86-146	Taylor	KY 210	\$50,000	Refer to 85-786.	\$50,000	
86-231	Floyd	US 23	\$50,000	Refer to 86-60.	\$100	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
86-322	Fayette	Waller Ave.	\$50,000	Failure to place signs and markings in advance of railroad.	0	
86-323	Pulaski	KY 80B	\$200,000	Fatal accident at intersection where driver states he did not observe traffic signal.	\$5,000	Intersection of KY 80 Bypass and KY39 in Somerset.
86-327	Allen	KY 98	\$50,000	DOH vehicle knocked a utility pole down causing a mobile home to catch fire.	0	DOH vehicle had been hit by another vehicle.
86-484	Floyd	US 23	\$50,000	Refer to 86-60.	\$45,000	
86-485	Floyd	US 23	\$50,000	Refer to 86-60.	\$45,000	
86-489	Trigg	KY 124	\$50,000	Intersection accident where stop sign obscured by weeds and no other warning devices present (injury accident).	0	Intersection of KY 124 and KY 276.
86-562	Trigg	1-24	\$50,000	Fatal accident in construction zone. Hit equipment on shoulder during fog. Inadequate warning devices.	\$7,500	Driver BAC of 0.10.
86-565	Larne	KY 210	\$50,000	Fatal accident. Weeds at intersection reduced visibility of approaching traffic.	0	Intersection with KY 470. Weeds 3 to 4 feet high.
86-566	Henderson	US 41	\$50,000	Fatal accident at intersection where traffic signal on flash.	\$6,000	Intersection of US 41 and Watson Lane. Separate lawsuit against Henderson.
86-567	Henderson	US 41	\$50,000	Refer to 86-566.	\$6,000	
86-568	Henderson	US 41	\$50,000	Refer to 86-566.	\$6,000	
86-626	Floyd	KY 80	\$50,000	Inadequate drainage of roadway resulted in vehicle hydroplaning and crossing the median. A fatal accident resulted when the vehicle hit an opposing vehicle.	\$42,000	Pool of water 4 to 5 inches deep.
86-627	Bell	KY 66	\$50,000	Improper drainage of water resulted in vehicle losing control on ice.	\$300	
86-655	Pulaski	KY 39	\$50,000	Lost control of motorcycle and hit a guy wire on the right-of-way. No guardrail. Fatal accident.	\$2,250	
86-699	Warren	US 68	\$50,000	Injury accident related to inadequate clearance interval at traffic signal.	0	Intersection of Riverview and Kentucky Streets in Bowling Green.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
86-733	Kenton	1-75	\$50,000	Vehicle overturned on exit ramp due to improper super-elevation. No guardrail.	0	I-75 southbound at exit 188B.
86-771	Marshall	KY 80	\$50,000	Impact with unmarked culvert on shoulder of road. No guardrail.	0	Culvert 2 feet off roadway.
86-772	Warren	KY 880	\$100,000	Injury accident in which operation of DOH vehicle was issue. Involved vehicle making U-turn.	0	
86-799	Perry	KY 15	\$100,000	Collision with train at railroad crossing. Inadequate warning lights.	\$10,000	Heavy fog.
86-833	Anderson	KY 1291	\$100,000	Collision with guardrail end which entered vehicle resulting in fatality.	\$36,141	Blunt guardrail end treatment.
86-885	Kenton	1275	\$100,000	Collision with guardrail end which entered vehicle resulting in fatality.	\$1,000	BCT end treatment.
86-944	Boone	KY 14	\$100,000	Head-on fatal accident. Complaint dealt with inadequate signs and markings and improper super-elevation.	0	DOH previously notified of road defect.
86-1046	Campbell	US 27	\$50,000	Child injured after running onto road. No guardrail between road and sidewalk.	0	Plaintiff moved to dismiss.
86-1053	Campbell	US 27	\$100,000	Fatal accident in construction zone related to shoulder drop off and inadequate warning.	0	Head-on collision resulted.
86-1055	Floyd	KY 404	\$100,000	Injury accident when lost control on ice. No warning signs or markings.	\$30,000	
86-1116	Rowan	KY 519	\$50,000	Large portion of rock cliff fell into path causing driver to swerve and hit guardrail. Injury accident.	0	
86-1118	Greenup	US 23	\$50,000	Fatal accident related to water pooling.	\$62,500	
86-1119	Greenup	US 23	\$50,000	Refer to 86-1118.	\$62,500	
86-1120	Kenton	1-75	\$100,000	Fatal accident when truck overturned onto another vehicle due to improper design of curve.	0	175 southbound near Ft. Mitchell interchange.
86-1180	Laurel	1-75	\$100,000	Fatal accident on ramp to weigh station when vehicle ran over delineator pole rupturing gas tank causing fire.	\$101,649	
86-1181	Laurel	1-75	\$100,000	Refer to 86-1180.	\$101,649	
86-1182	Laurel	1-75	\$100,000	Refer to 86-1180.	\$101,649	



**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
86-1183	Perry	KY 1149	\$50,000	Injury accident resulting when pavement broke away and vehicle went over embankment.	0	
86-1185	Floyd	KY 80	\$100,000	Injury accident when vehicle fell into collapsed culvert. Inadequate warning in construction zone.	\$3,000	
86-1186	Fayette	KY 1681	\$50,000	Driver lost control due to shoulder drop off in construction area.	0	Head-on collision in opposing lane.
86-1249	Floyd	KY 80	\$121,000	Refer to 86-1185.	0	
87-22	Metcalf	KY 3234	\$100,000	Fatal accident due to limited sight distance and failure to advise of a side road beyond a hillcrest.	\$33,333	
87-23	Metcalf	KY 3234	\$100,000	Refer to 87-23.	\$33,333	
87-24	Metcalf	KY 3234	\$100,000	Refer to 87-23.	\$33,334	
87-25	Fulton	KY 94	\$50,000	Fatal accident when slid onto metal pipe on right-of-way.	\$20,000	
87-26	Edmonson	KY 259	\$100,000	Injury accident when vehicle left roadway due to unsafe shoulder and insufficient warning signs.	0	
87-27	Warren	US 31W	\$100,000	Improper and inadequate signs directing traffic resulted in injury accident.	0	Vehicle southbound in northbound lanes.
87-31	McCracken	US 45	\$100,000	Injury accident when DOH vehicle changed lanes.	\$85,090	Intersection of Lone Oak Road and Highland Blvd. in Paducah.
87-113	Rowan	KY 32	\$50,000	Rocks fell into roadway causing injury accident.	\$50,000	
87-116	Galloway	KY 94	\$100,000	Fatal accident when motorcycle hit pothole on shoulder causing loss of control.	\$5,000	Crossed centerline and hit opposing vehicle.
87-210	Edmonson	KY 259	\$100,000	Injury accident (hit culvert). Unsafe shoulder and inadequate warning signs.	0	Plaintiff moved to dismiss.
87-212	Perry	Briar Fork	\$67, 587	Earth and mud slide on state right-of-way caused residence to be pushed off foundation.	\$22,000	Related to construction of Daniel Boone Parkway.
87-217	Harlan	KY 221	\$177,000	Head-on injury accident related to water pooling.	\$28,921	Water 3 inches deep on roadway.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
87-221	Graves	KY 384	\$100,000	Failure to provide stop signs or warning signs or guardrail resulted in injury accident.	0	Intersection with Macedonia Church Road.
87-229	Henderson	KY 359	\$50,000	No stop sign at intersection resulting in fatal accident.	\$8,500	Stop sign knocked down day previous to accident.
87-344	Hopkins	KY 1034	\$250,000	Stop sign obstructed by a bush at intersection and no stop ahead sign resulted in fatal accident.	\$85,000	Intersection of KY 1034 and Wicks Wells Road.
87-349	Greenup	US 23	\$100,000	Refer to 86-1118.	\$83,332	
87-431	Warren	US 31 W	\$100,000	Improper signs directing traffic caused injury accident.	0	Vehicle wrong direction on 4-lane highway.
87-432	McCracken	KY 131	\$110,000	Injury accident related to shoulder drop off and trees too close to the road.	0	
87-475	Greenup	US 23	\$100,000	Refer to 86-1118.	\$41,668	
87-516	Union	US 60	\$100,000	Injury accident involving a DOH vehicle.	0	
87-521	Harlan	US 421	\$100,000	Large rock fell from a cliff and hit truck causing fatality.	0	
87-524	Mercer	KY 1160	100,000	Fatal accident related to shoulder drop off as a result of paving.	\$44,250	
87-525	Mercer	KY 1160	\$100,000	Refer to 87-524.	\$750	
87-526	Lincoln	US 27	\$221,000	Injury accident resulting from collision with road grader.	0	
87-580	Greenup	KY 750	\$250,000	Injury accident related to defective traffic signal and excessive speed limit.	0	
87-581	Bullitt	Cabin Hill Rd.	\$70,000	Lake was drained. Dam was damaged and fish killed.	0	Police agency drained lake.
87-584	Metcalfe	Cumberl and Pkwy.	\$108,600	Vehicle hit by state vehicle (injury accident).	\$3,882	Slow speed with no warning emblem.
87-621	Kenton	1-75	\$100,000	Fatal accident in construction zone. Related to flagging.	0	
87-623	Christian	US 41	\$75,000	Injury accident due to traffic signal operating improperly.	\$5,000	
87-624	Bell	KY 221	\$100,000	Injury motor vehicle-bicycle accident related to view obstruction.	0	Bicycle pulled from driveway. View obstructed by trees and bushes.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
87-677	Bullitt	1-65	\$100,000	In construction zone, motorcyclist hit barrel blown into road by truck (injury).	\$25,000	
87-705	Marshall	US 641	\$150,000	Traffic signal not operating (being repaired) (injury accident).	0	
87-732	Perry	Daniel Boone Pkwy.	\$100,000	Fatal accident related to water pooling.	\$100,000	Water pooling in rutting caused by overweight trucks.
87-733	Perry	Daniel Boone Pkwy.	\$100,000	Refer to 87-732.	\$40,000	
87-734	Harrison	US 27	\$100,000	Pedestrian injured when fell at grate.	\$1, 500	
87-736	Bullitt	US 641	\$100,000	Injury accident related to lack of marking in construction zone.	\$4,635	
87-756	Marshall	US 641	\$100,000	Refer to 87-705.	0	
87-788	Jefferson	1-65	\$125,000	Fatal accident related to improper drainage in construction zone.	\$25,000	
87-790	Boone	1-75	\$100,000	Injury accident related to inadequate warning at construction zone.	0	
87-794	Russell	US 127	\$250,000	Fatal accident at intersection in which signing on stop approach was inadequate.	\$90,000	Intersection of US 127 and KY 619.
87-818	Campbell	US 27	\$50,000	Shoulder drop off resulted in injury accident.	\$5,000	
87-918	Anderson	US 62	\$100,000	Water pooling caused injury accident.	\$100,000	
87-975	Shelby	US 60	\$100,000	Water drained onto property causing erosion.	0	
87-980	Madison	Simpson Road	\$100,000	Inadequate signing at stop approach resulted in injury accident.	\$3,125	
87-1053	Clay	KY 11	\$77,800	Injury accident related to rock slide.	0	
87-1055	Floyd	US 23	\$50,000	Vegetation cut causing erosion.	0	
87-1059	Boone	KY 338	\$100,000	Hit pool of water in the roadway causing injury accident.	\$22,500	
87-1060	Fleeting	KY 11	\$100,000	Injured in accident due to failure to install necessary traffic control devices.	0	
87-1061	Calloway	US 641	\$100,000	Inadequate warning at work site.	0	

