National Cooperative Highway Research Program

RESEARCH RESULTS DIGEST

DIGEST 141 - JUNE 1983

Areas of Interest: 11 administration, 21 facilities design, 25 structures design and performance, 40 maintenance, 51 transportation safety, 54 operations and traffic control, 70 transportation law (1 highway transportation, 2 public transit, 3 rail transportation)

Liability of State Highway Departments for Defects in Design, Construction, and Maintenance of Bridges

A report prepared under ongoing NCHRP Project 20-6, "Right-of-Way and Legal Problems Arising Out of Highway Programs," for which the Transportation Research Board is the agency conducting the Research. The report was prepared by William P. Tedesco. Larry W. Thomas, TRB Counsel for Legal Research, is principal investigator, serving under the Special Technical Activities Division of the Board.

THE PROBLEM AND ITS SOLUTION

State highway departments and transportation agencies have a continuing need to keep abreast of operating practices and legal elements of special problems involving tort liability, as well as highway law in general. This report and seven others published as

- Research Results Digest 79, "Personal Liability of State Highway Department Officers and Employees"
- Research Results Digest 80, "Liability of State Highway Departments for Design, Construction, and Maintenance Defects"
- Research Results Digest 83, "Liability of State and Local Governments for Snow and Ice Control"
- Research Results Digest 95, "Legal Implications of Regulations Aimed at Reducing Wet-Weather Skidding Accidents on Highways"
- Research Results Digest 110, "Liability of State and Local Governments for Negligence Arising Out of the Installation and Maintenance of Warning Signs, Traffic Lights, and Pavement Markings"

- Research Results Digest 129, "Legal Implications of Highway Department's Failure to Comply with Design, Safety, or Maintenance Guidelines"
- Research Results Digest 135, "Liability of the State for Injury - Producing Defects in Highway Surface"

deal with legal questions surrounding liability for negligent design, construction, or maintenance of highways.

These papers are included in a text entitled, "Selected Studies in Highway Law." Volumes 1 and 2, dealing primarily with the law of eminent domain, were published by the Transportation Research Board in 1976; and Volume 3, dealing with contracts, torts, environmental and other areas of highway law, was published in 1978. An addendum to "Selected Studies in Highway Law," consisting of five new papers and updates of eight existing papers, was issued during 1979; a second addendum, consisting of two new papers and 15 supplements, was distributed early in 1981; and a third addendum consisting of eight new papers, seven supplements, and an expandable binder for Volume 4 was distributed early in 1983. The text now totals more than 2,200 pages comprising 56 papers, some 30 of which have been supplemented during the past 3 years. Copies have been distributed to NCHRP sponsors, other offices of state and federal governments, and selected university and state law libraries. The officials receiving copies in each state are: the Attorney General, the Highway Department Chief Counsel, and the Right-of-Way Director. Beyond this initial distribution, the text is available through the TRB publications office at a cost of $90.00 per set.

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LIABILITY OF STATE HIGHWAY DEPARTMENTS FOR DEFECTS IN DESIGN, CONSTRUCTION, AND MAINTENANCE OF BRIDGES

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INTRODUCTION

This paper discusses tort liability of highway agencies for injuries caused by negligence in the design, construction, and maintenance of bridges.[1] It should be noted at the outset, however, that the general principles of liability applicable to highways are applicable to bridges as well because bridges are components of highways.[2]

Bridge safety is a subject deserving special attention. Federal, State, and local officials, and representatives of organizations such as the American Association of State Highway and Transportation Officials (AASHTO) and the National Association of Counties (NACO) agree that the United States has a serious bridge problem.[3]

Thirty-seven percent of the more than 500,000 bridges in this country were built before 1941.[4] Many have exceeded or are approaching the end of their useful life, which is estimated to be about 50 years.[5] According to the Federal Highway Administration (FHWA), which compiles and analyzes data on bridges supplied by the States, 248,527 of the nation's highway bridges—or 45 percent—are deficient in some respect.[6]

Under the National Bridge Inspection Standards promulgated by FHWA, States are required to inventory and inspect all bridges over 20 feet in length on public roads at least every 2 years.[7] The inspections are to be conducted according to AASHTO's "Manual for Maintenance Inspection of Bridges 1978" and the data are to be recorded and retained by the State for collection by FHWA.[8] Upon receipt and evaluation of the bridge data, FHWA assigns each bridge a "sufficiency rating" according to a mathematical formula designed by AASHTO and FHWA.[9] The sufficiency rating is used as a basis for establishing eligibility and priority for replacement and rehabilitation of bridges under the Highway Bridge Replacement and Rehabilitation Program.[10]

Approximately one out of four bridges on the Federal-aid highway system have been identified as deficient by FHWA, the majority of these being classified as "functionally obsolete." [11] The problem is greater for bridges off the Federal-aid system, where 60 percent of all bridges are either functionally obsolete or "structurally deficient." [12]

FHWA broadly defines "deficient" to include a variety of bridge conditions. A bridge is considered structurally deficient if either its deck, superstructure, or substructure has weakened or deteriorated to the point that the bridge is inadequate to support all types of traffic. Such bridges must be closed, restricted to lighter vehicles, or immediately rehabilitated to prevent further deterioration.[13] Poor design and construction, general wear, and lack of proper maintenance are the major causes of structural deficiencies.[14]

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[1] State liability is the primary focus of this paper. Cases involving county and municipal governments are cited by way of additional illustration. Only brief mention is made herein of liability in tort for negligent construction of bridges. Although there have been cases on liability for negligent highway construction (see pp. 1790–1791, 1815–1917, 1834-S10, *supra*), few significant cases involving bridges were found.

[2] See Thomas, "Liability of State Highway Departments for Design, Construction, and Maintenance Defects," p. 1771 *supra*; Vance, "Personal Liability of State Highway Department Officials and Employees," id., p. 1835.

[3] *Better Targeting of Federal Funds Needed to Eliminate Unsafe Bridges*, United States General Accounting Office, CED-81-126, Aug. 11, 1981, p. 18 (available from U.S. General Accounting Office, P. O. Box 6015, Gaithersburg, MD 20760) [hereinafter cited as GAO Report].

[4] Highway Bridge Replacement and Rehabilitation Program Third Annual Report to Congress, Document No. 97-33, July 1982, p. 8 (U.S. Government Printing Office) [hereinafter cited as HBRRP Report].

[5] GAO Report at 12.

[6] HBRRP Report at 6.

[7] 23 C.F.R. §§ 650.301, 650.305. The National Bridge Inspection Program was established by the Federal-Aid Highway Act of 1968 (Pub. L. 90-495, § 26, 82 Stat. 815) and expanded by the Surface Transportation Assistance Act of 1978 (Pub. L. 95-599, § 124, 92 Stat. 2689, *codified* at 23 U.S.C. § 144 [Supp. III, 1979]).

[8] 23 C.F.R. §§ 650.309, 650.311. Although the States are in substantial compliance with the standards, the U.S. General Accounting Office in 1981 reported a number of compliance problems, including incomplete and inaccurate data gathering, lack of adequate funds, and inconsistency of ratings. GAO Report at 63–86.

[9] 23 C.F.R. § 650.409. The formula has three general categories that are weighted as follows: structural adequacy and safety, 55 percent; serviceability and functional obsolescence, 30 percent; essentiality for public use, 15 percent. To date, these inspection requirements and sufficiency ratings have yet to play a role in litigation involving State highway agencies. For an analysis of the significance of various types of standards or guidelines in highway litigation, see Thomas, "Legal Implications of Highway Department's Failure to Comply With Design, Safety, or Maintenance Guidelines," p. 1966–N1, *supra*.

[10] 23 C.F.R. § 650.409. States may select bridge projects for Federal funding from a list of eligible bridges provided by FHWA. Federal funding for bridge replacement began with the Special Bridge Replacement Program established by Congress in the Federal-Aid Highway Act of 1970 (Pub. L. 91-605, § 204, 84 Stat. 1713) and expanded by the Surface Transportation Assistance Act of 1978, note 7, *supra*, to become the Highway Bridge Replacement and Rehabilitation Program. The Federal share payable under 23 U.S.C. § 144 is 80 percent.

[11] HBRRP Report at 4.

[12] *Id.*

[13] GAO Report at 12, 45.

[14] *Id.* at 12.

Although complete data on bridge failures are not available, FHWA estimated that about 150 bridges collapse each year, killing about 12 people.[15] One of the most catastrophic bridge failures was the 1967 collapse of the Silver Bridge spanning the Ohio River between Ohio and West Virginia, which caused 46 deaths.[16]

Bridges that are too weak to support any traffic must be closed. Most structurally deficient bridges, however, can safely be used if proper load limits are posted and observed.[17] A 1981 study by the U.S. General Accounting Office revealed, however, that structurally deficient bridges were not always properly posted or closed. In most of the States surveyed, State officials were found to lack authority under State law to require the posting or closing of bridges that were under the jurisdiction of local government authorities.[18] The study also reported that bridge postings and closings were poorly monitored and enforced,[19] and that closings were often intentionally ignored by the public. For example, according to a newspaper report, angry residents near one city

> . . . have twice removed steel barricades erected to block access to a closed bridge and have continued to use it. The second time they also removed a load of large rocks which had been dumped on the bridge in an effort to close it. State and local officials said anything short of dismantling a bridge will not ensure that a closed bridge is not used. One [county] tore out seven bridges because local people kept crossing them after the [county] closed them.[20]

"Functionally obsolete" bridges, the other major category of deficient bridges, are those which are structurally sound but are no longer adequate to serve today's traffic. Most are too narrow, and they may also be poorly aligned with the roadway, or have insufficient underclearances or load-carrying capacity.[21] Studies by FHWA and others have shown that accidents and fatalities are more numerous on narrow bridges.[22]

The problem of bridge safety is unlikely to improve significantly in the near future because of the cost involved. The most recent estimate of the cost of replacing or rehabilitating the eligible deficient bridges is set at $47.6 billion.[23]

> It is expected that the number of deficient bridges on the Federal-aid system will begin to accelerate in the near future. Primary system bridges have received much recent attention from the States. These bridges are beginning to deteriorate at a rapid pace due to heavier and more truck traffic, advancing age, climatological attacks, deicing chemicals, recent severe winters and deferred maintenance by fund strapped States. Rehabilitation must be performed more often. The rapidly accruing needs of bridges on the Primary and Interstate system will steadily demand a larger and larger portion of available funds to prevent further decline of their load carrying capacity and safety.[24]

In the meantime, injuries caused by deficient bridges may give rise to tort suits against highway agencies. Not long ago States were immune from suit against them for injuries caused by negligently designed and maintained bridges on State highways. Under the doctrine of sovereign immunity, the State and its agencies or instrumentalities could not be sued as a matter of law unless the State consented to suit. This defense has been limited considerably in recent years, however, through legislative modification and judicial decision.

