

**Sobriety Checkpoints and Passive  
Alcohol Sensors: Law and Research**

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## **Foreword**

Sobriety checkpoints are a valuable component of a comprehensive enforcement strategy aimed at deterring alcohol-impaired driving. Research shows that the key to effective deterrence is the public's perception of the likelihood of being caught in violation of the law. The public has been shown repeatedly to identify checkpoint activity with increased risk of apprehension.

Passive alcohol sensors, devices that detect the presence of alcohol in the ambient air near a subject, significantly increase the effectiveness of sobriety checkpoints in two ways. First, they allow officers to quickly dismiss drivers who have not been drinking. Second, officers using sensors at checkpoint lanes identify a higher proportion of drivers who have been drinking than they do without sensors. This allows officers to focus their skills and attention on those drivers who should be further investigated at checkpoints and to determine if probable cause for an arrest is present.

The following pages list the citations to common law and statutes relevant to the constitutional and other issues raised by sobriety checkpoints, organized by state. Also listed are annotated bibliographies of research reports on the effectiveness of sobriety checkpoints and the reliability of passive alcohol sensors, both laboratory and field studies.

## Summary of Decisions Concerning Constitutionality of Sobriety Checkpoints

Laws as of November 2000

- Alabama**                    **Upheld under Federal Constitution.** Driving into private driveway to avoid a checkpoint justified a stop. *Smith v. State*, 515 So. 2d 149 (Ala. Cr. App. 1987). See also *Cains v. State*, 555 So. 2d 290 (Ala. Cr. App. 1989), *Brunson v. State*, 580 So.2d 62 (Ala. Cr. App. 1991), and *McInnish v. State*, 584 So.2d 95 (Ala. Cr. App. 1991). General checkpoint to deter “trouble” impermissible under *Hagood v. Town of Town Creek*, 628 So.2d 1057 (Ala. Cr. App. 1993).
- Alaska**                    **No state authority.**
- Arizona**                    **Upheld under Federal Constitution.** *State v. Superior Court*, 143 Ariz. 45, 691 P.2d 1073(1984). In *State v. Tykwinski*, 824 P.2d 761 (Ariz. App. 1991), defendants tried to suppress evidence obtained at a checkpoint. Because the checkpoint itself was legal, the evidence was admitted.
- Arkansas**                    **Upheld under State and Federal Constitution.** *Brouhard v. Lee*, 125 F.3d 656 (8th Cir. 1997), *Mullinax v. State*, 938 S.W.2d 801 (Ark. 1997). See also *Coffman v. State*, 26 Ark. App. 45, 759 S.W.2d 573 (1988); *Tims v. State*, 26 Ark.App. 102, 760 S.W.2d 78(1988); *Camp v. State*, 26 Ark.App. 299, 764 S.W.2d 463 (1989).
- California**                    **Upheld under State and Federal Constitution.** *Ingersoll v. Palmer*, 743 P.2d 1299 (Cal. 1987), *People v. In Re Richar T.*, 750 P.2d 297 (Calif. 1988) (No. 88-318), cert. den., 488 U.S. 986 (1988), 109 S. Ct. 542, 102 L.Ed.2d 572. In *People v. Banks*, the California Supreme Court held that advance publicity is not necessary for a checkpoint to be valid. 6 Cal.4th 926, 863 P.2d 769, 25 Cal.Rptr.2d 524 (1993).
- Colorado**                    **Upheld under State and Federal Constitution.** *People v. Rister*, 803 P.2d 483 (Colo. 1990), *Orr v. People*, 803 P.2d 509 (Colo. 1990). The *Rister* court held that the Colorado Constitution should be interpreted as coextensive with the federal constitution with regard to checkpoints.
- Connecticut**                    **Upheld under State Constitution.** *State v. Boisvert*, 671 A.2d 834 (Conn. App. 1996).
- Delaware**                    **Upheld under state law and Federal Constitution.** *Delaware v. Prouse*, 440 U.S. 648 (1979). A trial court has held that a legally executed U-turn in advance of a checkpoint did not justify a stop. *Howard v. Voshell*, 621 A.2d 804 (Del. Super. 1992).
- District of Columbia**                    **Upheld under Federal Constitution.** *Galberth v. U.S.*, 590 A.2d 990 (D.C. App. 1991); *U.S. v. McFayden*, 865 F.2d 1306 (D.C. Cir. 1989) upheld license and registration checks. The *McFayden* court found that when the principal purpose of a checkpoint is to regulate traffic using license and registration checks, the fact that the effort has benefits with regard to other offenses does not make an otherwise legal checkpoint invalid. *Duncan v. U.S.*, 629 A.2d 1 (D.C. App. 1993) follows *McFayden*.
- Florida**                    **Upheld under Federal Constitution.** *State v. Jones*, 483 S0. 2d 433 (1986). *Campbell v. State*, 679 So.2d 1168 (Fla. 1996) found a checkpoint deficient under *Jones* because the written guidelines were insufficient, especially with regard to the method for choosing which vehicle(s) to stop. A delay of less than five minutes before a driver was asked to exit the vehicle was found to be permissible. *Cahill v. State*, 595 So.2d 258 (Fla. App. 4 Dist. 1992).