Table 9-3, Detailed Information For Claims of \$50,000 or More

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
87-1063	Boone	KY 338	\$100,000	Fatal accident related to lack of warning sign at curve, shoulder drop off, and lack of guardrail.	\$143,731	
87-1112	Whitley	KY 11	\$200,000	Driver drove through intersection over embankment due to lack of stop sign.	\$100,000	Intersection of KY 11 and KY 92. Stop sign torn down the night of the accident.
87-1156	Hardin	US 31W	\$100,000	Injury accident due to ice on road.	\$10,000	
87-1158	Fayette	US 25	\$100,000	Fatal accident in which vehicle lost control due to shoulder drop off	\$10,000	Head-on collision.
88-6	Ohio	Western KY Pkwy	\$100,000	Pedestrian injured when hit by truck at service center on the Western Kentucky Parkway.	0	
88-58	Fayette	KY 57	\$100,000	Fatal accident when truck ran off road and struck tree and culvert. Inadequate shoulder and culvert.	\$82,000	DOH aware of previous accidents.
88-61	Christian	US 41	\$200,000	Fatal accident when vehicle broke through wooden guardrail posts.	\$17,500	Guardrail not modern design.
88-62	Grayson	KY 411	\$100,000	Injury accident when vehicle broke through guardrail.	\$124,000	Deteriorating wooden posts. Substandard guardrail design.
88-63	Greenup	KY 693	\$50,000	Property flooded due to culvert not being large enough for heavy rain.	0	
88-85	Leslie	KY 2057	\$100,000	Truck overturned when section of road failed. No guardrail.	0	
88-87	Leslie	KY 2057	\$50,000	Refer to 88-85.	0	
88-139	Boone	KY 18	\$50,000	Refer to 85-1005.	\$5,000	
88-241	Hardin	KY 224	\$100,000	Fatal accident at railroad crossing. Adequate warning signals not present.	0	
88-243	Mercer	KY 1989	\$100,000	"No passing" markings not replaced after road was resurfaced.	\$14,000	Accident in March 1987 after road was resurfaced in November 1986.
88-285	Fayette	1-75	\$100,000	Injury accident involving DOH vehicle.	0	Dismissed because not filed within one year.
88-331	Knott	KY 7	\$100,000	Fatal accident at intersection. Stop sign placed too far back resulting in reduced visibility.	0	Intersection of KY 7 and KY 1498.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
88-412	Boyle	US 150B	\$75,000	Accident due to malfunctioning traffic signal.	pending	Signal failed to display yellow interval. Intersection with US 127.
88-415	Henderson	US 60	\$100,000	Fatal accident at intersection. Visibility limited because of vegetation.	\$64,500	Intersection with KY 1078.
88-416	Green	Unknown	\$100,000	Flagged through area but then had to run off road to avoid paint striping operation.	\$5,117	
88-463	Kenton	KY 177	\$100,000	Inadequate warning and limited sight distance on intersection approach.	0	Intersection of KY 177 and KY 1303.
88-464	Harrison	US 62	\$100,000	Accident due to gravel and oil left on road by DOH. No warning devices.	\$7,150	DOH used oil and gravel to repair road the previous day.
88-467	Green	Unknown	\$100,000	Refer to 88-416.	0	
88-527	Russell	US 127	\$100,000	Driver was issued a drivers license although mentally incompetent.	0	Driver pulled from side road into path of claimant's vehicle.
88-528	Grant	KY 36	\$250,000	Vehicle ran off road in curve recently resurfaced. Lack of warning or guardrail and shoulder drop off.	\$7,500	No delineator or advisory speed sign or pavement markings. Slope exceeded 6 feet.
88-570	Pike	CR 5384	\$100,000	Pedestrian fell off bridge because guardrail had been knocked down.	0	Marrowbone Creek Road.
88-623	Boyd	US 23	\$100,000	Fatal accident when guardrail penetrated vehicle.	0	
88-788	Pike	KY 468	\$75,000	Injury accident when pickup overturned after hitting piles of asphalt on shoulder of road.	\$20,000	Asphalt dumped on shoulder to empty load from truck.
88-790	Lawrence	KY 3	\$100,000	Vehicle lost control when hit oil on road from spill from prior accident.	\$84,800	Prior accident occurred day before.
88-791	Whitley	KY 727	\$100,000	Fatal accident. Ran off road into creek. No guardrail or warning devices.	\$12, 500	Shoulder caused driver to lose control.
88-843	Hopkins	Pennyryle Pkwy	\$52,000	Vehicle struck in rear by DOH truck.	\$2,000	Truck hauling guardrail and pulling an air compressor.
88-844	Carter	KY 174	\$100,000	Accident due to lack of stop sign or warning on stop approach.	\$500	Vehicle pulled from side road.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
88-848	Laurel	KY 30	\$100,000	Fatal accident at intersection. Proper warnings not provided.	0	Intersection of KY 30 and KY 490. Pavement markings, signing, and intersection beacon inadequate.
88-872	Ballard	US 60	\$100,000	Struck grader blades which were holding a retaining structure upright.	\$5,000	Caused tire to blow out.
88-916	Meade	KY 79	\$200,000	Shoulder drop off caused driver to lose control.	\$74,000	Ran off right side of road in curve. Four-inch drop off. Slid into another vehicle.
88-917	Perry	KY 28	\$250,000	Lost control on oil and went over embankment not protected by guardrail.	pending	Oil on road as result of recent road work.
88-973	Grayson	Market Street	\$50,000	No stop sign at intersection causing accident.	\$500	Intersection of Market Street and S. Main Street in Leitchfield.
88-974	Boyd	Boy Scout Road	\$50,000	Property damage due to flooding.	\$12,500	DOH cleaning and replacing drain and tiles under roadway.
88-1017	Muhlenberg	KY 189B	\$50,000	Intersection accident. During construction there was inadequate traffic control.	0	Intersection of KY 189 Bypass and KY 70. Driver did not see stop sign or signal.
88-1052	Anderson	KY 513	\$100,000	Fatal injury due to lack of guardrail or adequate warning signs.	0	Claim not filed within one year of accident.
88-1118	Metcalfe	KY 70	\$100,000	Accident due to branches covering stop sign.	\$100,000	Intersection with KY 1243 Stop sign became visible at 33 feet. Stop ahead sign installed at time of accident.
88-1119	Metcalfe	KY 70	\$100,000	Refer to 88-1118.	\$60,000	
88-1120	Laurel	KY 30	\$85,000	Fatal accident at intersection. Proper traffic control not provided.	\$73,394	Intersection of KY 30 and KY 490. Traffic control problems related to signing, pavement marking, and beacon.
88-1121	Pike	US 23	\$100,000	Injury accident when hit tree which had fallen into road.	\$50,000	Tree had been fire damaged and had been leaning toward the road.
88-1125	Barren	US 68	\$100,000	Pavement became dangerous when wet. No warning provided.	0	88-1125.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
88-1226	Montgomery	US 460	\$200,000	Intersection accident where the claim involves a problem with the traffic signal. Both drivers claimed to have a green signal.	\$21,000	Intersection of US 460 and KY 1686.
88-1227	Meade	KY 79	\$100,000	Refer to 88-916.	\$15,000	
88-1228	Meade	KY 79	\$50,000	Refer to 88-916.	\$15,000	
88-1229	Meade	KY 79	\$100,000	Refer to 88-916.	\$15,000	
88-1231	Barren	US 68	\$100,000	Refer to 88-1125.	0	
88-1257	Carter	KY 207	\$100,000	Vehicle slid on mud on road and hit another vehicle.	\$750	
88-1259	Jefferson	I-71	\$100,000	Fatal accident involving lack of warning devices at a work zone.	0	Three DOH employees were struck. Sustained fatal injuries.
88-1297	Kenton	Fowler Creek Road	\$100,000	Accident resulted when vehicle hit an irregular spot in the pavement causing loss of control.	0	Did not warn of condition.
88-1299	Bell	KY 92	\$250,000	Fatal accident when tree fell from embankment onto vehicle.	\$1,000	Accident diagram indicates tree not on right-of-way.
89-20	Franklin	DNA	\$100,000	Injured using a guardrail straightening machine.	0	Inmate at Frankfort Career Development Center working for DOH. Case appealed.
89-35	Martin	KY 292	\$100,000	Vehicle ran off road after hitting pothole.	\$500	
89-46	Leslie	D.B. Pkwy.	\$100,000	Vehicle lost control after hitting carcass of dead dog.	0	
89-47	Hardin	US 421	\$250,000	Injury accident when lost control due to ice on road.	\$1,750	DOH called earlier in day to remove debris from ditch.
89-73	Kenton	I-75	\$100,000	Accident in construction area related to DOH supervision of traffic control.	0	
89-75	Breckinridge	KY 2202	\$100,000	Lost control after hitting hole in road.	\$4,750	
89-160	Pike	KY 610	\$250,000	Injury accident when landslide hit vehicle.	\$33,225	Stated that landslides had occurred before, so DOH aware of problem.
89-190	Pendleton	US 27	\$100,000	Fatal accident due to ice on bridge. No warning given.	0	Head-on collision.
89-191	Pendleton	US 27	\$100,000	Refer to 89-190.	0	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
89-192	Letcher	KY 1103	\$100,000	Vehicle ran into an unmarked and unprotected ditch.	0	DOT noted that private company was responsible for alterations of ditch.
89-309	Hardin	1-65	\$250,000	Injury accident when vehicle overturned as a result of shoulder drop off.	\$1,000	Road had been repaved.
89-310	Woodford	US 60	\$100,000	Fatal accident involving water pooling.	\$100,000	Head-on collision.
89-339	Breckinridge	KY 261	\$100,000	Fatal accident where vehicle lost control and overturned due to defective shoulder.	0	
89-340	Breckinridge	KY 261	\$100,000	Refer to 89-339.	\$100,000	
89-362	Bell	US 119	\$100,000	Injury accident related to landslide.	\$3,825	Rocks fell on vehicle causing loss of control.
89-372	Johnson	KY 40	\$102,000	Rock fell on vehicle from rock cut. DOH stopped vehicles with no detour marked.	0	Vehicles stopped to cut brush.
89-408	Hardin	Pleasant Hill Rd.	\$200,000	Vehicle lost control in curve due to lack of warning signs and pavement markings.	0	DOH noted that road was not state maintained.
89-409	Harlan	US 421	\$100,000	Truck lost control on steep grade due to no warning signs.	0	DOH noted required signs in place.
89-440	Boyd	US 60	\$50,000	Opposing left turn accident related to defective design of traffic signal.	pending	
89-441	Boyd	US 60	\$100,000	Refer to 89-440.	pending	
89-442	Boyd	US 60	\$100,000	Refer to 89-440.	pending	
89-462	Madison	KY 1617	\$100,000	Injury motorcycle accident involving failure to provide adequate warning signs.	0	
89-475	Jefferson	US 31W	\$100,000	Fatal accident when guardrail punctured vehicle.	\$45,000	Guardrail in un-repaired condition from previous accident.
89-499	Martin	KY 908	\$100,000	Portion of road caved in causing vehicle to run off the road.	0	
89-501	Metcalf	KY 1243	\$59,427	Accident at intersection due to grass and trees obscuring view.	\$3,100	Intersection with KY 70.
89-541	Pike	KY 122	\$250,000	Fatal accident where vehicle lost control on wet road and slid into junk vehicle next to road (8.5 feet from road).	0	DOT had notified owner of junkyard to move vehicles beside road.