Today, although the scope of liability varies widely among jurisdictions, highway departments in most States are subject to suit for injuries caused by defective bridges. In view of this trend toward governmental responsibility, and the widespread safety problems of our nation's highway bridges, significant litigation involving injuries on State-owned bridges may be expected.

TORT CLAIMS AGAINST HIGHWAY DEPARTMENTS

The liability of State highway agencies for negligence in the design, maintenance, and construction of highways has been discussed in greater detail in another paper.[25]

The doctrine of sovereign immunity embraced by the Supreme Court in a series of early decisions [26] holds that tort claims may not be brought against the Federal or State governments or their agencies without their consent. Increasingly, however, such consent has been given.

For a variety of reasons, many State courts and legislatures have abrogated absolute sovereign immunity in favor of general or limited tort liability. The clear trend is toward the enactment of tort claims acts [27] under which individuals can recover for injuries caused by the negligence of the State, its agencies, and employees.

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[15] *Id.*

[16] See notes 97–101, 162–164 *infra* and accompanying text. This disaster focused national attention on the bridge problem and provided impetus to bridge inspection and replacement/rehabilitation legislation. See notes 7, 10.

[17] GAO Report at 87.

[18] *Id.* at 87–93.

[19] *Id.* at 93–96.

[20] *Id.* at 95.

[21] *Id.* at 13.

[22] *Id.*

[23] HBRRP Report at 6.

[24] Id. at 7.

[25] See Thomas, "Liability of State Highway Departments for Design, Construction, and Maintenance Defects," p. 1771, *supra.*

[26] See, e.g., Cohens v. Virginia, 6 Wheat. (19 U.S.) 264 (1821); Beers v. Arkansas, 20 How. (61 U.S.) 527 (1857); Hans v. Louisiana, 134 U.S. 1 (1890); Smith v. Reeves, 178 U.S. 436 (1900).

[27] E.g., Alaska, California, Colorado, Connecticut, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Vermont, Virginia, and Washington. See pp. 1822 and 1834-S13 *supra.*

Alternatively, some State legislatures have established special tribunals to decide tort claims against the State.[28] Other States have abolished immunity by judicial decision.[29]

A 1981 AASHTO survey on the status of sovereign immunity [30] found that only 9 of the 47 States responding had sovereign immunity as to torts, and 3 of the 9 States had claims boards or commissions to decide tort claims against the State. As of 1981, 38 of the 47 States surveyed had a tort claims act or other legislative scheme for litigating claims.

Thus, although the laws vary from State to State, highway agencies in most States may be subject to liability for bridge defects that cause injury to the public.

STATE'S DUTY TO TRAVELLING PUBLIC GENERALLY

Assuming that the State can be sued for its negligence, the State highway agency owes a duty to the travelling public to use ordinary care in the construction and maintenance of bridges, the same duty of care owed with respect to other highway components.[31] There is no duty, however, to make bridges absolutely safe:

> [I]f the State were required to anticipate and protect against all imaginable acts of negligent drivers, it would become an insurer against all such acts. Rather its duty is to maintain its roads in such a condition that they are reasonably safe for persons using them in a proper manner and exercising ordinary care for their own safety.[32]

As a general rule of statutory and common law, States are immune from liability, under the exemption for "discretionary" government functions, for negligence in the approval of a plan or design of a bridge. This rule, and several significant exceptions, are discussed *infra*.

States have been held liable, on the other hand, for breach of their obligation to construct and maintain bridges so that they will be reasonably safe for public use. The duty to correct a dangerous condition generally arises when the State receives actual or constructive notice of the condition so that the State has a reasonable opportunity to remedy it.[33]

Some courts have held, however, that the highway agency is not required to remove all potentially hazardous conditions, provided adequate warning of the danger is posted. For example, the highway agency has no duty to replace an otherwise adequate bridge that is narrower than the approach roadway [34] or is capable of supporting only lighter vehicles.[35] States have been held liable, however, for failing to warn approaching drivers of a narrow bridge [36] or neglecting to post and maintain load limit signs as appropriate.[37] The adequacy of the warning, given the circumstances of a particular case, is a question for the finder of fact, i.e., the court or the jury.[38] It appears that the State will not be held liable for failure to erect signs except where there exists a dangerous condition not reasonably apparent to the reasonably prudent driver.[39]

The courts have held, pursuant to statutory or common law, that the State may owe a duty of care to users of State highway bridges in a wide variety of situations. Some of these are discussed below.

DESIGN DEFECTS

Limited Immunity for Negligent Design Under the Discretionary Function Exemption

Discretionary function immunity has been discussed in more detail in another paper.[40] Today, under tort claims acts and common law, the general rule is that certain actions taken, or not taken, by government are "discretionary" and therefore exempt from liability. Examples of governmental actions held to be discretionary include the approval of highway designs and specifications,[41] and the decision to adhere to a former design during highway reconstruction.[42]

This immunity for discretionary activities rests, not upon the sovereign status of the State, but upon the doctrine of separation of powers and upon perceived limitations on the proper scope of judicial inquiry. Thus, it is thought that decisions involving a choice among valid alternatives and the exercise of independent judgment are the proper province of the State and should not be second-guessed by the courts. Courts have considered the approval of a plan or design of a highway component, such as a bridge, to constitute an immune discretionary activity:

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[28] E.g., Arkansas, Georgia, North Carolina, Kentucky, Tennessee, and West Virginia. See pp. 1822 and 1834-S13.

[29] E.g., Arizona, Louisiana, and Missouri. See pp. 1822 and 1834-S13.

[30] *Survey on the Status of Sovereign Immunity in the States*, Report by the Administrative Subcommittee on Legal Affairs of the American Association of State Highway and Transportation Officials (AASHTO) (1981).

[31] Stewart v. State, 92 Wash. 2d 285, 597 P.2d 101, 109 (1979).

[32] *Id.*

[33] Daugherty v. Oregon State Hwy. Comm'n, 270 Or. 144, 256 P.2d 1005, 1008 (1974).

[34] Barr v. State, 355 So. 2d 52, 57 (La. App.), *cert. denied*, 355 So. 2d 1324 (1978).

[35] Norman v. State, 227 La. 904, 80 So. 2d 858, 861 (1955).

[36] Barr v. State, 355 So. 2d 52, 57 (La. App.), *cert. denied*, 355 So.2d 1324 (1978).

[37] Norman v. State, 227 La. 904, 80 So.2d 858, 861–862 (1955).

[38] See, e.g., Rugg v. State, 284 App. Div. 179, 131 N.Y.S. 2d 2, 4 (1954) ("Narrow Bridge" sign not adequate to warn of sharp curve preceding bridge).

[39] See, e.g., Flournoy v. State, 80 Cal. Rptr. 485, 489 (App. 1969).

[40] Thomas, "Liability of State Highway Departments for Design, Construction, and Maintenance Defects, Vol. 3, Ch. VIII, pp. 1800–1820.

[41] Daniel v. United States, 426 F.2d 281 (5th Cir. 1970).

[42] Richardson v. State, 200 Neb. 225, 263 N.W. 2d 442 (1978).

> This view has been justified on the grounds that decisions relating to the design and planning of highways are presumably made by skilled and competent experts, and often involve matters not susceptible to review by courts and juries, such as funds available for the project, the amount and kind of traffic contemplated, and the evaluation of technical data relating to traffic and safety.[43]

The leading highway case on the discretionary function exemption is *Weiss v. Fote*,[44] which is cited in numerous highway cases and most bridge cases where design defects are at issue. The New York Court of Appeals in *Weiss* would not permit the jury to review a local Board of Safety's judgment as to the proper clearance interval for a traffic light because to hold otherwise

> . . . would be to obstruct normal governmental operations and to place in inexpert hands what the Legislature has seen fit to entrust to experts.[45]

The discretionary function exemption of the Federal Tort Claims Act[46] was held to preclude liability of the United States for a bridge design in *Wright v. United States*.[47] Plaintiffs' decedents were killed when their car went out of control on a washed out approach road to the bridge following a period of record rainfall. The bridge had been designed and constructed by the Bureau of Indian Affairs of the Department of the Interior in cooperation with the State of Utah. Plaintiffs alleged that the United States, by and through its agents, had "negligently designed, placed, located, constructed, inspected and managed" the bridge.[48] The Court held that the United States was not liable because, in addition to other grounds, "the Bureau of Indian Affairs was engaged in a 'discretionary function' when it determined to aid and assist the State of Utah in the construction of the bridge and approach roads. . . ."[49]

EXCEPTION FOR ARBITRARY OR UNREASONABLE DECISIONS

The *Weiss* ruling did not entirely foreclose review of design judgments made by the State, however. The Court emphasized that its decision might have been different had the evidence revealed that the government entity's decision was either arbitrary or unreasonable.[50] Consequently, plaintiffs bear a heavy burden in seeking recovery against the State for injuries caused by design defects.

[43] Annot., *Liability of governmental entity or public officer for personal injury or damages arising out of vehicular accident due to negligent or defective design of a highway*, 45 A.L.R. 3d 875, 881 (1972).

[44] 7 N.Y. 2d 579, 200 N.Y.S. 2d 409, 167 N.E.2d 63 (1960).

[45] 167 N.E.2d at 66.

[46] 28 U.S.C. § 2680(a).

[47] 568 F.2d 153 (10th Cir. 1977), *cert. denied*, 439 U.S. 824 (1978).

[48] 568 F.2d at 154.

[49] *Id.* at 158.

[50] 167 N.E. 2d at 66.

