

have a long way to go. Improved methods in work site safety must be developed through research so that we can develop meaningful safety criteria based on facts. But we cannot wait for research results to make improvements. The problem is with us today, and we must take immediate action to reduce the present unnecessary accident toll. We can accomplish this through more stringent controls, more awareness of the problem on

the part of work site management, and a sincere desire to enhance the safety of the motoring public. FHWA stands ready to assist and support the highway community in developing safer work sites in any way we can.

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*Abridgment*

## Liability for Improper Traffic Signaling, Signing, and Pavement Markings

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The liability for improper traffic signaling, signing, and pavement markings is an area of importance because of the increasing number of negligence claims brought against highway departments. In the past, the states generally had sovereign immunity and could not be sued. In recent years, however, this has changed as more and more states, by court decision or statute, have abolished or eroded immunity to a large extent. The states have a variety of approaches to the question of tort liability. Certain rules, however, seem to be applicable in most jurisdictions.

Although there has been a significant increase in tort litigation against highway departments, court decisions and recent tort claims acts recognize that states and state agencies should not be held liable for negligent performance of governmental functions that are discretionary in nature. The general view is that the state is not liable for negligence in the performance of functions that involve a high degree of discretion but is liable for negligence in the performance of ministerial or operational level tasks. The exemption from liability for duties discretionary in nature is rooted in the common law. It emerged from the law on personal liability of public officials, who also were not liable for negligence in the exercise of discretionary duties but were liable for the exercise of purely ministerial functions.

Any activity, of course, involves the exercise of discretion, but as used here, a discretionary duty is one involving the power to make choices among valid alternatives and to exercise independent judgment in choosing a course of action. Conversely, ministerial duties are more likely to involve clearly defined 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.

A case that illustrates executive activity that is discretionary in nature is *Weiss v. Fote* [7 N.Y. 2d 579, 167 N.E. 2d 63, 200 N.Y.S. 2d 409 (1960)]. In this case the issue was the adequacy of the clearance interval in a traffic light system that had been approved by the city board of safety after ample study and traffic checks. The court held that New York's general waiver of im-

munity did not extend to areas of lawfully authorized planning and that it would be improper to submit to a jury the reasonableness of the plan approved by the expert body.

Weiss and other cases hold that the decision to provide or withhold a certain service is discretionary in nature; thus, negligent design of a traffic light or the failure to erect a traffic light may be discretionary in nature and protected from liability. Immunity usually attaches to governmental decisions about signs, signals, or markings if the government shows that the plan, design, or program has been adopted after reasonable consideration and deliberation. Of course, the decisions should be made by a public body or official vested with authority to exercise discretion in formulating such decisions. The cases state that evidence should show that the decision was (a) reasonable, (b) duly prepared and approved, and (c) not arbitrary or capricious. Moreover, duty may require review of these decisions later to determine whether they are safe once implemented and in actual use. As one court has said, the public official must be cautious; the discretionary field of activity should not be used to justify the omission of obvious safeguards for the protection of the public.

Some decisions are clearly more discretionary than others, and court decisions differ on what falls within the discretionary field of activity. The trend appears to be that only decisions made at a policy level or decisions that involve a consideration of policy factors are discretionary. The result has been to narrow the duties that are discretionary; more decisions that once would have been immune from liability no longer enjoy that protection.

The narrowing of discretion is demonstrated in several cases construing tort claims legislation. These acts usually contain a provision that immunizes the public agency for negligence in the performance or failure to perform discretionary functions (the discretionary function exemption). This exemption has its roots in the exclusion from liability for discretionary activity previously discussed.

The courts have struggled to construe the tort claims acts' exemption from liability for a discretionary func-

tion and a landmark U.S. Supreme Court case has been used by lower courts for the development of the operational-planning test in an effort to give further meaning to the exemption. The majority of the courts hold that only decisions made at the planning level, rather than at the operational level, fall within the discretionary function exemption.

It would appear that the decision on whether to provide signs, signals, or markings is the exercise of immune discretion at the planning level; however, recent decisions hold that negligence thereafter in provision or in maintenance of them is less likely to be protected from liability.

In a New Jersey case [*Catto v. Schnepf*, 121 N.J. Super. 506, 298 A. 2d 74 (1972)], the plaintiff alleged that the state had negligently and improperly designed a curve and had failed to warn that a change in speed was necessary. The court ruled that the design of the road was discretionary in nature; furthermore, no independent liability attached for the failure to post a speed limit or other warning sign because these activities were within the discretionary judgment of the governing authority and, therefore, immune.