**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
89-657	Laurel	KY 1223	\$100,000	No traffic control device was installed at the Intersection.	0	Intersection of KY 1223 and Clark Road.
89-689	Carlisle	US 62	\$115,000	Fatal accident involving shoulder drop off with no warning provided.	\$60,000	Shoulder drop-off related to resurfacing.
89-771	Spencer	KY 55	\$100,000	Accident involving state truck making U-turn.	0	Truck gave no signal.
89-836	Taylor	KY 658	\$100,000	Lost control after tires dropped off excessive shoulder drop off.	0	Resulted in head-on collision.
89-837	Magoffin	KY 402	\$100,000	Guardrail too low allowing vehicle to vault over guardrail.	\$35,000	
89-889	Caldwell	KY 2066	\$100,000	Problem with warning at boat dock.	0	Alcohol Involved (BAC of 0.27).
89-912	Green	US 68	\$100,000	Accident at curve where vehicle ran into rock embankment. Issues are lack of guardrail, shoulder, and warning sign.	\$65,000	Unsafe speed listed as contributing factor.
89-913	Green	US 68	\$100,000	Refer to 89-912.	0	
89-914	Green	US 68	\$100,000	Refer to 89-912.	0	
89-924	Carter	US 60	\$100,000	Car hit bump on bridge and lost control.	0	Driver drag racing and charged with DUI.
89-936	Bullitt	KY 61	\$100,000	Lack of warning and advisory speed at curve.	0	Vehicle being chased by police. DOH noted 15 mph speed advisory present.
89-948	Meade	KY 1638	\$100,000	Vehicle hit utility pole. Lack of guardrail and narrow shoulder.	0	Ran off road over steep embankment to avoid rear end collision.
89-949	Boyd	US 23	\$100,000	Opposing left-turn accident. Lack of proper traffic control and sight distance.	\$45,000	Intersection of US 60 and 29th Street in Ashland.
89-953	Floyd	Unknown	\$60,000	House flooded after highway altered drainage.	\$1,500	
89-958	McCracken	US 60	\$100,000	Vehicle lost control due to water pooling.	0	At Island Creek Bridge.
89-964	Logan	US 68	\$100,000	Fatal accident involving DOH vehicle which had defective brakes.	0	Head-on collision.
89-972	McCracken	US 60	\$100,000	Refer to 89-958.	0	
89-1005	Muhlenburg	Holt Rd.	\$100,000	Accident at intersection due to missing stop sign.	0	Intersection of Holt Road and Railroad Avenue in Cleaton. DOH states intersection under control of county.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
89-1006	Muhlenburg	Holt Rd.	\$100,000	Refer to 89-1005.	0	
89-1010	Grayson	KY 79	\$100,000	No flagman to warn of state truck stopped in road for road maintenance.	\$50,000	Truck stopped in a curve on a hillcrest.
89-1058	Webster	KY 109	\$100,000	Fatal accident involving shoulder drop off.	0	Opposite direction collision.
89-1091	Boyle	US 68	\$100,000	Improper guardrail and inadequate shoulder and signing. Injury accident.	0	Vehicle hit guardrail and overturned.
89-1163	Johnson	US23	\$100,000	Driver lost control when struck pothole filled with water. Fatal accident.	\$10,000	
89-1209	Carlisle	US 62	\$100,000	Refer to 89-689.	\$7,000	
90-8	Lawrence	KY 2565	\$100,000	Poorly placed stop sign and lack of warning sign resulted in vehicle running stop sign.	\$5,000	Intersection with US 23.
90-38	Carlisle	US 62	\$50,000	Refer to 89-689.	\$36,000	
90-39	Harlan	Brittains Creek Rd.	\$100,000	Rode bicycle off bridge due to lack of guardrail.	0	
90-41	Letcher	KY 15	\$100,000	Lost control when hydroplaned.	\$7,000	
90-43	Daviess	US 231	\$200,000	Hit bridge abutment. Inadequate guardrail.	0	
90-49	Jefferson	US 60	\$100,000	Pedestrian fell (no sidewalk).	Pending	
90-83	Muhlenberg	W.K. Pkwy.	\$100,000	Ran into rear of state vehicle stopped in roadway with no advance warning.	0	
90-110	Morgan	KY 437	\$100,000	Lost control on mud in road. No warning.	\$12,000	Mud from where state working on hill.
90-111	Campbell	KY 1121	\$100,000	Lost control when ran onto ice on road.	0	
90-180	McCracken	Unknown	\$51,890	Lost control when hit manhole cover and hit tree. pending		
90-183	Boone	KY 338	\$100,000	Hit utility pole located too close to roadway.	0	Pole not on state right-of-way.
90-184	Kenton	KY 16	\$100,000	Inadequate warning at sharp curve.	0	No reduced speed or flashing lights.
90-185	Kenton	KY 16	\$100,000	Refer to 90-184.	0	
90-201	Hancock	KY 144	\$100,000	Stop sign missing (had been stolen).	\$5,000	Intersection with KY 69.
90-220	Christian	KY 107	\$100,000	Lost control when hydroplaned.	0	
90-222	Livingston	KY 453	\$250,000	Accident due to missing stop sign.	0	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
90-240	Breathitt	KY 1933	\$100,000	Drove into section of road which broke away as vehicle drove across.	\$3, 500	Dirt under road had been washed away.
90-245	Letcher	US 119	\$100,000	Head-on accident on three lane section of road. Lack of sufficient passing lane and visibility.	0	
90-296	Marshall	US 68	\$100,000	Crossed median into opposing lane because median inadequate (too low).	0	Intersection with US 641.
90-424	Harlan	KY 413	\$100,000	Driver which caused accident should not have been issued a permit because of mental disability.	0	
90-494	Carter	KY 1947	\$100,000	Stop sign had been knocked down.	0	Intersection with KY 1959.
90-532	Harlan	KY 413	\$100,000	Refer to 90-424.	0	
90-553	Fulton	KY 116	\$100,000	Pedestrian hit by vehicle. Did not maintain right-of-way and no roadway lighting.	0	
90-558	Laurel	KY 192	\$100,000	Inadequate signing on stop approach.	0	Stop sign in place.
90-577	Perry	KY 15	\$100,000	Vehicle ran into rock slide.	\$25,000	
90-578	Pike	US 460	\$100,000	Swerved to avoid tree in road and ran off road.	pending	Tree had been leaning toward road.
90-581	Bath	KY 1602	\$100,000	Inadequate signing on stop approach. Lack of guardrail across from intersection.	\$15,000	No stop bar or stop ahead sign. Intersection with KY 1325.
90-582	Powell	KY 402	\$100,000	Loss of control due to water pooling.	\$20,000	
90-629	Martin	KY 1714	\$100,000	Lost control due to ice on road.	0	Water from broken water line.
90-630	Pulaski	US 27	\$90,000	State vehicle ran into rear of vehicle.	\$750	
90-640	Johnson	US 23	\$50,000	Refer to 89-1163.	\$17,500	
90-641	Hardin	KY 1600	\$100,000	Accident at intersection. View obstructed and change interval too short.	0	Intersection with King Road.
90-654	Kenton	KY 1486	\$100,000	Accident in work area where state in process of placing warning signs.	\$5,500	
90-665	Taylor	KY 76	\$100,000	No warning in advance of stop sign.	0	Intersection with KY 70.
90-666	Taylor	KY 76	\$100,000	Refer to 90-665.	0	
90-669	Carter	US 60	\$100,000	Lost control due to shoulder drop off.	0	
90-703	Bourbon	US 27	\$100,000	Lost control due to shoulder drop off.	\$37,500	
90-704	Pike	US 460	\$70,000	Hydroplaned and crossed into opposing lane.	\$45,735	Poor drainage.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
90-705	Pike	US 460	\$60,000	Refer to 90-704.	\$18,576	
90-706	Pike	US 460	\$60,000	Refer to 90-704.	0	
90-707	Pike	US 460	\$60,000	Refer to 90-704.	0	
90-708	Metcalf	US 68	\$100,000	Lost control in curve due to lack of warning. Ran into creek due to lack of guardrail.	0	
90-750	Leslie	US 421	\$100,000	Business flooded due to road construction.	0	
90-794	Rowan	Bluebank Rd.	\$100,000	Tractor overturned when ran onto defective shoulder. No warning and no guardrail.	0	
90-816	Mercer	US 68	\$100,000	Lost control due to shoulder drop off.	\$3,000	
90-841	Lawrence	KY 1690	\$50,000	State vehicle made illegal turn.	0	
90-892	Jefferson	1-65	\$200,000	Truck lost control in curve and hit median barrier throwing load onto opposing lane.	0	
90-915	Woodford	KY 33	\$100,000	Ran off road in curve due to inadequate warning and lost control due to shoulder drop off.	\$60,000	Inadequate superelevation in curve.
90-936	Harlan	US 421	\$100,000	Lost control on ice.	0	Ice formed near ditch.
90-948	Kenton	1-75	\$100,000	Pedestrian hit while walking on bridge. No pedestrian walkway provided.	0	
90-949	Kenton	1-75	\$100,000	Refer to 90-948.	0	
90-988	Hopkins	KY 1034	\$100,000	No warning signs or lighting at intersection.	0	Intersection with Bean Cem. Road.
90-1100	Lawrence	US 23	\$100,000	Refer to 89-1163.	\$7,500	
90-1121	Hardin	1-65	\$150,000	Defective shoulders caused vehicle to lose control.	0	
90-1298	Knott	KY 80	\$100,000	Lost control on icy road.	\$500	Hit boulder partially on shoulder.
90-1311	Oldham	KY 329	\$240,000	Truck lost control due to shoulder drop off.	0	
90-1313	Madison	1-75	\$100,000	Improper paving of roadway caused accident.	0	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
90-1376	Hardin	US 31W	\$100,000	Inadequate traffic signs and markings resulted in vehicle crossing into opposing lane.	pending	During heavy rain.
90-1406	Hardin	US 31W	\$250,000	Lost control due to snow and ice on road.	0	
90-1438	Pike	KY 194	\$100,000	Lost control due to ice on road.	\$8,500	Ditch had overflowed.
90-1451	Hardin	US 31W	\$150,000	Refer to 90-1376.	pending	
91-83	Floyd	US 23	\$100,000	Improper design and marking of intersection resulted in turning left from straight lane.	0	Intersection with KY 114.
91-104	Green	KY 61	\$100,000	Newly paved road had no pavement marking.	\$33,333	Vehicle crossed into opposing lane.
91-145	Hardin	US 31W	\$100,000	Lost control in curve due to lack of warning sign.	\$20,000	
91-229	Hardin	KY 1882	\$250,000	Accident resulted because of flooded roadway.	0	No warning signs or barricades.
91-263	Henderson	KY 136	\$100,000	Improper design of intersection resulted in vehicle crossing into opposing lane.	0	Speeding and alcohol involved.
91-288	Caldwell	W.K. Pkwy.	\$250,000	Lost control when ran over trash bag left in road. Overturned because of defective design of median.	0	
91-395	Muhlenberg	KY 70	\$150,000	Lost control due to shoulder drop off and ran down embankment because of lack of guardrail.	\$5,000	
91-445	Bath	US 60	\$200,000	Lost control due to shoulder drop off.	0	
91-451	McLean	US 431	\$200,000	Water pooling caused loss of control.	0	Claim for collateral damages.
91-459	Laurel	KY 3430	\$100,000	Lost control on gravel in curve.	\$50,000	
91-481	Woodford	Clifton Rd.	\$100,000	Lost control due to shoulder drop off on newly resurfaced road. No guardrail on bridge.	0	Road resurfaced day of accident. No warning signs.
91-500	Muhlenberg	KY 70	\$100,000	Refer to 91-395.	\$1,000	
91-542	Hopkins	KY 1069	\$100,000	Accident with state vehicle.	pending	Intersection with KY 1751.
91-547	Kenton	1-75	\$150,000	Refer to 87-621.	0	
91-579	Meade	KY 259	\$50,000	Accident caused by no stop sign.	0	Stop sign had been removed.
91-591	Lawrence	US 23	\$100,000	Lost control on wet road.	\$12,000	Rutting caused water accumulation

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
91-617	Laurel	KY 3430	\$100,000	Refer to 91-459.	0	
91-641	Boyd	KY 5	\$100,000	Mower made illegal U-turn.	\$25,000	
91-644	Union	KY 56	\$250,000	Lost control due to shoulder drop off.	\$500	
91-675	Lincoln	US 27	\$100,000	Stop sign missing and weeds obstructed view.	\$1,000	No junction sign.
91-684	Knox	US 25E	\$100,000	Allowed vehicles to park near intersection which limited visibility.	0	No warning signs.
91-700	Martin	KY 292	\$100,000	Lost control of vehicle due to debris in roadway.	0	Coal on roadway.
91-706	Hardin	US 31W	\$100,000	Hydroplaned and lost control and hit concrete barrier.	0	Improper drainage.
91-707	Nelson	US 31E	\$210,000	Hydroplaned and lost control.	0	
91-730	Leslie	KY 80	\$100,000	Vehicle went over embankment due to lack of guardrail.	0	Guardrail had been removed.
91-760	Clark	Colby Rd.	\$100,000	Lost control due to improper shoulders.	\$1,500	
91-763	Floyd .	KY 1428	\$100,000	Hit unmarked culvert when pulled onto shoulder.	0	Weeds concealed culvert.
91-764	Floyd	KY 1428	\$100,000	Refer to 91-763.	0	
91-771	Montgomery	KY 686	\$100,000	Inadequate signing on stop approach.	0	Intersection with KY 713.
91-833	Hardin	KY 144	\$100,000	Construction caused water damage to property.	0	
91-849	Knott	KY 582	\$100,000	Inadequate warning of stop condition.	0	Intersection with KY 160.
91-850	Pike	KY 194	\$100,000	Water pooling caused vehicle to lose control.	\$3,949	Poor drainage.
91-858	Galloway	Fourth St.	\$100,000	Pedestrian stepped in hole where pole had been removed.	0	
91-859	Montgomery	US 60	\$100,000	Inadequate warning of stop approach. Caution light not working.	\$6,100	Intersection with KY 686. Vehicle disregarded stop sign.
91-988	McCreary	US 27	\$101,500	Defective shoulder caused loss of control of vehicle.	0	
91-994	Montgomery	US 60	\$100,000	Refer to 91-859.	\$6,100	
91-1027	Montgomery	US 60	\$100,000	Improper traffic control at stop approach.	\$10,000	Intersection with KY 686.
91-1030	Jefferson	US 31W	\$100,000	Hydroplaned and lost control of vehicle.	\$2,000	Design of road allows water pooling.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
91-1056	Kenton	KY 16	\$100,000	Lost control due to water pooling and hit utility pole because of inadequate guardrail.	\$20,000	Break in pavement not signed.
91-1083	Floyd	US 23	\$101,500	Rocks fell from hill and hit vehicle.	\$1,000	No warning sign.
91-1110	Montgomery	US 60	\$50,000	Refer to 91-859.	\$6,100	
91-1151	Hopkins	KY 85	\$50,000	Inadequate guardrail allowed vehicle to run off embankment into river.	\$2,668	
91-1152	Hopkins	KY 85	\$50,000	Refer to 91-1151.	\$1,333	
91-1163	Hopkins	KY 85	\$100,000	Refer to 91-1151.	\$5,333	
91-1164	Hopkins	KY 85	\$50,000	Refer to 91-1151.	\$2,668	
91-1186	Nelson	KY 46	\$100,000	No stop sign or warning at stop approach.	0	Intersection with Clarktown Road.
91-1305	Bell	KY 987	\$100,000	Lost control on ice on roadway.	0	
91-1369	Lawrence	KY 644	\$100,000	Vehicle ran off road in curve and over embankment. Noted lack of curve warning signs and no guardrail.	0	
91-1370	Lawrence	KY 644	\$100,000	Refer to 91-1369.	0	
91-1407	Letcher	KY 1103	\$100,000	Vehicle ran off road due to drainage problem.	0	Related to construction of ditch.
92-0037	Butler	US 231	\$200,000	Driver lost control on ice-covered bridge and vehicle traveled down steep embankment.	0	Lack of guardrail is issue.
92-0145	Greenup	US 23	\$100,000	Boulder from rockslide fell on car causing injury.	\$500	
92-0184	Henry	KY 55	\$50,000	Rear-ended by state vehicle.	\$38,710	Driver of state vehicle was intoxicated.
92-0290	Floyd	US 23	\$240,000	Claimant was hit while crossing street from parking lot to state owned facility.	0	No crosswalk or traffic light for pedestrians.
92-0292	Martin	KY 292	\$100,000	Claimant walking along road that broke apart.	0	
92-0311	Leslie	DB Pkwy	\$100,000	Defendant was killed by intoxicated driver on Daniel Boone Parkway.	0	Toll booth operator allowed drunk driver access to toll road.
92-0315	Harlan	KY 38	\$100,000	Debris from previous accident caused another.	0	
92-0333	Fayette	KY 1974	\$100,000	Poorly designed intersection and traffic control devices caused accident.	0	Intersection with KY 4.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
92-0338	Bath	US 60	\$100,000	Head on collision in curve. Issue related to signing.	\$20,000	
92-0339	Bath	US 60	\$100,000	Refer to 92-338.	\$20,000	
92-0385	Rowan	KY 519	\$100,000	Rockslide occurred causing accident and injury.	\$1,250	Road construction caused slide.
92-0386	Rowan	KY 519	\$100,000	Refer to 92-385.	\$1,250	
92-0419	Whitley	KY 204	\$100,000	Vehicle left roadway and struck wood piling.	\$1,500	Wood piling was state erected and maintained.
92-0437	Lewis	KY 10	\$64,968	Rear tires of vehicle dropped off side of road causing accident.	\$21,247	92-0437
92-0466	Jefferson	US 31E	\$100,000	Claimant made left turn and was hit by another vehicle.	\$750	Opinion that left turns should be protected.
92-0486	Garrard Creek Rd.	Old Sugar	\$100,000	Roadway collapsed forcing vehicle down steep embankment.	\$7,500	
92-0504	Leslie	KY 118	\$100,000	Road collapsed under vehicle causing accident.	0	Driver was charged with DUI.
92-0520	Fayette	KY 922	\$100,000	Improper warning and signing in sharp curve where accident occurred.	pending	
92-0531	Fayette	KY 922	\$100,000	Inadequate warning signs at curve.	Pending	
92-0575	Scott	KY 32	\$100,000	Resurfacing caused loss of control.	\$43,850	Ran off road and hit tree.
92-0587	Fayette	KY 1927	\$100,000	Claimant ran through stop sign hidden by foliage and hit a tree.	0	
92-0596	Christian	US 41	\$100,000	Claimant's arm was hit by debris thrown from mower.	0	
92-0613	Grayson	US 62	\$100,000	Accident due to poor visibility and poor design of roadway.	0	
92-0639	Madison	KY 1974	\$65,000	Water flooded claimant's home due to inadequate culvert size.	0	
92-0673	Logan	US 68	\$100,000	Narrow lanes, improper embankment, and speed limits caused accident.	0	
92-0745	Lawrence	US 23	\$100,000	Traffic light malfunctioned causing collision.	0	Intersection with KY 3.
92-0786	Barren	KY 90	\$100,000	No warning signs at curve caused loss of control and no guardrail protection.	0	
92-0787	Graves	KY 408	\$100,000	Claimant hit by state dump truck.	\$500	