The import of the *Weiss* case was recently clarified by the New York Court of Claims in *Hall v. State*.[51] Plaintiff, who brought a wrongful death action arising out of a collision on a State bridge, sought damages from the State on alternative claims of negligence and strict products liability. The Court defined the plaintiff's burden of proof as follows:

> [T]o hold the State liable for injuries resulting from this design, the Claimant must show that the design was evolved and approved without adequate study, or that the design lacked a reasonable basis. This rule enunciated in *Weiss* requires proof beyond that necessary to establish ordinary negligence. The rationale underlying this stringent test is that the reasonableness and safety of a plan for governmental services, as evolved by a governmental body of experts which duly considered the matter, will not be subordinated to the judgment of a court or a jury when the proof establishes only that alternative methods exist. The proof must establish that the plan could not have been adopted if due consideration had been given it. . . . [T]o place liability on the State for a decision by a planning body, the Court of Appeals in *Weiss* required proof, not only that a reasonable man would have acted otherwise, but that the State used no reason at all.[52]

The Court allowed plaintiff to go forward with proof of the negligence cause of action under the stringent *Weiss* test. The strict liability claim was dismissed, however, because permitting plaintiff to proceed on a strict liability theory would have removed the necessity for plaintiff to prove even simple negligence on the part of the State.[53]

Moreover, the Court held that strict products liability was not applicable in any event to a design for a public bridge because a bridge design was not a product:

> The Department of Transportation is a body of professionals entrusted with planning for the transportation needs of the State. As such, the Department, through its employees, renders to the citizens of the State a professional service in the form of an expert opinion as to the desirability of a particular design. A highway or bridge design is not a "product," but more appropriately viewed as a provision of a professional service. See *Fisher v. Morrison Homes, Inc.*, 109 Cal. App. 3d 131, 167 Cal. Rptr. 133 (1980).[54]

The Court concluded that the proper standard by which to judge the rendition of engineering services by the State was the same as the standard to which engineers in the private sector were held: "a malpractice

[51] 106 Misc. 2d 860, 435 N.Y.S.2d 663 (Ct. Cl. 1981).

[52] 435 N.Y.S. 2d at 665.

[53] Under Restatement of Torts 2d, § 402A, to establish strict liability plaintiff must show that a product was sold in a defective condition unreasonably dangerous to the user, irrespective of the care exercised by the defendant.

[54] 435 N.Y.S. 2d at 666.

standard of reasonable care and competence owed generally by practitioners in the particular profession." [55]

The extent of State compliance with applicable design standards has been held to be a factor in determining the reasonableness of the design.[56] In *Harland v. State*,[57] the Court affirmed a $3 million judgment against the State of California as a result of a fatal automobile accident on a bridge. Although the evidence was conflicting, plaintiffs' expert witness testified that the bridge was dangerous because of a number of design factors, including a superelevated S-curve on the bridge, narrow shoulders and median, a deflecting guardrail, and the lack of a cross-median barrier. According to the witness, the bridge should have been, but was not, built according to freeway standards.[58] The Court held that there was evidence from which the jury could reasonably have found the existence of a dangerous condition.

Standard specifications for highway bridges have been published by the American Association of State Highway and Transportation Officials (AASHTO) and approved by the Federal Highway Administration (FHWA) for application on Federal-aid highway projects.[59] Although FHWA regulations do not establish standards for bridges off the Federal-aid system, the safety-related criteria contained in the standards have been adopted as models for developing State and local highway safety programs as required by Congress.[60]

Exceptions for Decisions Made Without Adequate Prior Study or Deliberation

Immunity for discretionary activities has also been held not to apply to decisions made without prior study or conscious deliberation. It should be cautioned, however, that this exception and the exception for arbitrary or unreasonable decisions discussed in the preceding section are not necessarily discrete categories. For example, an unconsidered decision by a government entity to design a bridge component in a particular fashion could conceivably be subjected to judicial review if the design causes injury, on the basis that the decision was "arbitrary" or "unreasonable."

The *Weiss v. Fote* opinion intimated that government decisions made without adequate prior study would not enjoy discretionary function immunity:

> In the cases before us, the Common Council of Buffalo, acting through its delegated agent, the Board of Safety, made extensive studies of traffic conditions at the intersection [in question]. It was its considered judgment, based on these studies, that four seconds represented a reasonably safe "clearance interval" and there is nothing to suggest that its decision was either arbitrary or unreasonable.[61]

Subsequent decisions by other courts occasionally demonstrate how narrow the scope of discretion may be defined. In *Stewart v. State*,[62] plaintiff sued the State to recover damages for the death of her husband and for her own injuries resulting from a multi-car accident on a State bridge. Plaintiff and her husband were struck from behind by three other cars minutes after plaintiff's car spun out of control and ended up blocking the left and middle lanes of the three-lane bridge during a snowstorm after dark. Despite expert testimony that the design of the bridge and the lighting system were defective in several respects, the trial judge instructed the jury that as a matter of law the design of the lighting system and the bridge did not constitute negligence because "discretionary governmental immunity" applied.

The Supreme Court of Washington reversed and remanded for trial on the issue of the State's negligence. Judicially recognized discretionary immunity, said the Court, was "an extremely limited exception" [63] to the general withdrawal of State tort immunity by the legislature.[64]

The preliminary test used in the State of Washington to determine whether an act, omission, or decision could be classified as discretionary was set out in *Evangelical United Brethren Church v. State:* [65]

> (1) Does the challenged act, omission or decision necessarily involve a basic governmental policy, program or objective? (2) Is the questioned act, omission, or decision essential to the realization or accomplishment of that policy . . . as opposed to one which would not change the course or direction of the policy, program, or objective? (3) Does the act . . . require the exercise of basic policy evaluation, judgment, and expertise on the part of the governmental agency involved? (4) Does the governmental agency involved possess the requisite . . . authority. . . .? [66]

This test was refined in *King v. Seattle* [67] to indicate that the burden was on the State to prove that discretion was actually exercised:

> Immunity for "discretionary" activities serves no purpose except to assure that courts refuse to pass judgment on policy decisions in the

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[55] *Id.*

[56] See Thomas, "Legal Implications of Highway Department's Failure to Comply With Design, Safety, or Maintenance Guidelines," pp. 1966-N17–1966-N29 *supra.*

[57] 142 Cal. Rptr. 201 (App. 1977).

[58] There was also evidence that the State had notice that traffic and other conditions had materially changed since the bridge was opened. See section on the "Exception for Changed Circumstances" *infra.*

[59] 23 C.F.R. § 625.3(b).

[60] *Id.*; Highway Safety Act of 1966, Pub. L. 89-564, 80 Stat. 731, *codified at* 23 U.S.C. §§ 401–402; 23 C.F.R. Part 1204, Subpart B, Highway Safety Program Standard No. 12.

[61] 167 N.E. 2d at 66. See Zalewski v. State, 53 App. Div. 2d 781, 384 N.Y.S. 2d 545 (1976) (holding State liable for negligence in erecting an unsafe bridge guardrail without "adequate prior study," causing death of plaintiff's decedent) (discussed *infra* at notes 93–95 and accompanying text).

[62] 92 Wash. 2d 285, 597 P.2d 101 (1979).

[63] 597 P.2d at 106.

[64] REV. CODE WASH. ANN. § 4.92.090.

[65] 67 Wash. 2d 246, 407 P.2d 440 (1965).

[66] 407 P.2d at 445.

[67] 84 Wash. 2d 239, 525 P.2d 228 (1974).

province of coordinate branches of government. Accordingly, to be entitled to immunity the state must make a showing that such a policy decision, consciously balancing risks and advantages, took place. The fact that an employee normally engages in "discretionary activity" is irrelevant if, in a given case, the employee did not render a considered decision.[68]

On the basis of tests 1 and 2 of *Evangelical* as refined by *King*, the Court in *Stewart v. State* held that discretionary immunity for the lighting and bridge design was not warranted:

> The decisions to build the freeway, to place it in this particular location so as to necessitate crossing the river, the number of lanes—these elements involve a basic governmental policy, program or objective. However, these are not the elements which are challenged by appellant. Rather, appellant argues that once those governmental decisions were made they had to be carried out without negligent design of the bridge or of the lighting system. Negligent design was not essential to the accomplishment of the policy, program or objective. The State argues that adoption of a design necessarily involved a judgmental choice. The *King* test requires more. There was no showing by the State that it considered the risks and advantages of these particular designs, that they were consciously balanced against alternatives, taking into account safety, economics, adopted standards, recognized engineering practices and whatever else was appropriate. The issues arising from the evidence as to negligent design should have been submitted to the jury.[69]

There are other cases, not involving highway bridges, which manifest this trend towards limiting the discretionary function exemption. In *King v. State*,[70] for example, the Court held that discretionary immunity was not available to a State highway agency which failed to exercise "due care" in planning a traffic light system. The Court in *State v. Swenger* [71] held the State liable for a pedestrian bridge design which the Court called a "patchwork affair" devised by engineers who had no prior experience with designing foot bridges.

It should be noted that some state tort claims acts contain specific provisions reserving strict [72] or qualified [73] immunity for plans, designs, or standards approved by an authorized public entity or employee. Such design immunity statutes have been discussed in other papers.[74]

Under California Government Code Section 830.6, for example, the State may have the benefit of design immunity if it can prove (1) discretionary approval of the design prior to construction, (2) a causal relationship between the plan and the accident, and (3) the reasonableness of the design at the time it was approved.[75]

Thus in *Harland v. State*,[76] involving a fatal accident on a bridge, the California design immunity statute was unavailable to the State because there was evidence that the bridge was unreasonably dangerous when it was built. The Court in *Flournoy v. State*,[77] in which plaintiff claimed that the State had caused the death of plaintiff's decedent by constructing an ice-prone bridge, held that the State could not avail itself of the design immunity defense because the State had failed to prove that the design, and not the weather, was the proximate cause of the accident. The State was held immune from liabilty, however, on the basis of a statutory exemption for the effects of reasonably apparent weather conditions.[78]

Exception for Changed Circumstances

Whether or not a bridge design is reasonably safe at the time of its adoption, subsequent events may give notice to the highway agency that the design is or has become hazardous in actual operation. The New York Court of Appeals suggested in *Weiss v. Fote* that the State had a continuing duty to review a design in light of its operation, and to modify the design if accidents traceable to the design occurred or physical conditions changed.[79]

This exception for "changed circumstances" was added to the design immunity provision of the California Tort Claims Act [80] after the exception was recognized by the California Supreme Court in *Baldwin v. State*.[81] In that case, the Court held that once the State had notice that the omission of a left-turn lane from a highway design had created a dangerous condition due to increased traffic in the area, "it must act reasonably to correct or alleviate the hazard." [82]

The type of corrective action required, however, appears to vary with the particular hazard involved. It has generally been held, for example, that the State is under no obligation to widen or replace a bridge that is narrower than the adjoining highway. In most cases the State may fulfill its duty to use reasonable care to protect the public by erecting signs warning of a narrow bridge.[83]

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[68] 525 P.2d at 233.
[69] 597 P.2d at 106–107.
[70] 370 N.Y.S. 2d 1000 (Ct. Cl. 1975).
[71] 341 N.E. 2d 776 (Ind. App. 1976).
[72] See, e.g., N.J. STAT. ANN. § 59:4-6.
[73] See, e.g., CAL. GOV'T CODE § 830.6.
[74] See Thomas, "Liability of State Highway Departments for Design, Construction, and Maintenance Defects," pp. 1810–1812 *supra*; and Thomas, "Legal Implications of Highway Department's Failure to Comply With Design, Safety, or Maintenance Guidelines," *id.*, pp. 1966N-17–1966-N19.