- Georgia                   **Upheld under State and Federal Constitution.** *State v. Golden*, 318 S.E.2d 693 (Ga. App. 1984); *Evans v. State*, 380 S.E.2d 332 (Ga. App. 1989); *Seagraves v. State*, 442 S.E.2d 312 (Ga. App. 1994); *Hooten v. State*, 442 S.E.2d 836 (Ga. App. 1994); *Burns v. State*, 454 S.E.2d 152 (Ga. App. 1995); *Brent v. State*, 510 S.E.2d 14 (Ga. 1998). In *Castillo v. State*, 502 S.E.2d 261 (Ga. App. 1998), the court held that an abrupt change in speed and an unsafe turn apparently to avoid a license/insurance checkpoint justified a stop. See also *LaFontaine v. State*, 497 S.E.2d 367 (Ga. 1998) and *Payne v. State*, 502 S.E.2d 526 (Ga. App. 1998).
- Hawaii                   **Authorized by statute.** HAW. REV. Stat. 286-162.5 and 286-162.6. Also upheld under an unpublished opinion, *Hawaii v. Nagamine* (No. B-91009) (Hawaii 1985). Checkpoint standards are laid out in internal police regulation, Notice 86-10 which was discussed in *State v. Aguinaldo*, 782 P.2d 1225 (Hawaii 1989) and *State v. Fedak*, 825 P.2d 1068 (Hawaii App. 1992).
- Idaho                   **Illegal under state law.** *State v. Henderson*, 756 P.2d 1057 (Idaho 1988), held legislative authority was required for a checkpoint. There is no such authority absent particularized suspicion in the Idaho statute that describes the circumstances under which police may put up a roadblock. *State v. Medley*, 898 P.2d. 1093 (Idaho 1995) held a fish and game checkpoint invalid under the U.S. Constitution. The *Medley* Court noted that it was not addressing the issue of whether checkpoints violate the Idaho Constitution.
- Illinois                   **Upheld under Federal Constitution.** *People v. Bartley*, 486 N.E.2d 880 (Ill. 1985), cert. den. 475 U.S. 1068 (1986); checkpoints to enforce city sticker laws upheld if proper procedures are followed. *People v. Taylor*, 630 N.E.2d 1331 (Ill. App. 3 Dist. 1994).
- Indiana                   **Illegal under State Constitution.** *Indiana v. Gerschoffer*, 738 N.E.2d 713 (Ind. App. 2000), finding a violation of the state constitution. This decision is currently on appeal to the Indiana Supreme Court. Previously, checkpoints had been conducted in Indiana under *Garcia*, which held checkpoints legal under the federal constitution. *State v. Garcia*, 500 N.E.2d 158 (Ind. 1986), cert. den. 481 U.S. 1014 (1987); *Snyder v. State*, 538 N.E.2d 961 (Ind. App. 4 Dist. 1989). In the *Snyder* case, the court held that avoiding a checkpoint was sufficient cause to conduct a stop. One court in Indiana has that the state failed to prove that the checkpoint sufficiently advanced the state's interest in conducting it. *Covert v. State*, 612 N.E.2d 592 (Ind. App. 5 Dist. 1993). A drug interdiction checkpoint was held a violation of the U.S. Constitution in *Edmond v. Goldsmith*, 183 F.3d 659 (7th Cir. 1999).
- Iowa                   **Not permitted because statute authorizing roadblocks controls and does not authorize sobriety checkpoints.** 321K.1. DUI arrests may be made at roadblocks authorized by statute. *State v. Day*, 528 N.W.2d 100 (Iowa 1995). Absent statutory impediments, Iowa courts have upheld the constitutionality of checkpoints. *State v. Loyd*, 530 N.W. 2d 708); *State v. Riley*, 377 N.W.2d 242 (Iowa App. 1985). See also *State v. Hillesheim*, 291 N.W.2d. 314 (Iowa 1980). *State v. Heminover*, 2000 WL 564049 (Iowa App.), held avoidance does not justify stop. It also found the roadblock did not comply with guidelines.
- Kansas                   **Upheld under both state law and Federal Constitution.** *State v. Deskins*, 673 P. 2d 1174 (Kansas 1983). *Davis v. Kansas Dept. of Revenue*, 843 P.2d 260 (Kan. 1992), held that legislative authorization is not necessary for checkpoints. See also *State v. Baker*, 850 P.2d 885 (Kan. 1993) and *State v. Campbell*, 875 P.2d 1010 (Kan. App. 1994).
- Kentucky                   **Upheld under Federal Constitution.** *Kinslow v. Commonwealth*, 660 S.W.2d. 677 (Ky. 1984), cert. den. 465 U.W. 1105 (1984). Avoiding a checkpoint is sufficient to justify a stop. *Steinbeck v. Commonwealth*, 862 S.W.2d 912 (Ky. App. 1993).