**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
92-0798	Hopkins	KY 502	\$100,000	Defendant drove into flooded road and drowned.	\$22,500	No warning signs of flooded road.
92-0840	Boone	Turkey Foot Road	\$100,000	Traffic signal malfunctioned causing collision.	\$750	
92-0854	Leslie	KY 1807	\$50,000	Hill side below KY 1807 keeps falling into claimant's driveway.	0	
92-0867	Hardin	KY 3005	\$75,000	Vehicle was hit by railroad maintenance vehicle due to high weeds and poor visibility.	Pending	
92-0868	Hardin	KY 3005	\$75,000	Refer to claim 92-0867.	0	
92-0869	Hardin	KY 3005	\$50,000	Refer to claim 92-0867.	0	
92-0950	Hardin	KY 3005	\$50,000	Refer to claim 92-0867.	0	
92-1042	Fayette	KY 922	\$100,000	A 7-8 inch drop off to shoulder caused accident.	0	No warning signs of drop off.
92-1051	Graves	KY 94	\$100,000	State truck hit claimant's vehicle.	0	
92-1065	Harlan	US 421	\$100,000	Milling from road was placed on shoulder causing fatal accident.	\$50,000	Lost control due to debris on road.
92-1087	Hardin	KY 86	\$100,000	Hit by train at railroad crossing.	0	Sign blocked view of warning signal.
92-1019						
92-1125	Grayson	US 62	\$100,000	Refer to 92-0613.	0	
92-1163	Fayette	Unknown	\$100,000	Hit in eye by debris while installing guardrail.	0	Inmate work detail from LFUCG.
92-1212	Carter	KY 1122	\$150,000	Ran off road and hit tree. No guardrail.	0	
92-1213	Hopkins	KY 112	\$200,000	Water pooling in ruts left by coal trucks caused hydroplaning.	0	
93-63	Hart	US 31 W	\$100,000	Defendant's tractor overturned at a weed hidden culvert.	\$25,000	
93-92	Allen	DNA	\$100,000	Fell through drainage grate in state parking lot.	0	Poor lighting contributed.
93-93	Allen	DNA	\$100,000	Refer to 93-0092.	0	
93-193	Morgan	KY 519	\$100,000	Accident caused by break in pavement.	0	
93-262	McCracken	Etch Road	\$100,000	State driver rear-ended claimant's vehicle.	\$700	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
93-295	Greenup	US 23	\$100,000	Water pooled in roadway causing hydroplaning an accident.	0	
93-316	Clinton	KY 696	\$100,000	Bridge repair caused accident and injury.	0	No warning signs.
93-317	Metcalfe	Unknown	\$100,000	Hit dip in curve and lost control of vehicle.	0	
93-322	Knott	KY 696	\$50,000	Pooling water froze on roadway causing accident.	0	
93-323	Knott	KY 696	\$50,000	Refer to 93-0322.	0	
93-378	Magoffin	KY 1081	\$50,000	Hit head on by vehicle while crossing bridge.	0	Poor design of bridge and approaches. Bump at end of bridge caused loss of control.
93-379	Magoffin	KY 1081	\$50,000	Refer to 93-0378.	0	
93-380	Magoffin	KY 1081	\$50,000	Refer to 93-0378.	0	
93-382	Magoffin	KY 1081	\$50,000	Refer to 93-0378.	0	
93-383	Magoffin	KY 1081	\$50,000	Refer to 93-0378.	0	
93-432	Boone	KY 1017	\$100,000	Hit head on by state truck.	\$5, 500	State employee was charged with DUI.
93-479	Franklin	I-64	\$100,000	Claimant (on motorcycle) hit deer.	0	No "Deer Crossing" signs.
93-520	Rowan	I-64	\$100,000	Hillside slid onto claimants vehicle causing accident and injury.	0	
93-530	Lincoln	DNA	\$100,000	Construction of temporary road and inadequately sized culverts flooded claimants property.	0	
93-531	McLean	KY 798	\$100,000	Claimant standing on a concrete culvert which fell.	0	
93-547	Harlan	KY 221	\$100,000	Claimant was working on contract with state and pending the truck he was working in hit high voltage power lines causing injury.		
93-592	Meade	KY 144	\$100,000	Claimants vehicle hydroplaned causing accident.	\$500	
93-661	Breckinridge	KY 383	\$100,000	Claimants vehicle was hit head on by another.	0	Poor superelevation of curve.
93-677	Letcher	KY 7	\$100,000	Decedent killed at unsignalized R/R crossing.	0	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
93-679	Meade	KY 144	\$100,000	Refer to 93-0592.	pending	
93-683	Graves	KY 564	\$100,000	Pooling of water caused accident.	0	
93-699	Carter	US 60	\$100,000	Tractor overturned in culvert hidden by weeds.	0	
93-710	Adair	Unknown	\$100,000	Motorcycle lost control due to debris on road.	0	
93-822	Bell	KY 190	\$75,000	Removal of embankment caused landslide onto claimant's home.	\$22,000	
93-827	Pulaski	Clifty Road	\$100,000	Claimant wrecked due to vehicle turning into a blind entrance in a curve.	\$816	
93-849	Floyd	US 23	\$100,000	Claimant hit guardrail under construction and in roadway.	pending	No lighting or construction signs.
93-850	Floyd	US 23	\$100,000	Refer to 93-0849.	pending	
93-876	Perry	KY 1165	\$102,000	Improper drainage of roadway flooded claimant's property and home.	\$7,500	
93-891	Crittenden	KY 1020	\$50,000	Accident due to improper shoulder maintenance and curve superelevation.	\$3,000	
93-892	Crittenden	KY 1020	\$50,000	Refer to 93-0891.	\$3,000	
93-893	Crittenden	KY 1020	\$50,000	Refer to 93-0891.	\$3,000	
93-894	Crittenden	KY 1020	\$50,000	Refer to 93-0891.	\$3,000	
93-895	Crittenden	KY 1020	\$50,000	Refer to 93-0891.	\$3,000	
93-911	Garrard	KY 34	\$94,375	Improperly signalized intersection caused accident.	\$1,117	
93-918	Knott	KY 80	\$100,000	Improperly designed intersection caused collision.	pending	Intersection with KY 160.
93-919	Knott	KY 80	\$100,000	Refer to 93-0918.	Pending	
93-954	Magoffin	US 460	\$100,000	Decedent left road in a curve and there was no guardrail protection.	0	
93-974	Greenup	KY 1	\$100,000	Vehicle hydroplaned and lost control in curve and lost control.	\$17,500	
93-975	Greenup	KY 1	\$50,000	Refer to 93-0974.	\$17,500	
93-976	Greenup	KY 1	\$50,000	Refer to 93-0974.	\$17,500	
93-977	Greenup	KY 1	\$50,000	Refer to 93-0974.	\$17,500	
93-978	Rowan	KY 810	\$100,000	Claimant was welder on bridge and fell.	\$27,500	Injured when fell 30 feet.
93-1080	Boyd	US 23	\$100,000	Rear ended coal truck on shoulder (no signs).	0	Driver taking tarp off. No lighting.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
94-70	Carter	KY 1704	\$100,000	Rockslide caused fatal accident.	0	
94-71	Floyd	US 23	\$100,000	Poor lighting at intersection caused accident.	pending	Intersection with KY 1428.
94-72	Floyd	US 23	\$100,000	Refer to 94-0071,	pending	
94-110	Muhlenberg	WK Pkwy	\$100,000	Vehicle left roadway and hit abutment.	\$41,397	No guardrail or rumble strips.
94-124	Franklin	US 60	\$100,000	Decedent was hit by oncoming vehicle. Should not have been passing zone.	pending	Improper speed limit of 55 mph.
94-161	Monroe	KY 1366	\$100,000	Decedent hit ice and slid into bridge abutment.	\$40,000	No guardrails.
94-182	Greenup	KY 2	\$100,000	Claimant hit slush on road and rolled down hill.	\$1,750	No guardrails.
94-195	Pike	KY 122	\$100,000	Rockslide fell on claimant's truck.	\$4,000	
94-256	Morgan	KY 172	\$100,000	Break in pavement caused accident.	\$3,000	
94-280	Scott	LeMars Mill	\$100,000	Pooling water caused accident.	pending	
94-281	Daviess	KY 56	\$100,000	Cement truck overturned in curve.	0	No signing or guardrails.
94-327	Boyle	US 127	\$100,000	Road construction at intersection caused accident.	0	No signing.
94-333	Gallatin	US 42	\$80,000	No signing at construction site caused accident.	0	
94-334	Gallatin	US 42	\$80,000	Refer to 94-0333.	0	
94-335	Gallatin	US 42	\$80,000	Refer to 94-0333.	0	
94-336	Gallatin	US 42	\$80,000	Refer to 94-0333.	0	
94-338	Gallatin	US 42	\$80,000	Refer to 94-0333.	0	
94-348	Russell	US 127	\$100,000	Lost control on wet road in sharp curve.	\$97,500	Vehicle went through guardrail.
94-359	Meade	US 60	\$100,000	Stop sign missing at intersection. Darkness and fog limited visibility.	0	
94-439	Russell	US 127	\$100,000	Refer to 94-0348.	0	
94-441	Perry	KY 550	\$100,000	Pooling water caused accident.	\$10,000	
94-468	Fayette	US 27	\$100,000	Pedestrian hit at signalized intersection. Walk signal would not activate.	0	Intersection with Lowery Lane.
94-480	Scott	KY 1962	\$100,000	Pooling water caused loss of control.	\$32,500	
94-494	Letcher	KY 805	\$100,000	Debris on roadway caused loss of control.	0	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
94-497	Owen	KY 227	\$100,000	Poor traffic control devices caused accident.	0	No stop signs or lighting.
94-524	Johnson	US 23	\$100,000	Lack of guardrail.	0	Vehicle went over embankment
94-550	Fayette	Man-o-War	\$100,000	Accident due to design and operation of traffic signal.	\$7,500	Intersection with Clays Mill Road.
94-594	Bath	KY 36	\$50,000	Poorly designed culvert, no guardrail or warning signs.	0	Headwall 14 inches off pavement
94-595	Bath	KY 36	\$50,000	Refer to 94-0594.	0	
94-596	Bath	KY 36	\$50,000	Refer to 94-0594.	0	
94-675	Bath	KY 36	\$50,000	Refer to 94-0594.	0	
94-676	Bath	KY 36	\$50,000	Refer to 94-0594.	0	
94-713	Letcher	Unknown	\$100,000	Claimant was sprayed with weed killer after told to pull behind spray truck.	pending	Spray entered car - causing lung damage to claimant.
94-764	Carroll	KY 36	\$75,000	Driver of vehicle lost control and hit utility pole.	0	Resurfacing caused loss of control.
94-765	Carroll	KY 36	\$75,000	Refer to 94-0764.	0	
94-786	Carroll	KY 36	\$100,000	Refer to 94-0764.	0	
94-787	Washington	BG Pkwy.	\$100,000	Lost control on ice and hit abandoned car on shoulder.	pending	
94-792	Pulaski	US 27	\$100,000	Decedent on work detail from Corrections suffered pending heat stroke.	pending	
94-910	Franklin	US 127	\$100,000	Accident in curve due to gravel in roadway.	0	
94-911	Franklin	US 127	\$100,000	Refer to 94-0910.	0	
94-946	Harrison	KY 353	\$100,000	Accident in construction zone.	0	No signs.
94-987	Harlan	KY 221	\$250,000	Shoulder drop off after resurfacing.	pending	No signs (1:5 inch offset).
94-1009	Breathitt	KY 1111	\$100,000	Lost control due to improper shoulder.	0	No guardrail protection.
94-1010	Jefferson	KY 22	\$100,000	Decedent hit tree too close to roadway.	0	
94-1012	Caldwell	Simms Road	\$200,000	Vehicle hit tree too close to roadway.	0	
94-1020	Franklin	US 127	\$100,000	Improper signs and markings at intersection.	0	Intersection with KY 898.
94-1021	Clay	US 421	\$100,000	Ice on roadway caused loss of control.	\$5,000	Improper drainage.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
94-1028	McCracken	Broad Street	\$100,000	Accident at intersection due to no traffic signal.	0	At Wal-Mart.
94-1052	Fayette	KY 956	\$250,000	Claimant slid through curve and hit telephone pole. No warning sign.	0	
94-1060	Rowan	KY 32	\$100,000	Road collapsed causing accident.	0	Poor markings.
94-1062	Lawrence	KY 3	\$100,000	Tree lying across road caused accident.	0	
94-1104	Pike	KY 1056	\$100,000	Water pooling caused accident.	\$4,500	
94-1132	Carter	KY 1	\$100,000	Break in pavement caused accident.	\$17,500	
94-1142	Lincoln	US 127	\$100,000	Improperly marked intersection caused accident in construction zone.	pending	
94-1215	Anderson	B.G. Pkwy	\$100,000	Prisoner transported in state vehicle that wrecked.	pending	
94-1237	Washington	B.G. Pkwy	\$100,000	Refer to 94-787.	0	
94-1243	Wayne		\$100,000	Hit work vehicle stopped in road.	0	No advance signs or flagger
95-7	Montgomery	I-64	\$100,000	Vehicle ran over end of guardrail, ruptured fuel tank.	0	Vehicle burned.
95-8	Montgomery	I-64	\$600,500	Refer to 95-7.	0	
95-70	Henderson	Pennyrile	\$125,000	Vehicle hit end of guardrail which penetrated car.	\$55,000	Blunt guardrail end.
95-71	Henderson	Pennyrile	\$125,000	Refer to 95-70.	\$55,000	
95-73	Floyd	KY 194	\$100,000	Condition of road.	pending	Defect or object upon hwy.
95-111	Knott	Unknown	\$100,000	Improper drainage.	0	
95-287	Menifee	Unknown	\$100,000	Inmate cut by chainsaw while on work detail.	0	Clearing brush.
95-293	Bell	US 25 E	\$100,000	Hit patch of ice.	pending	Culvert filled.
95-335	Boyle	KY 34	\$100,000	Hit guardrail; base and bolts of guardrail deteriorated.	pending	Guardrail inadequate.
95-336	Pike	US 23	\$100,000	Tire came off of DOH vehicle and struck another vehicle causing it to hit another.	pending	
95-381	Carter	KY 1	\$150,000	Refer to 94-1132.	\$17,500	
95-402	Perry	KY 451	\$100,000	Failed to install guardrail to protect house.	0	Pedestrian in yard hit by vehicle.
95-403	Perry	KY 451	\$100,000	Refer to 95-402.	0	
95-416	Grayson	KY 1214	\$100,000	Lost control of vehicle on wet pavement.	0	No warning signs.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
95-451	Grayson	Sunbeam Road	\$100,000	Lost control of vehicle after hitting pothole.	0	Not state-maintained road.
95-452	Grayson	Sunbeam Road	\$100,000	Refer to 95-451.	0	
95-453	Grayson	Sunbeam Road	\$50,000	Refer to 95-451.	0	
95-493	Perry	KY 7	\$1,000	Lost control of vehicle after hitting a pothole.	\$14,000	
95-536	Simpson	KY 1008	\$100,000	Stop sign obscured by tree branch.	0	
95-537	Simpson	KY 1008	\$100,000	Refer to 95-536.	0	
95-607	Bell	KY 188	\$200,000	Vehicle lost control on curve.	0	No guardrail.
95-641	Hopkins	WK Pkwy	\$50,000	Blunt guardrail end treatment penetrated car.	0	
95-642	Hopkins	WK Pkwy	\$50,000	Refer to 95-641.	0	
95-643	Hopkins	WK Pkwy	\$50,000	Refer to 95-641.	0	
95-644	Hopkins	WK Pkwy	\$50,000	Refer to 95-641.	0	
95-645	Hopkins	WK Pkwy	\$50,000	Refer to 95-641.	0	
95-703	McCracken	US 45	\$100,000	Lack of motorcycle warning signs for bridge with steel deck.	0	
95-717	Pendleton	KY 177	\$100,000	Vehicle hit CSX railroad bridge.	0	No height signs.
95-783	Grayson	US 62	\$100,000	Lost control of vehicle in curve.	0	Ruts in road allowed water pooling.
95-810	Powell	Shipsbranch Rd.	\$200,000	Lack of stop sign.	\$5,000	No stop signs, no guardrail.
95-817	Meade	KY 1600	\$100,000	View of stop sign obscured. County responsible for sign.	0	Intersection with Coleman Road.
95-818	Meade	KY 1600	\$100,000	Refer to 95-817.	0	
95-924	Pendleton	KY 17	\$100,000	No signing or reduced speed before a curve.	\$15,000	
95-939	Jefferson	I-64	\$100,000	Vehicle stopped at construction site.	0	1264 interchange
95-949	Jefferson	I-64	\$100,000	Refer to 95-939.	0	
95-940	Jefferson	I-64	\$100,000	Refer to 95-939.	0	
95-941	Jefferson	I-64	\$50,000	Refer to 95-939.	0	
95-979	Anderson	KY 513	\$100,000	Vehicle ran off road and overturned.	pending	No guardrail
95-980	Anderson	KY 513	\$100,000	Refer to 95-979.		