[75] Harland v. State, 75 Cal. App. 3d 475, 142 Cal. Rptr. 201, 206 n. 3 (1977).
[76] *Id.*; discussed *supra*, notes 56–58 and accompanying text.
[77] 80 Cal. Rptr. 485 (App. 1969).
[78] CAL. GOV'T CODE § 831.
[79] 167 N.E. 2d at 67.
[80] CAL. GOV'T CODE § 830.6 (amended 1979).
[81] 6 Cal. 3d 424, 491 P.2d 1121, 99 Cal. Rptr. 145 (1972).
[82] 491 P.2d at 1127.
[83] The same general rule appears to be applicable to the State's duty with respect to bridges structurally weakened by age. See notes 153–159 and accompanying text *infra*.

A case in point is *Barr v. State.*[84] The personal representative of a truck driver, who was killed in a collision with another truck on a narrow State bridge, brought a wrongful death action against the State, and alleged negligent maintenance and construction of the bridge. The bridge in question was built in 1928, when the road and the vehicles which travelled upon it were not as wide as they are today, and traffic was slower.

A hill and curve at each end of the bridge prevented drivers from seeing oncoming vehicles until they were 300 feet from the bridge. An expert witness testfied that when the road was widened and hard-surfaced in 1958 the bridge became hazardous and should have been widened, or, at the very least, signs warning of the narrow bridge should have been installed. Neither course of action had been taken by the State.

The Highway Department in effect conceded that the bridge was dangerous, but contended that it could not with available funds upgrade all bridges that were below standard. There was testimony that the bridge at issue was one of 179 bridegs less than 19 feet in width located in the highway district where the accident occurred. The bridge was not given a high priority, the Department stated, because the traffic volume on the bridge was low.

The Court held that the Department was entitled to assign priorities in the performance of its duties, and consequently was not negligent in failing to widen or replace the bridge. A significant factor in the decision was a State statute vesting "sole responsibility" in the Board of Highways for establishing priorities of highway maintenance projects.[85] The State was held to have been negligent, however, in its failure to provide warning signs advising of the hazardous bridge.[86]

It has also been held that highway agencies are under no obligation to replace a bridge that is poorly aligned with the roadway. The Nebraska Supreme Court, in the pre-*Weiss* case of *Alson v. Wayne County,*[87] held that while the defendant county had a statutory duty to use reasonable and ordinary care in the construction, maintenance, and repair of its highways and bridges, the county was not liable for negligent planning or design. Plaintiff claimed that the county was negligent in "constructing and maintaining" a bridge at a sharp angle to the highway, thereby exposing motorists to the danger of losing control and going off the side of the bridge, as plaintiff did.

The Court rejected this claim, using language which presaged *Weiss v. Fote:*[88]

> Generally negligence may not be predicated on a curve or variation in a dirt or county road or the location or dimensions of a bridge placed therein or adjacent thereto according to road plans unless it is *so obviously dangerous that no reasonable or prudent man would approve the plans.*[89] (Emphasis supplied.)

The rationale for the decision was that the county was not an insurer of the public safety, and that the statutory duty should be narrowly construed.[90] Another possible factor in the decision might have been the high cost necessarily associated with the replacement of the bridge and others like it.

With respect to less costly and drastic alterations, on the other hand, notice to the State that an aspect of a bridge design was ill-conceived from the start or has proved to be dangerous in actual operation has been held to create a duty to correct the defect.

Thus in *Garrow v. State,*[91] where a child was killed after her bicycle toppled over the side of a bridge having no railing, the Court held that changing traffic conditions over the years should have put the State on notice that the bridge was no longer safe:

> The bridge in question was erected twenty-seven years prior to the death of claimant's intestate. Since then traffic conditions have radically changed. . . . In view of the growth of traffic it was defendant's duty in the interests of public safety to make such alterations in the structure of the bridge as would accord with changed conditions. . . . It was the duty of defendant to erect guardrails or barriers along its highways where they are necessary to make the same safe for travel in the use of ordinary care and it is liable in the case of injuries or death to travellers resulting from a breach of its duty in this regard.[92]

In another case, *Zalewski v. State,*[93] plaintiff's decedent was killed when the car in which she was a passenger collided with a truck on a State bridge and crashed through the bridge railing into the river below. The railing system was constructed of discontinuous aluminum rails mounted on posts made of cast aluminum alloy and bolted to the bridge. Although the State's witness testified that the bridge was constructed in 1960 in conformance with sound engineering practices, other evidence indicated that the State was aware as early as 1966 that cast aluminum alloy was extremely brittle and that discontinuous rails would not absorb and distribute impact.

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[84] 355 So. 2d 52 (La. App.), *cert. denied,* 355 So. 2d 1324 (1978).

[85] LA. STAT. ANN. (REV. STAT.) § 48:192(A).

[86] See discussion of the duty to warn, notes 105–121 and accompanying text *infra.*

[87] 157 Neb. 213, 59 N.W. 2d 400 (1953).

[88] See notes 41–43, *supra.*

[89] 59 N.W. 2d at 404.

[90] *Id.*

[91] 268 App. Div. 534, 52 N.Y.S. 2d 155, *aff'd,* 294 N.Y. 741, 61 N.E. 2d 523 (1945).

[92] 52 N.Y.S. 2d at 158–159. *Accord* Hargis v. City of Dearborn Heights, 34 Mich. App. 594, 192 N.W. 2d 44 (1971) (holding that where design of bridge was such as to permit pedestrians to take shortcut by stepping off sidewalk onto terraces forming foundation of bridge, city and county defendants were liable for death of minor who fell while taking shortcut).

[93] 53 App. Div. 2d 781, 384 N.Y.S. 2d 545 (1976).

The appellate Court rejected the State's argument, which relied on *Weiss v. Fote,*[94] that the design was reasonable at the time of its adoption and therefore was not reviewable by the courts:

> The immunity from review established by *Weiss* does not apply, however, where it can be shown that the plans of the bridge were approved without adequate prior study or lacked a reasonable basis and that subsequent events demonstrated the existence of a dangerous condition known by the State. The [trial] court found that there was no adequate prior study before the erection of the cast aluminum post and the discontinuous rails and the State's own records indicate that as early as 1961, and certainly by 1966, the State, through tests conducted by its agents and through examination of other accidents, determined that the rail failure appeared to be due to the brittleness of cast aluminum posts and the lack of continuity of the rails. The court found, and we agree, that the State was negligent in failing to timely replace those bridge posts and railings. We, therefore, affirm the finding of the court as to the negligence of the State and as to the finding that negligence was a proximate cause of the death of the claimant herein.[95]

CONSTRUCTION DEFECTS

State liability for negligent highway construction has been discussed in detail in another paper.[96] In general, operational-level decisions negligently implementing a plan or design (by deviating from design specifications and thereby causing injury, for example) are not shielded from judicial scrutiny under the exemption for discretionary functions, although the design itself may be discretionary and nonreviewable.

Such was the conclusion of a Federal District Court *In re Silver Bridge Disaster Litigation,*[97] involving the 1967 collapse of a bridge spanning the Ohio River between Ohio and West Virginia. The failure of the bridge, which was completed in 1928 with Federal approval of its design and construction, sent 46 people to their deaths and led to 15 wrongful death actions naming the United States as one of the defendants under the Federal Tort Claims Act.[98]

One of plaintiffs' claims was that the District Engineer of the War Department's Corps of Engineers, without authority, negligently permitted deviations from the approved plans during the construction of the bridge. The most significant of the deviations complained of was the use of heat-treated I-bars in the superstructure instead of the straight wire cable design provided for in the approved plans. Plaintiffs argued, *inter alia,* that the District Engineer's failure to obtain the Secretary of War's approval of the final plans pursuant to the Bridge Act of 1906[99] was a breach of statutory duty.

The Court held that the activities of the Federal approval authorities, the Secretary of War and the Chief of Engineers, were within the discretionary function exemption because those actions were at the "planning" rather than the "operational" level. With respect to the District Engineer, however, the Court rejected the Government's contention that the District Engineer had the right to approve "minor" deviations from the approved plans in constructing the bridge:

> That contention would not appear to be tenable [citing cases]. If therefore the District Engineer wrongfully or negligently permitted erection of the bridge in deviation from the approved design, such an act would not fall within the discretionary exemption contained in 28 U.S.C. § 2680(a) on the grounds that the deviation was minor even if it is assumed that the deviation was minor. . . . In sum, the discretionary exemption is not applicable herein at least with respect to the District Engineer.[100]

This statement appears to represent a mere dictum, however. The Court entered summary judgment in favor of the United States on the ground that applicable Federal bridge statutes[101] imposed no duty on the United States to inspect and approve the bridge for the benefit of motorists. After an exhaustive review of the legislative history of the statutes and case law, the Court concluded that Congress was concerned with facilitating commerce and providing for safe navigation, and not with the structural safety of bridge designs for travelers over the bridge.

No other significant cases involving bridge construction were found. It is likely, however, that bridge-related cases from jurisdictions having a tort claims act and a discretionary function exemption will be decided according to the same principles applicable to cases under the Federal Tort Claims Act.[102] The general rule established by the Federal courts is that the discretionary function exemption is not applicable where, as in *Silver Bridge, supra,* there is wrongful or negligent deviation from detailed specifications set out in the plan or design. Conversely, where the details of a plan or design are strictly adhered to, the discretionary function exemption is applicable. There appears to be a split of authority as to whether discretionary function immunity applies to the negligent implementation of a general plan or design that is silent as to detail.[103]

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[94] 7 N.Y. 2d 579, 200 N.Y.S. 2d 409, 167 N.E. 2d 63 (1960).

[95] 384 N.Y.S. 2d at 546-547.

[96] See Thomas, "Liability of State Highway Departments for Design, Construction, and Maintenance Defects," pp. 1815–1817 *supra.*

[97] 381 F.Supp. 931 (S.D.W.V. 1974). Other holdings of this case are discussed *infra* at notes 162–164 and accompanying text.