The New Jersey decision may be compared to the holding in an Alaska case [*State v. l'Anson*, 529 P. 2d 188 (Alaska 1974)], where the court ruled that, within the meaning of the discretionary function exemption of the Alaska Tort Claims Act, the state was liable for the failure to place traffic signs or paint lines on the highway at the entrance to campgrounds. The court held that the decisions that involved traffic signs or pavement markings were not broad policy decisions that came within the planning category. Two other decisions from Hawaii held that the failure to paint highway lines or provide highway warning signs are not discretionary acts and are not immune from liability.

Because of the discretionary nature of the decision, courts have held that, in the absence of statute, there is no general duty imposed on the department to install or provide highway lights, signs, or markings. The reason is that these decisions are legislative or quasi-judicial in nature and are customarily made by the legislative or executive branches of government. The courts are reluctant to permit second-guessing of the authorities, who have the technical expertise to make these decisions.

Thus, some courts have held that the government, state or local, is not required to (a) place a traffic light at an intersection [*Raven v. Coates*, 125 So. 2d 770 (Fla. App. 1961)], (b) post signs and barricades at a curve [*Andrus v. Lafayette v. Louisiana Dept. of Highways*, 303 So. 2d 824 (La. App. 1975)], or (c) post a stop sign at a street intersection [*Western Pennsylvania National Bank v. Ross*, 345 F. 2d 525 (6th Cir. 1965)].

There is some authority to the contrary; for example, in Michigan the court held that a Michigan statute that requires that roads be kept in reasonable repair requires the government to install traffic-control signals [*Dohrman v. Lawrence County*, 143 N.W. 2d 865 (S.D. 1966)].

After the department has provided the signs, signals, or markings, it has assumed the duty to the public, who have a right to reasonably rely on them, and is obligated to maintain them in good serviceable condition. In addition, if the department is required by statute to maintain highways in a state of reasonable repair, its duty may include maintenance of traffic signals and stop signs [*Williams v. State Highway Dept.*, 44 Mich. App. 51, 205 N.W. 2d 200 (1972)].

The department ordinarily must act on its own and provide, for example, highway warnings, traffic devices, or markings when it has notice of a hazardous or dangerous condition. The general view is that, in order to hold public authorities liable for injuries for failure

to exercise ordinary care to keep roads and streets reasonably safe, it must appear that the authority knew, or had reasonable cause to know, of the defective condition a sufficient length of time prior to the accident to enable it to repair the road or alleviate the danger. The state need not have actual notice of the dangerous condition; notice may be imputed to the state if the danger is of such a nature that the department should have known of it or would have discovered it by being reasonably diligent.

The department's own records may indicate that a highway location is particularly dangerous and should be signed. In *Smith v. State* [12 Misc. 2d 156, 177 N.Y.S. 2d 102 (1958)] the traffic engineer, in a letter to the department of public works, had recommended W-160 oversize assembly signs at a particularly dangerous curve. He described the curvature and advised:

This location has been the scene of many accidents of which speed was usually the contributing factor. Several years ago the curve was rebanked and a coarse mix added to the surface to decrease skidding and aid drivers to negotiate the curve. This improvement seemed to help but motorists still get into trouble when negotiating this curve.

The state was held liable for its failure to warn the decedent of the dangerous highway condition.

Most of the cases present a question of fact as to whether the highway location is so dangerous that the highway department should have acted, such as by providing traffic signs or warnings, signals, or pavement markings.

For example, in a Kentucky case [*Commonwealth v. Automobile Club Insurance Co.*, 467 S.W. 2d 326, 329 (Ky. 1971)], the court held that a curve, shown to have a 52° turn for each 30.5 m (100 ft), with a total curvature of 117° from beginning to end, was a sharp or steep curve and sufficiently dangerous that the state should provide speed advisory signs, guardrails, or barriers near the curve.

The courts have held that the department is not compelled to place guardrails or curve signs at every curve along the highway, but that it must provide them at dangerous or unusual places on the highway to enable motorists, exercising ordinary care and prudence, to avoid injury to themselves and others. In addition, the state may have a duty to provide warnings of inherent dangers, such as obstructions or excavations in a highway or where a bridge has been destroyed or a highway terminated abruptly.