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
95-999	Leslie	DB Pkwy	\$100,000	Assaulted by fellow employee at toll booth.	0	Failed to supervise workplace.
95-1005	Laurel	KY 1193	\$100,000	Pedestrian fell on bridge.	0	Drain Grate.
95-1020	Campbell	KY 8	\$100,000	Improper drainage.	0	Drainage ditch inadequate.
95-1042	Bell	KY 221	\$100,000	Tree fell and hit car.	0	
96-1	Shelby	KY 1779	\$100,000	Guardrail not attached to bridge.	0	
96-13	Boyle	KY 52	\$100,000	Lost control on ice covered road.	0	
96-14	Boyle	KY 52	\$50,000	Refer to 96-13.	0	
96-15	Boyle	KY 52	\$50,000	Refer to 96-13.	0	
96-16	Boyle	KY 52	\$50,000	Refer to 96-13.	0	
96-18	Lawrence	US 23	\$100,000	Inappropriate warning signs; Improper grade; failure to design overpass.	0	Intersection with KY 3.
96-20	Bell	US 231	\$100,000	Head on collision with state vehicle.	\$10,295	Negligence of defendant.
96-60	Grayson	KY 1214	\$100,000	Vehicle ran off road.	0	About MP 12.
96-68	Pike	US 23	\$100,000	Rock slide; no warning signs or cones.	0	About MP 22.
96-83	Pike	Upper Pompey Creek Road	\$100,000	Swerved into opposing lane of traffic to avoid break in pavement; went over embankment.	\$2,250	Road should have been repaired.
96-132	Magoffin	Unknown	\$100,000	Dropped off onto shoulder and lost control.		
96-181	Shelby	I-64	\$100,000	Driver fell asleep; hit inadequate guardrail.	pending	Vehicle fire.
96-185	Harlan	Unknown	\$100,000		0	
96-190	Shelby	I-64	\$100,000	Refer to 96-181.	pending	
96-218	Johnson	KY 40	\$100,000	Rock fell from embankment.	\$7,320	Failed to inspect.
96-297	Ohio	KY 54	\$250,000	No narrow bridge warning signs.	0	Bridge width 19 feet.
96-314	Fleeting	DNA	\$100,000	Bleach and battery acid poured down drain; inhaled fumes and later died.	0	
96-315	Fleeting	DNA	\$100,000	Problems occurred after inhaling fumes.	0	
96-354	Crittenden	US 641	\$100,000	Inadequate markings and road signs.	pending	Back of guardrail and shoulder defective.
96-356	Mercer	KY 2168	\$100,000	Vehicle crossed intersection and went over embankment and hit a utility pole.	0	No stop sign at intersection.
96-430	Garrard	KY 34	\$100,000	Pulled out in front of vehicle on US 27.	0	Should have been a signal.
96-431	Garrard	KY 34	\$100,000	Refer to 96-430	\$1,800	



**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
96-463	Warren	US 68	\$100,000	Vehicle hydroplaned on roadway.	0	Failure to correct known defects in drainage.
96-490	Perry	KY 276	\$100,000	Car came around curve and state crew was in road working on ditches.	0	Should have had flagman.
96-536	Christian	KY 1682	\$250,000	Lack of traffic signal.	pending	Intersection of KY 1682 and KY 91.
96-546	Hopkins	Pennyrile Parkway	\$100,000	Lost control due to pothole in road.	0	
96-621	Madison	Unknown	\$100,000	Traffic signing.	0	
96-626	Mason	KY 8	\$100,000	End of guardrail penetrated vehicle. Treatment.	0	Improper blunt guardrail end
96-640	Daviess	Old Lyddane Rd.	\$100,000	Ran stop sign; poor signage; trees obscured view.	0	Intersection with KY 81.
96-641	Daviess	Old Lyddane Rd	\$100,000	Refer to 96-641.	0	
96-642	Daviess	Old Lyddane Rd	\$50,000	Refer to 96-641.	0	
96-687	Adair	KY 704	\$100,000	No curve warning sign.	0	
96-716	Hart	I-65	\$68,068	Accident at construction zone.	0	Lane closure, merging into one lane.
96-742	Knox	US 25E	\$200,000	Construction zone accident; head on collision where traffic was changed from 4-lane to 2-lane.	pending	Necessary warning signs not in
96-785	Carroll	KY 467	\$100,000	Motorcyclist swerved to avoid opposing vehicle; ran off road and hit culvert.	0	No warning signs of culvert.
96-816	Allen	US 31E	\$100,000	Vehicle ran red light due to improper or non-working traffic signal.	0	Intersection with KY 101.
96-818	Scott	KY 32	\$100,000	Failed to warn of curve.	0	
96-819	Lyon	KY 293	\$100,000	Vehicle failed to stop at stop sign. warning signs.	0	Improperly maintained intersection
96-824	Allen	US 31E	\$100,000	Refer to 96-816.	0	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
96-832	Madison	KY 876	\$100,000	Vehicle ran off road and hit trees and embankment.	pending	Improper design, guardrail, lack of warning signs, shoulder defect.
96-855	Johnson	KY 3388	\$100,000	Vehicle ran off road, struck railroad rails driven into embankment either as guardrail or to stop erosion.	0	Improper placement of hazard.
96-856	Boyle	KY 33	\$100,000	Stop sign missing.	\$12,000	Intersection with KY 2168.
96-882	Boyle	US 150	\$100,000	Pedestrian hit by vehicle at crosswalk.	0	Pedestrian signal not working.
96-884	Kenton	KY 1092	\$100,000	Lost control on wet pavement; struck guardrail.	0	No warning of hazardous conditions.
96-885	Kenton	KY 1092	\$100,000	Refer to 96-884.	0	
96-886	Kenton	KY 1092	\$50,000	Refer to 96-884.	0	
96-892	Warren	I-65	\$100,000	Ran off road; hit abandoned vehicle on shoulder.	0	Abandoned vehicle stuck in hole; no warning of hole.
96-893	Warren	KY 526	\$100,000	Lost control due to shoulder drop off.	0	
96-974	Jefferson	I-64	\$100,000	Lost control due to difference in elevation.	0	Difference in elevation 3-4 inches.
96-981	Floyd	KY 321	\$100,000	Lost control due to mud on road.	0	Mud from coal trucks.
96-1064	Warren	US 68	\$100,000	Vehicle hit pedestrian.	pending	Inadequate warning signs.
96-1069	Madison	KY 388	\$125,786	Road construction.	0	Inadequate traffic controls.
97-0043	Galloway	KY 444	\$100,000	Lost control when hit a patch of ice.	\$13,854	Improper drainage, bad design.
97-0055	Leslie	D. B. Pkwy	\$100,000	Water ponding on road.	\$72,000	Improper drainage.
97-0056	Knott	KY 80	\$ 75,000	Rock slide from mountain hit car.	pending	State failed to construct and maintain hill and roadway.
97-0174	Boyle	3rd St. and Main St.	\$100,000	Pedestrian sign not working properly.	0	
97-0183	Leslie	KY 66	\$100,000	Bad road design.	\$3,500	
97-0234	Boone	I-71	\$100,000	Improper culvert design and construction.	0	
97-0235	Bell	US 25E	\$100,000	Failure to provide roadside barrier.	pending	Hit floodwall.
97-0278	Knott	KY 160	\$100,000	Fatal accident. Hit utility pole.	pending	
97-0319	Knott	KY 1097	\$100,000	No stop sign.	pending	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
97-0368	Knox	KY 225	\$ 58,000	Improper drainage.	pending	Road had been raised and did not drain properly.
97-404	Oldham	Unknown	\$200,000	Improperly maintained road surface.	0	
97-0411	Bath Rd.	146 Fraley	\$ 50,000	Cut tree on property.	0	Damaged property.
97-0415	Caldwell	US 641	\$100,000	State vehicle speeding, crossed median, and struck oncoming vehicle.	\$32,250	
97-0416	Caldwell	US 641	\$100,000	Same as 97-0415.	\$32,250	
97-0417	Caldwell	US 641	\$ 50,000	Same as 97-0415.	\$32,250	
97-0418	Caldwell	US 641	\$ 50,000	Same as 97-0415.	\$32,250	
97-0424	Warren	Victoria St. and Wobson Lane.	\$100,000	Improper traffic control device.	0	
97-0425	Warren	Victoria St. and Wobson Lane.	\$100,000	Same as 97-0424.	0	
97-0481	Jefferson	On ramp to I-264 E.	\$100,000	The curb in the road was negligent hazard.	0	
97-0499	Clark	KY 402	\$100,000	Hole in fence allowed cow to exit.	0	
97-0523	Magoffin	US 460	\$200,000	Lost control due to dip in road.	pending	Guardrail not properly maintained.
97-0544	Johnson	KY 1428	\$100,000	Large dip in road caused fatal accident.	0	
97-0581	Bourbon	KY 1678	\$100,000	Edge of roadway failed.	pending	
97-0605	Franklin	US 460	\$100,000	Lack of no passing zone.	0	
97-0621	Madison	Unknown	\$100,000	Lack of stop sign.	pending	
97-0646	Perry	KY 1067	\$100,000	Road needed widening.	pending	
97-0647	Perry	KY 1067	\$100,000	Same as 97-0646.	pending	
97-0742	Trimble	KY 3175	\$ 50,000	Improper bridge and roadway design.	\$5,000	
97-0764	Pike	KY 1967	\$100,000	Culvert has flooded and damaged property.	pending	
97-0765	Monroe	KY 100	\$100,000	Vehicle hit ditch when turning into gas station.	pending	
97-0774	Floyd	US 23	\$200,000	Water ponding.	pending	