[98] 28 U.S.C. §§ 2671 *et seq.*

[99] 34 Stat. 85, *codified* at 33 U.S.C. § 491 *et seq.*

[100] 381 F. Supp. at 970.

[101] Rivers and Harbors Act of 1899, 33 U.S.C. §§ 401 *et seq.*; Bridge Act of 1906, 33 U.S.C. §§ 491 *et seq.*

[102] 28 U.S.C. §§ 2671 *et seq.*

[103] These general principles are set out in 2 Jayson, *Handling Federal Tort Claims,* § 249.06[1] at pp. 12-113–12-114.

MAINTENANCE DEFECTS

In States where the government has consented to suit, the cases uniformly have treated bridge maintenance as a ministerial, operational-level activity not immunized by the discretionary function exemption.[104] Today, the duty to maintain bridges and highways in a reasonably safe condition for the traveling public has been generally established by tort claims acts and other State statutes or by judicial decision.

The State is not an insurer of absolute safety, however. Assuming the State may be sued for its negligence, the burden is on the plaintiff to prove that the State breached its duty of ordinary care. This duty may arise in a variety of situations where bridges are involved.

Installation of Warning Devices

The single most common, and most successful, claim by plaintiffs who are injured on highway bridges is that the State was negligent in failing to provide adequate warning of a hazardous condition on the bridge.[105]

One reason for the success of this claim is that courts that are unwilling to approve damage awards against the State for operating an otherwise functional but narrow or structurally weak bridge appear more willing to hold the State accountable for the far less costly duty of warning the public of the potental hazard. The duty to warn is most frequently encountered in cases involving narrow bridges.[106]

For example, in *Barr v. State,*[107] the Court affirmed a judgment against the State awarding damages for the death of a truck driver on a narrow bridge. A hill and curve on each approach to the bridge prevented the decedent from identifying the hazard in time to bring his 18-wheel semitrailer to a stop before colliding with a poultry bus already on the bridge. The only sign on the approach roadway was a "curve" sign with a recommended speed designation of 40 miles per hour.

The Court, while conceding that the decision not to widen the bridge may have been properly within the discretion of the Department of Highways, noted that the Department had adopted, pursuant to statute, the Manual on Uniform Traffic Control Devices (MUTCD).[108] The Manual was held to establish a duty to install warning signs at the bridge in question:

> The [MUTCD] regulation above cited would require a narrow bridge sign for the reason the width of the bridge is less than the width of the approaching pavement. The second regulation cited would require a one-lane bridge sign because the alignment approaching the structure is poor. The cost of installation of one of these warning signs is minimal. The defendant was well aware of the hazardous condition of the bridge prior to the time of the accident. There is no justification for its failure to have installed the warning signs and its failure to do so is negligence.[109]

Conversely, the posting of appropriate signs by the State has been held to absolve the State from negligence for maintaining a substandard bridge. In *Norman v. State,*[110] the Court reversed a judgment in favor of plaintiff truck driver, who was injured when he attempted to cross a secondary road bridge with a 29-ton load. The bridge, which had been posted by the State Highway Department for a 3-ton load limit after the Department determined that the substructure was weakened, collapsed.

The Court cited its earlier decision in *Department of Highways v. Fogleman* [111] in holding that the State was not negligent in permitting the bridge to be used for light traffic provided the public was adequately warned of the load limitation. *Fogleman* was an unusual case in which the State sued a truck driver who caused a bridge to collapse by crossing it with his overweight truck. In that case the State was barred from recovery by its contributory negligence in failing to replace a load limit sign which had been removed by parties unknown.

The evidence in *Norman* was sufficient to sustain a finding that the load limit sign was in place at the time of the accident. In a significant

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[104] See also pp. 1817-1818, 1834-S10–1834-S12 *supra.*

[105] See e.g., Hall v. State, 435 N.Y.S. 2d 663 (Ct. Cl. 1981); Barr v. State, 355 So. 2d 52 (La. App.), *cert. den.,* 355 So. 2d 1324 (1978); Flournoy v. State, 80 Cal. Rptr. 485 (App. 1969); Wager v. State, 8 App. Div. 2d 236, 187 N.Y.S. 2d 445, *aff'd,* 7 N.Y. 2d 945, 198 N.Y.S. 2d 316, 165 N.E. 2d 878 (1959); Norman v. State, 227 La. 904, 80 So. 2d 858 (1955); Rugg v. State, 284 App. Div. 179, 131 N.Y.S. 2d 2 (1954); Dept. of Hwys. v. Fogleman, 210 La. 375, 27 So. 2d 155 (1946); Barna v. State, 267 App. Div. 261, 45 N.Y.S. 2d 513, *aff'd,* 293 N.Y. 877, 59 N.E. 2d 784 (1943); Hansmann v. Gosper Cty., 207 Neb. 659, 300 N.W. 2d 807 (1981); Prybysz v. City of Spokane, 601 P. 2d 1297 (Wash. App. 1979); Aebi v. Monmouth Cty. Hwy. Dept., 148 N.J. Super. 430, 372 A. 2d 1130 (1977); Tanguma v. Yakima Cty., 569 P. 2d 1225 (Wash. App. 1977); Lucas v. Phillips, 209 P. 2d 279 (Wash. 1949). See generally Thomas, "Liability of State and Local Governments for Negligence Arising Out of the Installation and Maintenance of Warning Signs, Traffic Lights, and Pavement Markings," pp. 1943–1965 *supra.*

[106] See, e.g., the following cases cited *id.*: Barr v. State, Wager v. State; Rugg v. State; Barna v. State; Tanguma v. Yakima Cty.; Lucas v. Phillips. See generally Annot., *Liability, in motor vehicle-related cases, of governmental entity for injury or death resulting from design, construction, or failure to warn of narrow bridge,* 2 A.L.R. 4th 635 (1980).

[107] 355 So. 2d 52 (La. App.), *cert. denied,* 355 So. 2d 1324 (1978).

[108] LA. STAT. ANN. (REV. STAT.) § 32:235. The MUTCD was developed with the cooperation of the American Association of State Highway and Transportation Officials and other groups and has been approved pursuant to 23 U.S.C. §§ 109(b), 109(d), and 402(a), and 23 C.F.R. § 1204.4 as the "national standard" for all public highways. The Manual has also been adopted by many States, including Louisiana. See Thomas, "Legal Implications of Highway Department's Failure to Comply With Design, Safety, or Maintenance Guidelines," p. 1966-N6 *supra.*

[109] 355 So. 2d at 56.

[110] 227 La. 904, 80 So. 2d 858 (1955); *accord.,* Dept. of Hwys. v. Jones, 35 So. 2d 828 (La. App. 1978).

[111] 210 La. 375, 27 So. 2d 155 (1946).

footnote, the Court returned to the issue, briefly addressed in *Fogleman*, of what effect vandalism might have on the State's duty to install load limit signs:

> [I]t would not automatically follow that the State would be liable even if a third person, without its knowledge or consent, removed the sign from the bridge. In such event, responsibility would depend upon whether the Department of Highways had actual or constructive notice that the sign was missing and failed, within a reasonable length of time, to remedy the situation.[112]

The adequacy of the warning if one is provided is an issue for the finder of fact, *i.e.*, the court or the jury. Thus, in *Rugg v. State*,[113] the Appellate Court upheld a finding by the trial court that a "Narrow Bridge" sign standing alone was inadequate to warn motorists of a 22-degree curve immediately preceding an old bridge over a canal. The bridge was located on a State Highway 27 feet in width which narrowed to 20 feet as it approached the bridge. The Court held that the curve was such that it should have been anticipated by a "right angle curve" sign.

The second important issue in *Rugg* was whether the negligence of the State in failing to provide adequate warning signs was at least a contributing cause of the accident. Plaintiff, who was injured when he struck the bridge railing after failing to negotiate the turn onto the bridge at night, testified that he had been over the bridge "two or three" previous times during daylight hours. The trial court held that the lack of a "curve" sign was therefore immaterial because the signs would not have added anything to plaintiff's knowledge of the road and bridge conditions.

This holding was reversed by the Appellate Court:

> In these circumstances, the absence of appropriate warning signs cannot be ruled out of the case as being causally unconnected with the happening of the accident. If the claimant did not have the situation in mind at the very moment of danger, road signs would obviously have been helpful in reminding him of the oncoming danger and in warning him of the need to take appropriate action. Only if we were able to find that the claimant, by reason of his recollection of prior trips over the road, knew of the danger just as soon as he would have known of it if there had been adequate signs along the road, could we say that the omission of the signs was not one of the proximate causes of the accident. Warning signs properly placed would have given the claimant notice of the dangerous situation while he was still several hundred feet away from the curve. Upon this record, it would be contrary to the weight of the evidence to find that the claimant actually had the danger in mind at the time he reached that point.[114]

Finally, the general rule appears to be that the duty, if any, to erect signs arises only where there exists an inherently dangerous condition not reasonably apparent to the prudent motorist.[115] Examples of bridge conditions held to require warning signs, such as narrowness, structural weakness, and sharp approach curves, have been discussed above.

A cautionary note should be added, however, with respect to statutory liability. With the enactment of tort claims legislation by an increasing number of jurisdictions, much of the law in this area is based on statute. A comparison of two cases will illustrate how different States have approached the issue of warning signs.

The wrongful death case of *Flournoy v. State*[116] construed several sections of the California Tort Claims Act and held that plaintiff's theory, that the State had created a "dangerous condition" by constructing an ice-prone bridge, failed to state a cause of action. Plaintiff's complaint was held to state a tenable claim, however, on the independent theory that the State had knowledge of a dangerously icy condition and was negligent in failing to post a warning[117] pursuant to Sections 830.8 and 831 of the Act, which read as follows:

> Section 830.8 Neither a public entity nor a public employee is liable under this chapter for an injury caused by the failure to provide traffic or warning signals, signs, markings or devices described in the Vehicle Code. Nothing in this section exonerates a public entity or public employee from liability for injury proximately caused by such failure if a signal, sign, marking or device (other than one described in Section 830.4) was *necessary to warn of a dangerous condition which endangered the safe movement of traffic and which would not be reasonably apparent to, and would not have been anticipated by, a person exercising due care.* (Emphasis supplied.)
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> Section 831 Neither a public entity nor a public employee is liable for an injury caused by the effect on the use of streets and highways of weather conditions as such. Nothing in this section exonerates a public entity or public employee from liability for injury proximately caused by such effect *if it would not be reasonably apparent to, and would not be anticipated by, a person exercising due care.* For the purpose of this

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[112] 80 So. 2d at 861, n. 2; *accord.*, Hansmann v. Cty. of Gosper, 207 Neb. 659, 300 N.W. 2d 807 (1981).