Some statutes require signs, signals, or markings only at dangerous locations. The California act defines a dangerous condition as one that creates a substantial (as distinguished from a minor, trivial, or insignificant) risk of injury when the road is used with due care and in a manner in which it is reasonably foreseeable that it will be used. The California statute was applied in *Callahan v. San Francisco* (15 Cal. App. 3d 374, 93 Cal. Rptr. 122). There the plaintiff was a passenger in an automobile on a street that dead-ended at an intersecting street. The weather was foggy and the T-intersection had no warning devices to advise that the road terminated abruptly with a cliff dropping into a lake. (The driver of the vehicle had been drag racing just prior to the intersection.)

The evidence was that there had been no prior accident at the intersection similar to the one that involved the plaintiff and that only 29 accidents (1 accident/685 000 vehicles) at the intersection had involved this direction of travel in 4.5 years. Thus, the court held as a matter of law that the city was not negligent and that the intersection was safe, except when a vehicle is driven at excessive or hazardous speed. Where a dangerous condition does not exist, the city is not required

to provide warnings by signals, signs, or other markings.

With respect to traffic lights, authorities are split as to whether the state or other public agency is liable for failure to erect them, but most jurisdictions hold that the decision to provide or not to provide traffic lights is either the exercise of immune discretion or the performance of a purely governmental function.

An analysis of the traffic-light cases appears to support the following main conclusions:

1. The plaintiff is least likely to recover where a traffic sign or signal was removed from an intersection under proper authorization and where it was claimed that the traffic-control system at an intersection had been negligently planned or designed.

2. The plaintiff is most likely to recover for negligence where the highway authority failed within a reasonable time to replace a traffic sign that had been removed by unauthorized persons, to re-erect or repair a sign that had fallen down or had been knocked down or bent over, or to replace a burned-out bulb in an electric traffic signal. Ordinarily, the failure to keep traffic lights and signs in good working condition may result in liability of the department.

3. The cases are divided and hold both ways where, for example, there has been a failure to install any traffic signals or lights at an intersection alleged to be dangerous.

Considerable interest has been expressed concerning the liability of states arising out of pavement markings. State highway departments have been held liable for accidents caused by improper, inadequate, or misleading

pavement markings, as noted earlier.

In a New York case [*Dowley v. State*, 61 N.Y.S. 2d 59 (Ct. Cl. 1946)], the claimant sued for negligence of the state in construction, maintenance, and safeguard of a state highway. Because of the surface appearance, the road appeared to proceed straight ahead, when, in fact, it curved to the east. No caution, slow, stop, curve, or other sign was on the highway. Moreover, no white line in the center of the highway indicated the highway curve. The court held that the evidence sustained a finding that the curve was dangerous and that the state was negligent in failing to provide proper warnings, barriers, and markings. Special pavement markings are not required at an intersection where, for example, the evidence does not establish the existence of a hazardous or dangerous condition. However, the highway department may be held liable for installation of highway signs that are themselves misleading and dangerous, or for failure to mark the pavement adequately to warn that a four-lane road becomes two lanes, for example.

Finally, states may have certain rules and regulations governing the installation or provision of signs, signals, or pavement markings. These regulations, and more particularly, the Manual on Uniform Traffic Control Devices, generally are admissible into evidence. The courts have held that the regulations are either evidence of the standard of care that should have been used or evidence that the department has failed to meet its own safety standards [*State v. Watson*, 7 Ariz. App. 81, 436 P. 2d 175 (1968)].

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## Status of Traffic Safety in Highway Construction Zones

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Evidence is increasing that existing traffic-control practices do not always provide an adequate level of safety in construction zones. Synthesis of a number of accident studies reveals that the total accident experience in construction zones increases from 2 to 119 percent during the period of construction. The literature synthesis also indicates that the increases in accident experience are highly related to construction activity. A study in one state shows that accident experience decreases dramatically when construction-zone traffic-control practices are improved. The paper identifies methods by which more effective planning, design, and management of construction zones can improve traffic safety.

Highway construction zones provide traffic engineers with perhaps the greatest challenge in traffic control they face on any segment of the American highway system. Traffic control in a construction zone must permit the safe and efficient movement of traffic through the zone

and at the same time provide a safe work area where construction activity can be conducted efficiently. The traffic-control plan must be tailored to fit not only the changing demands of traffic but also the changing demands of construction activity. Evidence is increasing that existing traffic-control practices do not always provide an adequate level of safety in construction zones.

The traffic-control devices used for highway maintenance and construction operations are specified by Part VI of the Manual on Uniform Traffic Control Devices (MUTCD) (1). These include regulatory and warning signs, hazard beacons and other lighting units, barricades, traffic cones, and flagpersons. MUTCD prescribes minimum standards for the application of these devices but does not relate the selection of a complete set of traffic controls to the geometric and traffic re-