Table 9-3, Detailed Information For Claims of \$50,000 or More

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
97-0777	Montgomery	KY 1991	\$100,000	Failed to properly design and maintain roadway.	0	
97-0778	Montgomery	KY 1991	\$100,000	Same as 97-0777.	0	
97-0820	Scott	I-75	\$200,000	Pothole.	\$32,000	
97-0826	Jefferson	KY 22	\$ 99,000	Improper striping, pole to close too road.	0	Low shoulder sign hid by trees.
97-0922	Jefferson	KY 2053	\$100,000	Hit pothole in road and overturned.	\$2,952	
97-0923	Pike	KY 1056	\$100,000	Break in roadway caused accident.	\$25,000	
97-0943	Powell	Unknown	\$100,000	Miscellaneous personal property loss/damage.	0	
97-0976	Pike	US 119	\$100,000	Road closed sign missing.	0	Road construction zone.
97-0991	Pike	US 119	\$100,000	Refer to 97-0976.	pending	
97-1020	Rowan	US 60	\$100,000	Inadequate warning signs or devices.	pending	
97-1025	Jefferson	Lexington Rd.	\$125,000	Pedestrian fatal accident, improper crosswalk.	pending	
97-1026	Jefferson	Lexington Rd	\$125,000	Same as 97-1025.	pending	
97-1049	Woodford	KY 33	\$ 75,000	No guardrail.	pending	
97-1078	Kenton	KY 17	\$100,000	Water run-off problems, created ice hazard.	pending	
98-17	Letcher	Unknown	\$100,000	Lost control due to debris in the road.	0	
98-23	Johnson	Unknown	\$100,000	Improper drainage caused accident.	0	
98-80	Floyd	Unknown	\$100,000	No guardrail.	0	
98-170	Harlan	KY 38	\$125,000	Tree fell onto a car causing a fatal accident.	Pending	Failure to maintain reasonably safe roads.
98-175	Harlan	KY 38	\$125,000	Refer to 98-170.	Pending	
98-203	Gallatin	KY 467	\$100,000	Failure to warn of dangerous flood waters.	Pending	
98-234	Knox	KY 225	\$100,000	Failed to negotiate a curve, lost control and wrecked.	Pending	Improper design and failure to maintain shoulder/curb.
98-257	Montgomery	Unknown	\$50,404	Construction caused loss of business.	\$52266.67	
98-278	Warren	US 231	\$100,000	Lack of traffic control at marked crosswalk.	0	Pedestrian accident.
98-279	Jefferson	Unknown	\$100,000	Pedestrian fall.	0	
98-301	Knox	US 25E	\$100,000	Failure to have traffic signal.	0	Intersection with KY 3041.

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
98-339	Martin	Unknown	\$100,000	Inadequate warning signs or markings.	\$1356	
98-496	Pike	KY 199	\$100,000	Break-off in road.	0	Failure to properly maintain highway.
98-565	Marshall	Purchase Parkway	\$100,000	Vehicle hydroplaned due to water pooling.	0	
98-567	Green	KY 61	\$100,000	No warning of high water; No guardrails.	0	High water common at accident site.
98-572	Henderson	KY 812/ KY 2099	\$100,000	Trees and brush obstructed the view of vehicles at the intersection.	Pending	
98-579	Henderson	KY 812/ KY 2099	\$100,000	Refer to 98-572.	Pending	
98-580	Henderson	KY 812/ KY 2099	\$100,000	Refer to 98-572.	Pending	
98-581	Henderson	KY 812/ KY 2099	\$100,000	Refer to 98-572.	Pending	
98-662	McCracken	Unknown	\$100,000	Inadequate warning signs or markings.	\$90,000	
98-727	Breckinridge	KY 259	\$100,000	Vehicle left road and hit earth embankment multiple times.	0	Negligent design and construction of roadway.
98-767	Floyd	Jack's Creek Road	\$100,000	Road crew was cleaning debris out of ditches, left piles of debris on the road, object from debris injured plaintiff's eye.	Pending	Road crew should have stopped traffic until debris was cleaned.
98-797	Boone	Unknown	\$200,000	No guardrail.	0	
98-900	Woodford	US 60	\$100,000	Private company was creating entrance onto property off US 60 and left 4-inch deep trench on shoulder. Claimant rode his bike into the trench and was injured.	Pending	Failure to warn of the defect, failure to maintain highway in a reasonable safe condition.
98-901	Kenton	I-75	\$100,000	Guardrail not repaired properly after previous accident (6 days prior).	0	
98-902	Perry	KY 1146	\$100,000	Pedestrian fell over culvert into creek.	Pending	Lack of warning of no shoulder, no lights or reflectors on road.
98-918	Barren	US 31E	\$100,000	Failed to keep traffic control device in proper working order.	Pending	
98-929	Morgan	Unknown	\$100,000	Pavement defect caused accident.	0	
98-936	Logan	Unknown	\$100,000	Inadequate warning signs or markings.	0	
98-958	Letcher	US 23	\$100,000	Failed to control traffic through	Pending	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
				construction zone and failed to install proper guardrails.		
98-977	Barren	US 31E	\$250,000	Train hit vehicle.	\$3,000	Inadequate warning signs and view obstruction.
98-996	Franklin	US 60	\$100,000	Lost control, crossed centerline, hit head-on into a rock wall.	0	Failure to remove ice from roadway.
99-13	Logan	US 68/80	\$200,000	Improper water drainage in construction zone causing severe eroding in nearby farms.	0	Negligent design and construction of road.
99-64	Muhlenberg	KY 181	\$100,000	Vehicle lost control due to rain.	\$3,500	Water pooling.
99-156	Madison	KY 52 @ Eastern Bypass	\$100,000	Unit 1 traveling on closed road (construction) struck unit 2 on functional road.	Pending	Failure to prevent use of road when under construction.
99-511	Fayette	US 27	\$100,000	Pedestrian hit by a drunk driver.	Pending	Negligently installed crosswalk, bad traffic signal.
99-529	Scott	US 460	\$150,000	View obstructed, sight distance limited.	\$2,500	
99-535	Kenton	12 <sup>th</sup> St. and Dixie Highway exit ramp from I-75/71	\$83,918	Business assets damaged by storm water runoff and flooding.	Settled	Defective design and construction of storm water control.
99-570	Fayette	US 27	\$100,000	Refer to 99-511.	Pending	
99-571	Fayette	US 27	\$100,000	Refer to 99-511.	Pending	
99-589	Hart	KY 569 @ BF Richards on Rd	\$100,000	Claimant could not negotiate right hand turn and went into ditch.	Pending	Negligent design of road, failure to install guardrails.
99-609	Boone	US 42	\$100,000	Potholes.	0	Failure to maintain roadway.
99-640	Pike	KY 1441/ US 119	\$107,195	Collision with vehicle pulling into traffic.	Pending	Defective design and maintenance of roadway.
99-642	Muhlenberg	KY 181	\$100,000	Refer to 99-64.		
99-668	Edmonson	KY 259	\$100,000	Lost control and hit another vehicle on the road.	Pending	Poorly constructed highway, not properly maintained.
99-696	Graves	US 45	\$100,000	DOT employee hit claimant while on job in state vehicle.	Pending	

**Table 9-3, Detailed Information For Claims of \$50,000 or More**

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
99-728	Woodford	KY 1964	\$100,000	Claimant hit by another car while in construction zone.	Pending	Failure to supervise contracted construction company and failure to follow safety procedures.
99-750	Clark	US 60	\$100,000	Vehicle slid around curve, rolled over into ditch and culvert.	Pending	Negligent construction and maintenance of highway.
99-852	Harlan	US 421	\$100,000	Culvert blocked, ditch overflowed onto road and the water froze.	Pending	DOH aware of the problem and did not correct it.
99-854	Harlan	US 421	\$100,000	Refer to 99-852.	Pending	
99-891	Simpson	KY 100	\$250,000	Vehicle could not negotiate curve and went off road.	0	Negligent design, signing, and maintenance.
99-969	Jefferson	KY 61	\$200,000	View obstructed due to shrubs.	Pending	Intersection of Preston St. and Jackson St.
99-1035	Daviess	US 231	\$100,000	Unprotected cement bridge wall.	Pending	Failure to replace guardrails and maintain highway.
99-1112	Grayson	KY 259	\$100,000	Two state vehicles stopped on roadway removing debris caused accident.	Pending	Failure to warn oncoming vehicles of their presence.
99-1212	Meade	KY 1882 @ KY 1816	\$100,000	Failure to take corrective action on fallen stop sign.	0	Problem was known and not corrected.
00-145	Harlan	US 421	\$100,000	Motorcycle slipped on sand left by road crew to clean up an oil spill.	Pending	
00-152	Whitley	Unknown	\$175,000	Pavement defect caused accident.	0	
00-153	Whitley	Unknown	\$175,000	Refer to 00-152.	0	
00-163	Carroll	Unknown	\$100,000	Accident involving DOH vehicle.	0	
00-279	Muhlenberg	US 431	\$300,000	Failure to maintain shoulder/failure to erect and maintain guardrail.	Pending	Guardrails removed by Fulton Co. prior to accident.
00-295	Muhlenberg	US 431	\$150,000	Refer to 00-279.	Pending	
00-409	Trigg	Unknown	\$100,000	Ran into sign.	0	
00-410	Webster	Unknown	\$100,000	Work construction zone.	0	
00-551	Fulton	Upper Bottom Rd.	\$150,000	No guardrails on bridge.	0	
00-552	Fulton	Upper Bottom Rd.	\$50,000	Refer to 00-551.	0	

Table 9-3, Detailed Information For Claims of \$50,000 or More

Claim Number	County	Route	Amount Sought	Reason For Claim	Amount Paid	Comments
00-553	Fulton	Upper Bottom Rd.	\$50,000	Refer to 00-551.	0	
00-554	Fulton	Upper Bottom Rd.	\$50,000	Refer to 00-551.	0	
00-555	Fulton	Upper Bottom Rd.	\$50,000	Refer to 00-551.	0	
00-621	Adair	KY 206	\$200,000	Lost control due to shoulder defect.	Pending	Paving Contract
00-647	Kenton	Unknown	\$175,000	Inadequate warning signs or markers.	0	
00-648	Kenton	Unknown	\$175,000	Inadequate warning signs or markers.	0	
00-670	Clay	Unknown	\$100,000	Accident involving DOH vehicle.	0	
00-755	Oldham	KY 524	\$100,000	Road too narrow, no shoulder.	Pending	
00-777	Knox	KY1304	\$100,000	Falling tree or limbs/vehicle hit tree.	Pending	
00-778	Knox	KY1304	\$100,000	Falling tree or limbs/vehicle hit tree.	Pending	
00-779	Knox	KY1304	\$100,000	Falling tree or limbs/vehicle hit tree.	Pending	
00-940	Warren	Talley Rd.	\$125,000	Miscellaneous personal property loss or damage.	0	
00-941	Warren	Talley Rd	\$125,000	Miscellaneous personal property loss or damage.	0	
00-942	Warren	Talley Rd	\$100,000	Miscellaneous personal property loss or damage.	0	
00-947	Wolfe	KY 746	\$100,000	Improper drainage caused accident.	Pending	
00-949	Wolfe	KY 746	\$100,000	Improper drainage caused accident.	Pending	
00-950	Wolfe	KY 746	\$142,200	Improper drainage caused accident.	Pending	
00-962	Warren	Unknown	\$350,000	Miscellaneous personal property loss or damage.	Pending	
00-982	Harlan	US 421	\$250,000	Existing guardrail inadequate.	Pending	
01-004	Franklin	Unknown	\$50,000	Miscellaneous personal property loss or damage.	0	
01-20	Scott	KY 1963	\$200,000	Pavement defect caused accident.	0	
01-70	Calloway	KY 121	\$200,000	Shoulder dropoff caused loss of control.	Pending	
01-165	Shelby	KY 55	\$200,000	Improper drainage caused accident.	Pending	
01-358	Whitley	KY 836	\$100,000	Object in road.	Pending	
01-528	Graves	US 45	\$100,000	View obstructed, sight distance limited.	0	