[113] 284 App. Div. 179, 131 N.Y.S. 2d 2 (1954); *accord.*, Turner v. Cty. of Clinton, 285 App. Div. 210, 136 N.Y.S. 2d 471 (1954) (holding that adequacy of load limit sign was jury question).

[114] 131 N.Y.S. 2d at 506; *accord.*, Wager v. State, 8 App. Div. 2d 236, 187 N.Y.S. 2d 445 (1959), *aff'd*, 7 N.Y. 2d 945, 198 N.Y.S. 2d 316, 165 N.E. 2d 878 (1960).

[115] See, *e.g.*, Flournoy v. State, 80 Cal. Rptr. 485 (App. 1969); Prybysz v. City of Spokane, 601 P. 2d 1297 (Wash. App. 1979); Olson v. Wayne Cty., 157 Neb. 213, 59 N.W. 2d 400 (1953).

[116] 80 Cal. Rptr. 485 (App. 1969).

[117] *Accord*, Estate of Klaus v. Michigan State Hwy. Dept., 90 Mich. App. 732, 282 N.W. 2d 809 (1979) (discussed *infra*, notes 143–145 and accompanying text); Cameron v. State, 7 Cal. 3d 318, 497 P.2d 777, 102 Cal. Rptr. 305 (1972) (dicta that negligent failure to warn provides an independent basis of liability even where the State pleads and proves design immunity).

> section, the effect on the use of streets and highways of weather conditions included the effect of fog, wind, rain, flood, ice or snow but does not include physical damage to or deterioration of streets and highways resulting from weather conditions. (Emphasis supplied.)

The Court reversed a summary judgment against plaintiff and remanded the case for trial on the issue of whether the State had been negligent in failing to post a warning.

Compare the case of *Aebi v. Monmouth County Highway Department,*[118] which construed the following provision of the New Jersey Tort Claims Act:

> Neither a public entity nor a public employee is liable under this chapter for an injury caused by the failure to provide ordinary traffic signals, signs, markings or other devices.[119]

The Court affirmed a summary judgment against plaintiff, who was injured in an automobile accident on a bridge that was considerably narrower than the road on which it was located. Plaintiff's attempt to avoid the application of the statute on the theory that the statute did not apply to a dangerous condition created by the defendant county was rebuffed by the Court as contrary to legislative intent.

> The determination as to the advisability or necessity of a traffic sign or warning device at any particular place requires the exercise of discretion, and hence *N.J.S.A.* 59:4-5 simply specifies one particular type of discretionary activity to which immunity attaches. *N.J.S.A.* 59:4-4, rendering the public entity liable for failure to provide "emergency" signals, provides an exception to *N.J.S.A.* 59:4-5, and clearly has no application to the facts of this case.[120]

The Court also held that another New Jersey statute[121] relied upon by plaintiff, rendering counties liable for failure to maintain or repair a bridge, was impliedly repealed by the tort claims act.

Thus, although by statute the public entity in both California and New Jersey is immune from liability for failure to provide "ordinary" traffic signs, the statutory exception to the general rule is much more narrowly drawn in New Jersey than in California, creating highly divergent decisions.

Maintenance of Bridge Railings

As seen in the discussion of *Garrow v. State,*[122] where a child was killed when her bicycle fell from a bridge having no railings, the State's duty to use reasonable care to provide for the safety of the travelling public has been held to require the installation of bridge railings where the State knows or should know that conditions so warrant.

If subsequent events, such as traffic accidents and State investigations, give notice to the State that a bridge railing design is dangerously defective, as in *Zalewski v. State,*[123] the State may be negligent if it fails to replace the railings. Although there do not appear to be any other cases directly in point, *Zalewski* would probably be persuasive precedent in jurisdictions such as California which have adopted the "changed circumstances" exception to discretionary function or design immunity.[124]

Railing systems that are reasonably safe when installed can, of course, become weakened and dangerous with age or lack of proper maintenance. Even structurally sound and well-maintained railings, moreover, may not be capable of withstanding direct impact by a vehicle that is out of control. The question then becomes whether the public entity breached its duty to maintain the railings in a reasonably safe condition.

In *Prybysz v. City of Spokane,*[125] plaintiff's decedents were killed when their car spun out of control on a bridge and crashed through a bridge railing to the riverbank below. There was evidence that the driver was intoxicated. Plaintiff contended that the defendant city had been negligent in maintaining the railing. Although the evidence as to the condition of the railing was conflicting, experts for the defendant testified that the city had inspected the railing on several occasions prior to the accident and found no deficiencies, and that the rail had been struck by cars many times before without giving way.

The trial court's instructions to the jury with respect to the city's duty included the following language:

> A city has a duty to exercise ordinary care in the inspection, maintenance, and repair of its public streets and bridges [including bridge railings] to keep them in a condition that is reasonably safe *for usual and ordinary travel,* with reasonable regard for dangers that may be anticipated.[126] (Emphasis supplied.)

The jury returned a verdict for the city, and answered an interrogatory by saying that the city had not maintained the bridge in a negligent manner.[127] There was no finding of negligence on the part of the decedents, although the jury had been instructed on comparative negligence.

On appeal, plaintiff argued that the jury may have been mislead by the instruction into believing that the city owed no duty to persons not engaged in "usual and ordinary travel," such as the situation where a

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[118] 138 N.J. Super. 430, 372 A.2d 1130 (1977).

[119] N.J. STAT. ANN. tit. 59, § 4-5.

[120] 372 A.2d at 1131–1132.

[121] N.J. STAT. ANN. tit. 27, § 19-10.

[122] 268 App. Div. 534, 52 N.Y.S. 2d 155, *aff'd,* 294 N.Y. 741, 61 N.E. 2d 523 (1945) (discussed *supra,* notes 91–92 and accompanying text).

[123] 53 App. Div. 2d 781, 384 N.Y.S. 2d 545 (1976) (discussed *supra,* notes 93–95 and accompanying text).

[124] See discussion *supra,* notes 79–95 and accompanying text.

[125] 601 P.2d 1297 (Wash. App. 1979).

[126] *Id.* at 1299, n. 1.

[127] Evidence that the bridge had been inspected and found sufficient was relevant on the issues of notice to the city and the city's exercise of reasonable care. Apparently the jury found that evidence to be persuasive.

vehicle was out of control. Plaintiff objected to the trial court's omission of plaintiff's proposed instruction, which deleted all reference to "usual and ordinary travel" and required the city to keep bridges reasonably safe under conditions that could be "reasonably anticipated." [128]

After reviewing Washington case law, the Appellate Court upheld the jury's verdict without deciding whether the instruction should have been limited to travelers exercising reasonable care, since plaintiff's request to instruct the jury as to "reasonably anticipated conditions" had been granted by the trial court. In dictum the Court said this:

> [T]he language in the cases seems to suggest the duty of the City is limited to travelers using ordinary care. This is consistent with the rule that the City is not an insurer or guarantor of the safety of the streets or bridges. It is also consistent with the common law duty to exercise reasonable care.[129]

Note that the plaintiff in *Prybysz* was denied recovery, not because of any negligence on the part of plaintiff's decedents, but rather because plaintiff did not succeed in proving that the city had breached its duty. In *McDaniel v. Southern Railway Co.*,[130] the Court reached a similar conclusion under a rationale phrased in terms of proximate cause and foreseeability.

Plaintiff's decedent in *McDaniel* was killed when the driver of the car in which the decedent was a passenger fell asleep at the wheel, causing the car to leave an Interstate highway at high speed and collide with the end of a guardrail on a bridge approach. Plaintiff sued the county in which the accident occurred on the theory that the county had negligently designed and maintained the guardrail.

There was expert testimony that the guardrail should have been but was not designed in accordance with modern standards, which require that the end of the rail be flared outward and anchored to the ground so as not to penetrate a vehicle on impact, as did the rail in this case. The guardrail was designed in compliance with then-existing Federal standards and terminated above ground 4 feet from the edge of the concrete pavement. Before the contract was let and the guardrail was built as designed, however, new standards calling for a "flared and anchored" guardrail were issued. Plaintiff's expert witness testified that a guardrail built in August 1966 should have met the new standard or should have been later modified.[131]

[128] *Id.* at 1300.

[129] *Id.* at 1301. See the following cases, however, for holdings which suggest a duty to maintain guardrails sufficient to prevent a car from breaking through: Zerdwig v. City of Derby, 129 Conn. 693, 31 A.2d 24 (1943); Thorbjohnson v. Rockland-Rockport Lime Co., 309 A.2d 240 (Me. 1973).

[130] 130 Ga. App. 324, 203 S.E. 2d 260 (1973).

[131] See the paper on design, safety, and maintenance guidelines, p. 1966-N1 *supra*. Highway cases generally hold that there is no duty to upgrade highways merely because the applicable standards have been revised. As a general rule, whether the highway should be improved or upgraded appears to be a decision vested largely in the discretion of the appropriate governmental body, unless there is notice of a dangerous condition or "changed circumstanecs." Note that in McDaniel, however, the guardrail was not constructed in accordance with then-existing standards. In most jurisdictions, this fact would represent persuasive evidence of negligence.

The Court held that the county was not liable under a statute which imposed upon the county a duty to exercise ordinary care in constructing and maintaining bridges in a safe condition.

> The county in which the bridge was built and maintained was not liable for the death of the passenger under Code § 95-1001 for the reason the sole proximate cause of the collision, which resulted in the injuries to the passenger, was the act of the driver of the automobile. . . . It is not a duty of the county to anticipate and provide against a driver of an automobile falling asleep, but this falls within the "domain of the unusual and the extraordinary, and therefore, in contemplation of law, of the unforeseeable," there being no defect in the bridge which was a contributory cause toward rendering the automobile uncontrollable.[132]

Summary judgment in favor of the county was affirmed.

See also the New Jersey pre-tort claims act cause of *Monaco v. Comfort Bus Line, Inc.*,[133] where the Court affirmed a directed verdict against plaintiffs who charged that the defendant counties negligently constructed and maintained a curb and railing on a bridge. The case arose out of an accident in which a passenger bus went out of control for some unexplained reason, jumped a wooden curb on the bridge, and passed through the bridge railing. The curb and railing did not meet AASHTO standard specifications.

The directed verdict for the counties was nevertheless upheld on the ground that the counties owed a duty only to exercise that degree of care necessary to make "ordinary travel" reasonably safe. The instance of a bus being driven over a curb and through a railing was characterized as an extraordinary event that could not be reasonably anticipated.