**Table 9-3, Detailed Information For Claims of \$50,000 or More**

<b>Claim Number</b>	<b>County</b>	<b>Route</b>	<b>Amount Sought</b>	<b>Reason For Claim</b>	<b>Amount Paid</b>	<b>Comments</b>
01-618	Fayette	Versailles Rd.	\$100,000	Accident involving DOH vehicle.	0	
01-631	Anderson	KY 1510	\$100,000	Inadequate warning signs or markings, road not wide enough.	0	
01-664	Pulaski	US 27	\$76,049	Improper drainage damaged property.	Pending	
01-686	Henderson	KY 136	\$200,000	Shoulder related defect - no guardrail.	Pending	
01-780	Letcher	US 119	\$100,000	Inadequate warning signs or markings.	Pending	
01-799	Calloway	Old Concord Rd.	\$100,000	Road not wide enough.	Pending	
01-803	Calloway	Old Concord Rd.	\$100,000	Road not wide enough.	Pending	
01-804	Calloway	Old Concord Rd.	\$100,000	Refer to 01-803.	Pending	
01-805	Calloway	Old Concord Rd.	\$100,000	Refer to 01-803.	Pending	
01-905	Madison	KY 52	\$350,000	Pedestrian - other.	Pending	
01-926	Nelson	US 31E	\$200,000	View obstructed, sight distance limited.	Pending	
01-956	Jefferson	Plantside Dr.	\$100,000	Work construction zone - other.	pending	



## CHAPTER 10

# Introduction To Accident Reconstruction

*Traffic accident reconstruction is the process of using observed data, the laws of physics, an understanding of the mechanical behavior of vehicles and a scientific approach to draw conclusions about how a traffic accident occurred. This chapter has been written to provide a general overview of accident reconstruction. It introduces several of the major topics and provides a few example problems. A complete review of accident reconstruction is not possible in such a limited text, nor can it be taught in such a limited time period. It is possible, however, to provide an overview so that seminar participants can understand how reconstruction might be used to provide crucial evidence in a tort liability trial involving a traffic accident.*

*Some types of accident reconstruction are very simple. For example, where a vehicle came to rest after leaving clear skid marks on the pavement, the initial speed may be estimated from a knowledge of the pavement friction level and the length of the skid marks. Other types of accident reconstruction are complex. Examples include involvement of tractor-trailer trucks, vehicles undergoing a series of different reactions during a collision, or where the data is incomplete. Where the reconstruction activities are to be complex, a high degree of training may be necessary on the part of the reconstructionist.*

*Reconstruction usually consists of gathering and interpreting data, applying scientific principles, and drawing conclusions based upon the analysis of the evidence. There are no rules or techniques which must always be followed during the reconstruction. Instead, the investigator chooses from many reconstruction techniques to find those analytical tools that best fit the available evidence and the type of collision.*

*Performing a reconstruction has often been described as similar to working a crossword puzzle. It is rare that a puzzle can be worked by staring at clue one and answering the clues in succession until the puzzle is completed. Usually, the person working the puzzle solves one clue here, one clue there and another clue in some other place. Every clue that is solved helps in solving the remaining clues. So it is with reconstruction. The more evidence (clues) available, the more the reconstructionist (puzzle solver) knows about the accident (puzzle) and the more likely it becomes that the reconstruction (puzzle) will be successfully completed.*

*The remainder of this chapter points out the necessity of good data, introduces some reconstruction techniques, and provides several example problems.*

### Traffic Accident Investigation

The majority of the information available to the reconstructionist is taken from the accident site. This may include photographs of the vehicles, or photographs of other physical evidence like skid marks and damage to secondary objects. Measurements of the final locations of the vehicles; identification of the point of impact; identification, measurement and characterization of skid marks; examination of the vehicles; interviews with drivers and witnesses; and other techniques are used to gather this data.

Rarely does the investigator have complete data. Often the reconstructionist is asked to analyze an accident that is many months old, and the physical data will be gone by then. Skid marks will have disappeared and the vehicles may have been removed from the salvage yard prior to the investigator's examination. Even when the investigator visits the site soon after the accident, the evidence may be incomplete. For example, in some collisions the vehicles leave only partial skid marks. The absence of sufficient data and inaccurate data are normally the biggest difficulties in the reconstruction of an accident.

Frequently, the reconstructionist may have to use several techniques to overcome the lack of data or to verify the accuracy of the data. Once the investigator has gathered all available data and has assessed its accuracy, the reconstruction may begin.

## Typical Reconstruction Techniques

Many activities qualify as reconstruction techniques. This chapter will briefly introduce some of the prominent reconstruction activities and will describe some of their more common uses. The reader should keep in mind that this is not a complete discussion of reconstruction. It is only an introduction and the reader is advised to consult more complete texts to learn of the strengths and limitations of the techniques and to acquire sufficient knowledge to utilize the techniques.

### Crush Distance as a Measure of Vehicle Speed

One of the simplest methods for estimating the speed of a vehicle involved in a collision is to measure the total deformation (crush) experienced by the vehicle. The wider and deeper the crush, the greater the velocity of the collision. More specific conclusions can be drawn about the crush in a specific accident by comparing it to the amount of crush experienced by a similar vehicle of an accident at a known speed. If enough of the accident crushes have been measured, it is possible to prepare a chart of crush distance versus speed. Typical crush-speed charts for front, side and rear impacts are shown in Figure 1.

There are serious limitations to using crush-speed figures. For example, a large, old car has a more substantial frame than a small, new car. The older, stronger car will have less crush deformation than the small car in similar collisions at identical speeds.

A second problem deals with the type and shape of object, which has been struck. In a high-speed side collision, a utility pole may make a very deep penetration. A wider object like a brick wall will have a much shallower but wider crush area, which may be uniform across the entire side of the car.

There are so many differences in automobile materials; designs and construction methods that it is not realistic to expect that one crush-speed curve can accurately identify the performance of all vehicles. Perhaps the best use of curves like those shown in Figure 1 is to make quick, preliminary estimates of vehicle speeds from measured crush deformations.

In Alabama, it is virtually impossible to use crush distance as an estimate of vehicle speed in a court of law. Previous court rulings have severely limited the acceptability of crush-speed analyses as evidence.

The general crush-speed relationship has been improved for individual vehicle models. The National Highway Traffic Safety Administration (NHTSA) has conducted controlled crush tests to produce data like that reproduced in Figure 2. The table shows that for a 1988 Honda Civic weighing 2,542 pounds and driven at 35 mph, the average crush was 18.7 inches when the vehicle hit a rigid object in a frontal crash. The same table shows that a stationary Honda Civic weighing 3,710 pounds was struck from the rear by a rigid barrier moving 29.1 mph to produce an average of 20.4 inches of crush.

These types of tests are conducted under controlled conditions and the crush distance is the average of that measured at several uniformly spaced locations.. This accurate crush information is then used to determine an "energy dissipation equation." Because this technique uses data gathered under controlled conditions for individual models, it is much more accurate than a general crush-speed chart.

An example of the estimation of vehicle speed from crush data may be found in example problem 2 at the end of this chapter.

### Kinetic Energy

A moving vehicle possesses a certain amount of kinetic energy. An equation used to describe this energy is as follows:

$$E = \frac{1}{2} m (v^2 - v_0^2) \quad [10-1]$$

where  $m$  equals the mass of the vehicle,  $v$  equals the final velocity of the vehicle and  $v_0$  equals the initial velocity of the vehicle.

This formula may be used to calculate the total kinetic energy associated with stopping a vehicle by setting the final velocity to zero. A good use for this equation is for designing a crash cushion type of traffic barrier. The cushion is designed with enough structural strength to absorb the total kinetic energy while slowing the vehicle at an acceptable rate to prevent serious injuries.

### Time-Distance-Speed Relationship

The accident reconstructionist is often asked to establish the speed of vehicles at certain points during the sequence of collision events. There are a number of simple equations which may be used to make these types of calculations. All of these equations deal with five quantities:

1. Time (t)
2. Distance (d)
3. Acceleration (a)
4. Velocity (v)
5. Initial Velocity ( $v_0$ )

For a constant velocity situation, the distance traveled may be found by multiplying velocity by time. Once the velocity begins to vary, then acceleration (or deceleration) is involved. There are three general equations which form the basis for most calculations involving velocity, distance, acceleration or time. These equations are as follows:

$$at = v - v_0 \quad [10-2]$$

$$d = v_0 t + \frac{1}{2} at^2 \quad [10-3]$$

$$v^2 = v_0^2 + 2ad \quad [10-4]$$

where the variables have been defined previously. These basic equations are often manipulated or combined to allow the determination of an unknown variable for different combinations of known variables.

During an accident reconstruction, it is often helpful to know the location of each involved vehicle at various times during the collision sequence. If the initial paths of the vehicles are known, the investigator may choose a starting point and starting time, then plot the location of each vehicle at fixed times during the sequence. Since the point of impact is frequently known, a common technique is to start there and work backwards to find the locations of the vehicles at fixed times as they approached the impact point.

A knowledge of typical vehicle acceleration and deceleration rates is very helpful in forming scenarios of what might have happened in a collision where no other data is available. Establishing the location of a vehicle- undergoing "typical" acceleration or deceleration forms a good starting point for the analysis.

An example of a time-distance-speed calculation is shown in example 1 at the end of this chapter.

### Speed from Skid Marks

Skid marks are frequently found at accident scenes. If all four of the vehicle's wheels are locked and the vehicle slides on a level surface there will be four skid marks, although sometimes the rear wheel marks lie on top of the front wheel marks and are difficult to see. Where the skid marks can be measured and the friction value of the pavement is known, the initial speed of the vehicle may be found using the following equation:

$$D = \frac{S^2}{30f} \quad [10-5]$$

where D equals distance in feet, S equals speed in miles/hour and f is the coefficient of friction (drag factor). Nomographs are available to solve this equation. A good example is shown in Figure 3. Using the figure, it is possible to show that for a drag factor of 0.50 and a speed of 30 mph, a vehicle would skid 58 feet while stopping.

Formula 10-5 is simple and the nomograph is easy to use. Unfortunately, the simplicity of the concept misleads many investigators who fail to recognize that special circumstances often exist which require additional analysis. For example, one or more wheels may fail to leave a skid mark. A second example is when the vehicle slides part way on one pavement surface then the remainder of the skid distance on a second type of pavement surface. A third example involves when the left side of the vehicle slides on pavement but the right side slides on an earth shoulder.

There are additional complicating factors. In a sudden stop the center of gravity of a vehicle shifts as the front end goes downward and the back end rises. The front end of the vehicle then carries more of the weight and must provide more of the stopping power. Additionally, the pavement friction factor has a different value at high speed than at low speed, and as a tire slides and becomes hotter the friction factor becomes lower. Many times, the skid lengths vary for different wheels on the vehicle. All of these factors complicate the analysis.

The key to estimating speed from skid marks often lies in the accurate assessment of the friction factor, which is sometimes called the skid number or the drag factor. Researchers have determined that 40 mph is the standard speed at which the friction number should be measured. If the friction value is established at another speed, it must be adjusted to compensate. If the friction factor at the accident location is unknown, it may be estimated: (1) from values found in standard tables, (2) by performance of a skid test with an automobile, or (3) by performing a pseudo test using a small drag test device.

An example of using the drag equation to estimate velocity may be found in example 4 at the end of this chapter.

### Vaulting

When a vehicle becomes airborne, it is acted upon by gravity and becomes subject to the laws of physics. This is a typical "projectile" analysis, like that used to determine how far a bullet will go if fired at a certain velocity from a horizontal rifle.

If the investigator knows the vertical distance that the vehicle traveled while airborne, the time of fall may be calculated. If the investigator knows the horizontal distance that the vehicle traveled in this time, then the speed of the vehicle may be determined. This is one of the simplest and most accurate of reconstruction techniques.

The exact vault formula is complicated in appearance and requires knowledge of: (1) the angle at which the vehicle was launched when it became airborne, and (2) the horizontal and vertical distances which the vehicle traveled before impact. The exact formula is as follows:

$$v_0^2 = \frac{g}{2} \frac{D}{D \sin\theta \cos\theta} \frac{h}{I(h - \cos^2\theta)} \quad [10-6]$$

Where  $v_0$  equals initial velocity,  $g$  equals acceleration of gravity,  $D$  equals the horizontal distance traveled,  $h$  equals the vertical distance traveled, and  $\theta$  equals the takeoff angle.

When using equation 10-6, the investigator must be careful to note that the takeoff angle is positive if the car was angled upward when it took off, and the angle is negative if the car was angled downward. The value of  $h$  can be positive or negative depending on whether the landing spot was below or above the takeoff point.

There are many complicating factors in the use of this equation. The takeoff angle may be difficult to measure. If the vehicle hits a curb or a bump, the car may spring upward without leaving evidence of the takeoff angle. If the vehicle traveled a great distance after takeoff, it may be very difficult to establish the horizontal and vertical portions of its travel. If the car rotates in the air, the front wheels may dip downward and hit before they would have if the car remained level. The measured horizontal distance between takeoff and landing will be smaller than it should be. This is important because the formula is actually intended to apply to the center of gravity of the vehicle.

The formula intimidates many investigators. To overcome this, some authors have prepared simple tables to indicate takeoff speed based upon the horizontal and vertical distances that the car traveled. Example 3 at the back of this chapter indicates how such a table should be used. The example also shows how to handle an inclined takeoff of the vehicle.

### Linear Momentum

The momentum involved in a collision provides a useful tool for examining the actions of the vehicles. The momentum equation is a simple concept. It states that the vector sum of momentum before the collision must equal the vector sum of momentum after the collision.

Momentum is the product of mass times velocity. The momentum equation applicable to traffic accidents may be simplified and written as follows:

$$w_1 v_1 + w_2 v_2 = w_1 v_3 + w_2 v_4 \quad [10-7]$$

where  $w_1$  equals the weight of vehicle one and  $w_2$  equals the weight of vehicle 2,  $v_1$  and  $v_3$  are the velocities of vehicle 1 before and after the collision, and  $v_2$  and  $v_4$  are the velocities of vehicle 2 before and after the collision.



In general, the investigator needs to know the paths of the approaching vehicles, the paths of their departures after the collision, the speeds after impact and the approximate mass or weight of each vehicle.

The most common use of the momentum equation is when the investigator can establish the post-collision speeds and directions of the vehicles through analysis of skid marks. Given the post-collision conditions and limited knowledge about pre-collision conditions, the equation may generate paths and speeds of the vehicles prior to the accident.

This is a vector process and a knowledge of vector math is necessary. An example is illustrated by Figure 4. The figure shows that the post-collision speeds and weights of two vehicles were known, yielding a vector sum of their momentum. The vector sum after the collision had to be the same as the vector sum prior to the collision. If the path and speed of one vehicle is known, the same data may be determined for the second vehicle. If the paths of the two vehicles are known prior to collision, the speeds may be determined by vector math.

An excellent example of using the skid formula and conservation of momentum formula to analyze an accident may be found in example 4 at the end of this chapter.

### Other Techniques

There are many additional types of analyses that are applied to accident reconstruction. For example, knowledge of the various types of skid marks left by the vehicle can determine whether it was sliding straight ahead, spinning, or yawing. If the skid marks are curved, it may be possible to calculate the critical speed, or the fastest the vehicle could have traveled on a given radius without losing control of the vehicle. This is very helpful in estimating the maximum speed the vehicle could have been traveling at some point in the collision sequence. This is not a precise technique but provides answers close to the exact speed of the vehicle.

A knowledge of the laws of physics will allow an investigator to determine the speed at which a truck had been traveling when it tipped over while rounding a corner. The investigator needs to know the radius of travel, the weight of the vehicle and the center of gravity of the load. A similar type of analysis can be used to calculate the shift in the center of gravity of a vehicle as it begins to brake or to corner.

Tires may be analyzed to determine the type of braking actions or whether the tire failed during braking. Vehicle head lamps can be examined to determine whether they were on or off at the time of collision. Bits of glass melted into the filament indicate that the light was on when the accident occurred. If the filament has sagged greatly and burst, it was probably hot when a sudden impact exerted more force than it could withstand. Other techniques involving the presence of oxidation or corrosion on the lamp filament may also be interpreted to determine whether it was on when the collision occurred.

Many other techniques could be mentioned to supplement those already discussed. This is beyond the scope of this chapter, which was intended for introductory purposes only.

## Summary

This chapter has introduced some of the concepts used in accident reconstruction. The purpose was to inform the reader of how accident reconstruction might help defend tort liability cases involving traffic accidents. This has been a very limited discussion and was not intended for use in accident reconstruction.

The reader must keep in mind that there are many limitations on when certain formulas may be used and that certain data must be made available for the proper application of formulas. Should the reader desire to learn more, it is recommended that the texts used as references in this chapter be consulted, or that the reader attend a continuing education course on this topic.

## Example Reconstruction Problems

Several typical traffic accident reconstruction problems are illustrated on the following pages. They were taken from texts and journals commonly used by accident reconstruction experts. The purpose of these examples is to illustrate that many types of calculations are simple in nature and easy to perform, once the reconstructionist understands the theory and principles. The examples do not include development of theory, and occasionally refer to tables and figures not reproduced in this workbook.

1. Time-Distance-Speed Relationship. This was excerpted from *Fundamentals of Traffic Accident Reconstruction*, by John Daily, Institute of Police Technology and Management, University of North Florida, Jacksonville, Florida, 1988.
2. Principles of Conservation of Momentum and Energy to Crush. This example was taken from *Accident Reconstruction Journal*, Volume 2, Number 6, November/December 1990, Waldorf, Maryland.
3. Vaulting of Vehicle. This example was excerpted from Chapter 9, *Traffic Accident Reconstruction*, Document No. PN806, Traffic Institute, Northwestern University, Evanston, Illinois, 1981.
4. Conservation of Momentum (Angle Collision). The final example came from Chapter 41, *Motor Vehicle Accident Reconstruction and Cause Analyses*, 2nd Edition, by Rudolf Limpert, Mitchie Company, Charlottesville, Virginia, 1984.

It is important for the reader to remember that even though the examples seem simple, the hardest part of any reconstruction is to recognize which reconstruction techniques are applicable to which circumstances, the limitations of the various techniques, and which data items must be available to use the various methodologies.

## GLOSSARY

Abate: to decrease, reduce, remove, or destroy; to abate a nuisance is to remove or destroy the thing that causes it.

Abrogate: to repeal, annul, or abolish. A law, for example, is abrogated by legislative action, constitutional authority, or usage.

Accord and satisfaction: an agreement between parties to accept something less than the amount actually due, and the delivery of that new amount.

Accused: a person charged with a crime or misdemeanor, the defendant in a criminal case.

Act: an enactment, as of a legislative body; a law or statute.

Action: a judicial proceeding to enforce or protect a right.

Actionable: giving legal ground for an action, as trespass, slander, or breach of contract.

Actual cause: the reason the accident or damage occurred.

Actual notice: the receiving of a complaint or acknowledgement of said condition

Adjournment: the act of putting off, postponing, or suspending business or session, either temporarily or indefinitely.

Adjudication: the pronouncement of a judgment or decree by the court.

Admissible: of such nature that the court or judge must allow it to be introduced, as certain evidence or testimony.

Advocate: one that pleads the cause of another.

Affiant: a person who makes and swears to an affidavit.

Affidavit: a voluntary statement or declaration of facts, written or printed and sworn to by the person making it before an officer authorized to administer oaths.

Affirm: to confirm, ratify, or approve. An appellate court (one in which appeals are taken) may affirm the judgment or decree of a lower court.

Answer: (n) a pleading by a defendant in a lawsuit in response to the summons or complaint.

Appellant: a person who appeals a decision, against him or her, from a lower court to a higher court.

Appellee: the party in a litigation against whom the appeal is taken; also called respondent.

Arbitrary: selected at random and without reason.

Averment: a positive statement of facts in a pleading, without argument or inference.

Brief: a written statement prepared by the counsel arguing a case in appellate court; also used on occasion in trial court.

Burden of proof: the obligation to prove affirmatively a disputed fact or facts related to an issue raised in a case being tried before the court.

Capricious: apt to change suddenly or unpredictably.

Cause of action: the grounds upon which an action is based.

Certiorari: a writ from a superior to an inferior court, directing that a certified record of its proceeding on a particular case be sent up for review.

Change of venue: the change of the place of a trial, for good cause.

Circumstantial evidence: evidence consisting of facts and circumstances that furnish a reasonable ground for inferring the existence of some other connected fact or facts.

Civil procedure: prescribes the rules by which parties to civil lawsuits use the courts to settle their disputes.

Class action: an action brought by one or more plaintiffs on behalf of other persons who are similarly situated or have suffered a similar wrong.

Comparative negligence: a legal doctrine applicable in negligence suits, according to which the negligence of the plaintiff as well as that of the defendant is taken into account. Damages are based upon the outcome of a comparison of the two and are thus proportioned.

Complainant: a person who files a bill of complaint; the party who starts a legal action; also called the plaintiff.

Concurrent jurisdiction: a situation in which each of a number of different judicial bodies has the authority to deal with the same subject matter at the discretion of the person starting the legal action.

Conflict of laws: the disagreement between the laws of different states as it affects the rights or persons acting under the laws of more than one jurisdiction.

Constructive: assumed or inferred by legal interpretation.

Constructive notice: does not require specific notice of the defect. If a defect existed for an unreasonable period of time, the agency should have discovered the defect, and therefore has constructive notice of its existence.

Continuance: the adjournment of the proceedings in a case from one day or term to another.

Contributory negligence: negligence doctrine in which persons only minutely responsible for their own injuries cannot legally recover any damages.

Counterclaim: a claim alleged by a defendant, which seeks to reduce the plaintiff's claim.

Court action: not founded on criminal law or breach of contract. Tort action falls under this, and can be a combination of tort action and criminal action in certain cases. It is some character of abuse where one party injures another.

Criminal law: founded on statute and violation.

Criminal procedure: prescribes the rules of law for the apprehension, prosecution, and fixing of punishment of persons who have committed crimes.

Cross-claim: a claim brought by a defendant in an action against the plaintiff or codefendant or both.

Declaratory judgment: a judgment that declares the status, rights, or duties of the parties involved, or that does not order any action to be taken.

De facto: a Latin expression meaning "in fact", accepted by the fact that it exists, rather than that it is according to law.

De jure: a Latin expression meaning "by right" or "by law" as opposed to de facto.

Demeanor: the act of using degrading behavior or an outward manner towards others.

Deponent: a person who, under oath, gives testimony that is set down in writing.

Deposition: testimony of a witness taken outside a court and set down in writing for use as evidence in court.

Discretion: the capacity to act intelligently and prudently.

Discovery: the disclosure of facts, documents, and the like by one party to a suit at the request of the other party to a suit, for use as evidence in a case being prepared for trial.

Discretionary duty: one involving the power to make choices among valid alternatives and to exercise independent judgment in choosing a course of action.

Dismissal without prejudice: the dismissal of an action or proceeding in a way that does not prevent the plaintiff from bringing another suit based on the same cause of action.

Enjoin: to direct, command, or forbid some act by court order (called an injunction).

Estoppel: a condition in which a person is prevented by law wither from contradicting what he has previously stated or from stating or claiming what he has previously denied.

Ex parte order: an order granted by the court at the request of one party to a proceeding without prior notification to the other party involved.

Extraneous: not forming an essential or vital part; having no relevance.

Extrahazardous crossing: a railroad grade crossing where unusual circumstances exist which make it unusually dangerous that the prudent persons cannot safely use the crossing unless extraordinary measures or precautions are taken.

Governmental function: functions which government is legally required to perform (vs. proprietary functions).

Hearsay: secondhand evidence; evidence derived from something a witness has heard others say. Can be admissible under certain circumstances.

Hostile witness: a witness who, under direct examination, displays such prejudice or hostility toward the party that called that such a party is permitted to cross-examine him or her.

Immunities: the freedom from all tort liability as a favored defendant.

Independent contractor: a person who contracts to do certain work according to his or her own methods without control by the employer except as to the result or product of the work.

Inter alia: a Latin phrase meaning "among other things".

Interrogatories: a series of questions in writing used in the judicial examination of a party of witness.

Joinder: the joining of two or more legal proceedings; the uniting of two or more persons as plaintiffs or defendants in one suit.

Joint and several: binding two or more persons both collectively and individually. Thus, a successful plaintiff under this doctrine could recover damages from any one defendant or from all of them.

Jurisdiction: the power to hear a case; courts that have the power to hear a case have jurisdiction over the case.

Last clear chance: a doctrine in the law of negligence according to which a person who has the last obvious opportunity to avoid injury to another person, or himself or herself, is liable if he or she does not do so.

Leading question: a question intended to suggest or elicit the reply desired by the questioner.

Litigation: the pursuit of a legal contest by judicial law.

Malfeasance: the commission of an unlawful act or an act one has not right to commit; used most often to describe official misconduct.

Mandamus: a writ issued by courts directed to public officials or inferior courts commanding them to do or not to do something specified in the order that is within the scope of their office or duties.

Ministerial duty: duties that are more likely to involve tasks that are to be executed with minimum leeway and individual judgment. Ministerial tasks are said not to require any evaluation or weighing of alternatives before performance of the assigned duty.

Misfeasance: the doing of a lawful act in an unlawful or improper way.

Mitigate: to make less severe; lessen.

Motion: an application to a court or judge to obtain an order or rule directing some act to be done.

Negligence: the failure to exercise the standard of care that would be expected of a normally reasonable and prudent person in a particular set of circumstances.

Nonfeasance: the failure to perform some act that one ought or is required to perform.

Nonsuit: termination of a lawsuit without any judgment on the issues.

Nuisance: any thing or practice which by its existence or use causes annoyance, harm, inconvenience, or damage. A nuisance is often a valid basis for a civil suit.

Plaintiff: the person who begins an action at law; the complaining party in an action.

Plea: a pleading; also, more specifically, a defendant's first pleading.

Pleading: the system of preparing formal written statements of a party to a legal action; a legal document, prepared by a lawyer and filed with the court, which sets forth the positions and contentions of a party. The purpose of pleadings in civil actions is to define the issues of a lawsuit.

Precedent: an adjudged case or judicial decision that furnishes a rule or model for deciding a subsequent case that presents the same or similar legal problems.

Preponderance of evidence: in a case of contested facts, superiority in weight (determined by value and not amount) of the evidence presented by one side over the other (all that is required to prevail in a civil suit).

Presumption of fact: an inference that affirms or denies the existence of some unknown fact, based on the existence of some fact that is already known or that has already been proven.

Prima facie case: is a case strong enough that it can be overthrown only by contradicting or rebutting evidence.

Proprietary function: functions which can be provided by private persons.

Proximate cause: the legal cause of the injuries or damages that are sustained.