Possibly the most critical factor of the holding, however, was indicated by the Court in its second ground for finding against the plaintiffs:

> It was incumbent on plaintiffs, in addition to proving negligence on the part of defendants, to prove affirmatively that such negligence, if any, was the proximate cause of the accident. Without doubt the primary cause was the action of the operator of the bus, his loss of control thereof or some other unexplained reason, for turning sharply and taking the course it did. . . . As a prerequisite to the cases going to the jury *it was incumbent on plaintiffs to show that if the curb and railing had met the*

[132] 203 S.E.2d at 262.

[133] 134 N.J. L. 553, 49 A.2d 146 (App. 1946).

standards contended for the accident probably would have been prevented. The record is barren of any such testimony.[134] (Emphasis supplied.)

This prerequisite would appear difficult indeed for plaintiffs to meet, both from a factual standpoint (e.g., proving the speed of the vehicle, its angle of impact, and so forth) and from an engineering standpoint (e.g., the capacity of standard railings and curbs to stop or deflect a particular vehicle under certain conditions). Questions of law would also be raised, such as whether there exists a duty to upgrade aging equipment so as to meet modern standards.[135]

See also the following nonbridge-related cases holding that guardrails need not be of sufficient strength to restrain a motor vehicle traveling at a high rate of speed:

Pickering v. State, 57 Haw. 405, 557 P.2d 125 (1976).
Bartlett v. Northern Pacific Railway Company, 74 Wash.2d 881, 447 P.2d 735 (1968).
Lang v. City of Troy, 256 App. Div. 743, 12 N.Y.S.2d 599 (1939).

Control of Ice and Snow

The liability of State and local governments for snow and ice control has been discussed at length in another paper.[136]

As a general rule, public agencies are under no duty, in the absence of a statute, to remove general accumulations of ice and snow from streets and highways, including bridges thereon.[137]

Public agencies, of course, generally assume the duty of controlling ice and snow, and once the duty is undertaken it must be performed with reasonable care. In States that have enacted tort claims legislation, salting and sanding operations performed pursuant to a general plan or policy for snow and ice control are generally deemed to be ministerial acts not protected by the exemption for discretionary functions.[138]

Often a pivotal issue in cases involving liability for snow and ice control is whether the public agency had actual or constructive notice of dangerous conditions and a reasonable time to remedy them. Notice is a prerequisite to proving a breach by the agency of its duty to use ordinary care to keep bridges and other highway components reasonably safe for public travel.

Ice formation on bridegs presents special problems of notice because bridge decks tend to freeze earlier than does pavement which draws heat from its contact with the ground, and may become icy while the adjoining road surface remains unfrozen. Judicial decisions involving ice formation on bridges have reached divergent conclusions because courts, and expert witnesses, disagree on the extent to which bridge icing is a predictable phenomenon.

In the case of *Hunt v. State*,[139] for example, plaintiff sued the State for injuries he sustained when he lost control of his car on a frost-covered bridge that had not been salted or sanded. The accident occurred in the early morning hours on a late autumn day, when the surface of the highway and the bridge approach were clear and dry. The Appellate Court affirmed a judgment against the State upon finding that the State had breached its duty to exercise ordinary care to maintain its highways in a safe condition for travel.

The central issue, according to the Court, was whether the State could be charged with constructive notice of the slippery condition of the bridge and a reasonable opportunity to remedy it. The evidence revealed that the State routinely ignored its own statement of policy and procedures regarding frost on bridges. The statement, contained in the State's highway maintenance manual, described the use of weather reports to predict frost formation and mandated the treatment of frosty bridge floors with salt or abrasives. The State admitted in testimony that it relied solely on random frost checks by maintenance employees to determine the need for salting or sanding.

The Court held:

> Substantial evidence was adduced to show the procedure was applicable and was violated. In addition, substantial evidence was received supporting the trial court's finding that violation of the procedure was a proximate cause of Hunt's accident. If the maintenance personnel had used the procedure, they would have known of the probability of frost and could have taken timely measures to eliminate the danger. Availability of the procedure coupled with weather conditions favorable to frost gave the commission constructive notice of the hazard in time to guard against it or eliminate it.[140]

The evidence produced in *Dougherty v. Oregon State Highway Commission*,[141] on the other hand, was held to be insufficient to establish sufficient notice on the part of State highway maintenance employees. Plaintiff's decedent was killed in a collision on a bridge during a freezing rain. The State's maintenance foreman testified that although he kept abreast of weather conditions by monitoring local radio stations and communicating with patrolling highway department trucks and State police, he had no knowledge of icy conditions on the bridge in question until after the accident occurred.

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[134] 49 A.2d at 149–150.

[135] This issue is discussed in the paper on design, safety, and maintenanec guidelines, at p. 1966-N24 *supra*. See note 131 *supra*.

[136] Thomas, "Liability of State and Local Governments for Snow and Ice Control," pp. 1869–1888 *supra*.

[137] Estate of Klaus v. Michigan State Hwy. Dept., 90 Mich. App. 277, 282 N.W. 2d 805 (1979); Lohmann v. City of Cincinnati, 173 N.E. 2d 690 (Ohio App. 1960).

[138] See, *e.g.*, Daugherty v. Oregon State Highway Comm'n, 270 Or. 144, 526 P.2d 1005 (1974).

[139] 252 N.W. 2d 715 (Ia. 1977).

[140] *Id.* at 719.

[141] 526 P.2d 1005 (Or. 1974).

The Court concluded that plaintiff had failed to prove breach of the duty of reasonable care by the State:

> If there was evidence that the defendant's employees knew or should have known that the Scoggins Creek Bridge was going to be covered with ice at about 8:30 a.m. on December 3, 1969, and had sufficient time to take remedial action which might have prevented this accident we would have no hesitation in affirming the judgment of the trial court. However, . . . [t]here is no evidence that defendant's employees had any warning whatever that the freezing would occur. . . . [While there] is evidence that after the freezing started [one state truck] was busy sanding other bridges [in the vicinity,] . . .]t]here is no evidence tending to prove that defendant's employees should have ignored other bridges and danger spots and hurried to sand the Scoggins Creek Bridge, nor any evidence that if they had done so they would have arrived in time to prevent this accident.[142]

The Court in *Estate of Klaus v. Michigan State Highway Department*[143] appeared to go a step further by suggesting that adequate notice of "preferential" bridge icing (the tendency of bridge surfaces to freeze before the adjoining roadway does) was virtually impossible. Plaintiff's claim that highway authorities were liable for the death of plaintiff's decedent by reason of their failure to remedy the icy condition of a bridge was rejected by the Court:

> In the instant case, testimony elicited from witnesses for both parties indicated that it was impossible to predict when preferential icing would occur. Although temperature was one indicator, there are numerous other relevant factors. All the expert witnesses agreed that the icing could occur suddenly and almost instantaneously. A maintenance engineer for the Highway Department indicated that an observer could drive over a bridge and find it clear, but that it could ice up immediately afterward. It was also established that salting the highway in anticipation of this problem would be of no value since the salt would be blown off a dry road within minutes by traffic. . . . Short of full time human surveillance of the bridge from early fall to late spring, there is no assured method for immediate detection of this condition. The Highway Department cannot be held to so stringent a standard.[144]

Based on the evidence, the Court struck down the trial court's finding that the Highway Department was negligent in failing to guard against icing on the bridge.

The judgment against the Department was affirmed, however, on the basis of evidence that a "Watch for Ice on Bridge" sign was not visible to motorists on the day of the accident. The Court emphasized that numerous prior accidents caused by ice on the bridge on clear days were known to the Department. Thus, while the Court was unwilling to charge highway authorities with knowledge of the icy condition of the bridge on the day of the accident so as to create a duty to remedy the condition, defendants' knowledge of the bridge's propensity for preferential icing was held to establish a duty to warn of the potential hazard.[145]

Although *Hunt, Daugherty* and *Klaus* involved claims based on the Iowa, Oregon, and Michigan tort claims acts, respectively, it should be noted that tort claims legislation in some States immunizes the State from liability for injuries or damage caused solely by the effect of weather conditions on streets and highways.[146] In *Flournoy v. State*,[147] for example, the Court held that plaintiffs' theory that the State had created a dangerous condition by constructing an ice-prone bridge failed to state a cause of action, citing, *inter alia*, a section of the California Tort Claims Act granting immunity to the State for the effect of weather conditions.[148]

Defects in the Bridge Surface

The liability of the State for injuries resulting from its failure to correct defects in the surface of the highway is considered in other papers.[149] Once again, in jurisdictions where the State has consented to suit, the same duty to exercise reasonable diligence to keep highways reasonably safe for travel is equally applicable to bridges. In general, plaintiff must prove that his injuries were proximately caused by some defect in the highway surface, and that the defendant had actual or constructive notice of the defect and a reasonable opportunity to repair it.

Thus, in *Hogg v. Department of Highways of the State*,[150] the evidence indicated that the State's road foreman had ample notice of the broken condition of the pavement on a highway bridge. The passage of heavy traffic had caused chunks of concrete pavement to become dislodged, creating a hole 12 by 14 inches wide extending entirely through the wood decking of the bridge. Plaintiff was injured when his motorcycle struck

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[142] *Id.* at 1008.

[143] 90 Mich. App. 732, 282 N.W. 2d 809 (1979).

[144] 282 N.W. 2d at 807-808.

[145] *Id.* at 808; *accord.*, Flournoy v. State, 80 Cal. Rptr. 485 (App. 1969); see also Carpenter v. Travelers Ins. Co., 402 So.2d 282 (La. App. 1981) (holding that failure to open "Ice on Bridge" signs would not have been cause in fact of accident on icy bridge); see discussion of duty to warn, notes 105–121 *supra* and accompanying text.

[146] See, e.g., CAL. GOV'T CODE § 831; ILL. ANN. STAT. § 1-211; N.J. STAT. ANN. tit. 59, § 4-7.

[147] 80 Cal. Rptr. 485 (App. 1969).

[148] CAL. GOV'T CODE § 831.

[149] Vance, "Liability of the State for Injury-Producing Defects in Highway Surface," p. 1966-N33 *supra*; Thomas, "Liability for Wet-Weather Skidding Accidents and Legal Implications of Regulations Directed to Reducing Such Accidents on Highways, p. 1889 *supra*.

[150] 80 So. 2d 182 (La. App. 1955).

the hole on a dark night and overturned. The Court held that plaintiff was not guilty of contributory negligence in failing to avoid the hole, and that the State was liable because it knew of and failed to correct the hazardous condition of the bridge floor.[151]

Similarly, the State Highway Department in *Shively v. Pickens* [152] was held to have had actual and constructive notice that one of its bridges was excessively slippery when wet. Plaintiffs suffered injuries when their car was struck head-on by another car which had lost control on the bridge during wet weather. The evidence revealed that two other accidents caused by wet-weather skidding had occurred on the bridge during the three weeks prior to the accident in question and had been reported to the Highway Department's maintenance superintendent. Plaintiff's expert witness testified that under wet conditions the bridge surface had "the co-efficient of friction of ice." The Court held that the Department was negligent in failing to correct the condition and in failing to warn the motoring public of its existence.

Structural Defects

Structural deficiencies which lead to the collapse of a bridge represent the most dramatic and potentially the most costly of bridge defects. Most of the cases found, however, involved the collapse of small bridges on secondary roads under local jurisdiction,[153] rather than catastrophic failures such as the *Silver Bridge* disaster.[154]

The typical case arises out of the possibly negligent conduct of two parties: the truck driver who attempts to cross a secondary-road bridge with a rig that exceeds the bridge's load-carrying capacity; and the public agency, usually a county but occasionally the State, which either has failed to place load-limit signs at the entrances to the bridge, or failed to assure that the signs remain in place or are legible. Because the public agency is generally under no obligation to provide a bridge that is capable of supporting the heaviest traffic, the usual case revolves around the issues of whether the agency has fulfilled its duty, if any, to warn travelers of the rated capacity of the bridge, and secondly, whether the plaintiff driver was guilty of contributory (or comparative) negligence in ignoring the warnings if warnings were posted.

The same issues predominate when the public agency sues the truck driver who causes a bridge collapse by driving his heavy truck across it. The agency has been held to be barred from recovery by reason of contributory negligence if it failed to maintain load limit signs at the bridge.[155]

Public agencies such as counties may be required by statute to maintain adequate bridges, as was the case in *Hansmann v. Gosper County.*[156] Under a statute rendering counties liable for damages caused by "insufficiency or want of repair" of a county bridge, the Court declared that

> . . . a county is required to maintain bridges that are sufficient for the proper accommodation of the public at large in the various occupations which from time to time may be pursued in the locality where the bridge is situated. . . . A person using a bridge has a right to assume that the bridge is sufficient in the absence of knowledge that it is unsafe.[157]

Plaintiff was injured when a county bridge collapsed under the 23- to 24-ton weight of his truck. Gravel trucks of approximately the same weight had used the bridge frequently without mishap. At trial, the county highway superintendent testified that a 10-ton-limit sign had been posted on the bridge before he took office, but that it was his opinion after inspecting the bridge prior to the accident that the bridge was capable of carrying 23- to 24-ton loads, as it frequently did. There was evidence that the load limit sign had not been on the bridge for approximately 6 months before the collapse.

The Appellate Court held that the county's failure to post a sign was negligence. There is no suggestion in the opinion, despite the above-quoted recital of the county's duty, that the county had any obligation to replace or rehabilitate the bridge so that it would be capable of safely supporting the usual traffic in the area. Nor is there any indication of how the Court would rule if a sign had been posted by the county and regularly ignored by bridge users.

Other courts, however, have held it to be immaterial that the public agency had knowledge that vehicles weighing in excess of the posted load limitation regularly used a bridge before its collapse.[158] Under this view, the driver who ignores the posted limit is breaking the law and does so at his own risk.[159]

Today, pursuant to the National Bridge Inspection Program, States

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[151] The duty of care imposed on the State by Louisiana law, as expressed by the Court, included not only the duty to maintain and repair the highways so as to keep them reasonably safe, but also required the maintenance of "an efficient and continuous system of inspection." *Id.* at 184. This duty of inspection apparently was not a factor in the decision, however, since the evidence revealed that the State received numerous warnings of the dangerous condition of the bridge during the 2 months preceding the accident.

[152] 346 So.2d 1314 (La. App. 1977).

[153] See, e.g., Hansmann v. Cty. of Gosper, 207 Neb. 659, 300 N.W. 2d 807 (1981); Stevens v. Cty. of Dawson, 172 Neb. 585, 111 N.W. 2d 220 (1961); Shields v. Cty. of Buffalo, 161 Neb. 34, 71 N.W. 2d 701 (1955); Turner v. Cty. of Clinton, 285 App. Div. 210, 136 N.Y.S. 2d 471 (1954); Brantley v. Baldwin Cty., 81 Ga. App. 485, 59 S.E. 2d 288 (1950); Abbot Inv. Co. v. Jefferson Cty., 77 Ga. App. 761, 49 S.E. 2d 918 (1948).

[154] In Re Silver Bridge Disaster Litigation, 381 F. Supp. 931 (S.D.W.Va. 1974).

[155] Dept. of Hwys. v. Jones, 35 So. 2d 828 (La. App. 1978); Dept. of Hwys. v. Fogleman, 210 La. 375, 27 So. 2d 155 (1946).

[156] 207 Neb. 659, 300 N.W. 2d 807 (1981).

[157] 300 N.W. 2d at 808.

[158] Brantley v. Baldwin Cty., 81 Ga. App. 485, 59 S.E. 2d 288 (1950).

[159] Abot Inv. Co. v. Jefferson Cty., 77 Ga. App. 761, 49 S.E. 2d 918 (1948).

are required to inspect all public bridegs over 20 feet in length at least every 2 years.[160] It is hoped that regular and thorough inspection will help to prevent major tragedies such as the *Silver Bridge* disaster.[161]

As discussed above, the Federal District Court *In re Silver Bridge Disaster Litigation* [162] granted summary judgment for the United States with respect to its approval of the initial construction of the bridge on the basis of the discretionary function exemption of the Federal Tort Claims Act.[163] Plaintiffs further contended that later inspections and studies undertaken by the United States Bureau of Public Roads (now FHWA) pursuant to 23 U.S.C. § 21 of the Federal Highway Act of 1952 imposed a duty upon the Bureau to inspect the bridge for structural stresses or fractures and to warn the public that the bridge was dangerous.

The Court, however, granted summary judgment for the United States on this issue as well. The Court held that under the Federal Highway Act and the law of West Virginia and Ohio, the Federal Government had no duty to inspect any particular bridge, to inspect for safety, or to consider structural integrity. Any decision on those matters, moreover, would be made at the planning rather than the operational level and consequently would be protected by discretionary immunity.

Plaintiffs also claimed that the United States misrepresented the safety of the Silver Bridge when the Bureau of Public Roads permitted its name to be placed on a 1953 study which declared that the bridge was capable of carrying an "H-15" loading, indicating that the Silver Bridge's capacity for traffic was equivalent to that of new bridges. The United States was negligent and careless in its participation in the study, plaintiffs contended, in that the government knew or should have known that the bridge was vulnerable to a sudden collapse due to a number of design, construction, and wear factors. The Court held, however, that even if the statements in the study were assumed to constitute representations of safety by the United States, plaintiffs' complaint was barred by the "misrepresentation" exception of the Federal Tort Claims Act.[164]

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[160] See notes 7–10 *supra* and accompanying text.

[161] Federal agencies that own bridges are not required to follow the National Bridge Inspection Standards, discussed *supra*, notes 7–10, unless the bridges are on the Federal-aid system or are off-system bridges on roads under the jurisdiction of non-Federal authorities. The General Accounting Office reported in 1981 that there were almost 14,000 Federally owned bridges. GAO Report at 100.

[162] 381 F. Supp. 931 (S.D.W.Va. 1974).

[163] See notes 97–101 *supra* and accompanying text.

[164] 28 U.S.C. § 2680(h).

CONCLUSION

As seen, tort liability for design, construction, and maintenance defects in highway bridges is governed by the same general principles applicable to defects in other highway components. Courts have interpreted the State's general duty to maintain highways in a reasonably safe condition for the traveling public to be applicable to bridges in cases involving defective warning devices, guardrails, road surfaces, and other features common to highways and bridges.

Despite general agreement on basic principles, however, in many bridge cases the courts have reached widely divergent conclusions with respect to issues such as the discretionary function exemption, the duty of care, and the notice requirement. Aside from obvious differences in factual circumstances, much of this variation in the case law appears to be attributable to differing statutory provisions and their construction by the various courts. Through the enactment of tort claims acts and other statutory schemes, States today are increasingly willing and able to tailor the scope of their tort liability to meet their individual needs.

Also emerging from recent cases is the trend toward limiting the application of the discretionary function exemption that is found in many tort claims acts and in common law. Courts appear increasingly willing to review design decisions, for example, to determine whether governmental discretion was in fact exercised during the initial planning stages of a bridge, and whether that discretion was exercised in a reasonable manner. By virtue of the advancing age of our nation's bridges, moreover, claims alleging negligence for the highway agency's failure to upgrade a bridge in light of "changed conditions" or current design standards are likely to arise, and may benefit from judicially imposed limitations on discretionary immunity.

As for claims of negligent implementation of a plan or design during bridge construction, very little case authority was found. The most that can be said is that the courts most likely will apply the discretionary function exemption to bridge construction in the same manner as applied to claims of negligent construction on other public projects.

Although many bridge defects are similar in nature to highway defects, certain problems such as narrowness and structural deficiencies are more common to bridges. An underlying factor in many judicial decisions involving allegedly unsafe and injury-producing bridges may be the high cost and inconvenience to the public associated with major bridge alterations. Generally courts appear to favor enforcement of the duty to warn motorists of potential bridge hazards in lieu of imposing liability on the State for failing to rehabilitate or replace a narrow or structurally weak bridge. Again, however, the State's obligation to install warning signs may be governed by specific statutory provisions that differ from State to State.

These and other issues are likely to be raised with increasing frequency in future tort actions involving injuries to bridge users. As dis-

cussed, the condition of our nation's aging highway bridges has been declining for years, and a vast infusion of public funds for replacement and rehabilitation will be needed before significant improvement may be expected. In the meantime, highway agencies charged by the courts and legislatures with the duty of safeguarding the public safety must use cost-effective methods to meet this obligation so as to avoid tort liability.

APPLICATIONS

The foregoing should prove helpful to highway and transportation administrators, their legal counsel, and engineers responsible for the design, construction, maintenance, and operation of facilities. Officials are urged to review their practices and procedures to determine how this research can effectively be incorporated in a meaningful way. Attorneys should find this paper especially useful in their work as an easy and concise reference document in tort litigation cases.

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