Louisiana	<b>Upheld under State Constitution.</b> <i>State v. Jackson</i> , 764 So.2d 64 (La. 2000), overruling <i>State v. Church</i> , 538 So.2d 993 (La. 1989). See also <i>State v. Parns</i> , 523 So.2d 677 (La. 1988).
Maine	<b>Upheld under Federal Constitution.</b> <i>State v. Leighton</i> , 551 A.2d 116 (Me. 1988); <i>State v. McMahon</i> , 557 A.2d 1324 (Me. 1989); <i>State v. Babcock</i> , 559 A.2d 337 (Me. 1989). Avoiding a checkpoint is grounds for an investigative stop. <i>State v. D'Angelo</i> , 605 A.2d 68 (Me. 1992).
Maryland	<b>Upheld under State and Federal Constitution.</b> <i>Little v. State</i> , 479 A.2d 903 (Md. 1984).
Massachusetts	<b>Upheld under State and Federal Constitution.</b> <i>Commonwealth v. Shields</i> , 521 N.E.2d 987 (Mass. 1988); <i>Commonwealth v. Cameron</i> , 545 N.E.2d 619 (Mass. App. Ct. 1989). In <i>Commonwealth v. Anderson</i> , 547 N.E.2d 1134 (Mass. 1989), the court invalidated a checkpoint for failure to follow guidelines. However, checkpoints to find contraband drugs is illegal. <i>Commonwealth v. Rodriguez</i> , 722 N.E.2d 429 (Mass. 2000).
Michigan	<b>Illegal under State Constitution.</b> <i>Sitz v. Mich. Dept. of State Police</i> , 506 N.W.2d 209 (Mich. 1993). This case was remanded to the Michigan Supreme Court for a decision with regard to the Michigan constitution, Const. 1963, Art. 1, Sec. 11, after the U.S. Supreme Court held in <i>Michigan Department of State Police v. Sitz</i> , 496 U.S. 444 (1990), that sobriety checkpoints do not offend the U.S. Constitution.
Minnesota	<b>Illegal under State Constitution.</b> <i>Ascher v. Comm. of Public Safety</i> , 519 N.W.2d 183 (Minn. 1994); <i>Gray v. Comm. of Public Safety</i> , 519 N.W.2d 187 (Minn. 1994). The courts require evidence of an advance in arrest rates before approving checkpoints under the state constitution.
Mississippi	<b>Upheld under Federal Constitution.</b> <i>Miller v. State</i> , 373 So.2d 1004 (Miss. 1979).
Missouri	<b>Upheld under State and Federal Constitution.</b> <i>State v. Welch</i> , 755 S.W.2d 624 (Mo. App. 1988); <i>State v. Payne</i> , 759 S.W.2d 252 (Mo. App. 1988); <i>State v. Damask</i> , 936 S.W.2d 565 (Mo. 1996); <i>State v. Heyer</i> , 692 S.W.2d 401 (Mo. App. 1998). <i>State v. Canton</i> , 775 S.W.2d 352 (Mo. App. 1989), requires written procedures for checkpoints. Checkpoint avoidance justifies investigatory stop. <i>Oughton v. Director of Revenue</i> , 916 S.W.2d 462 (Mo. App. E.D. 1996).
Montana	<b>Authorized by statute.</b> Checkpoints have been conducted under the authority of a statute permitting safety spot checks. MONT. CODE ANN. 46-5-501 et seq. This section does not specifically refer to sobriety checkpoints.
Nebraska	<b>Upheld under state law.</b> <i>State v. McCleery</i> , 560 N.W.2d 789 (Neb. 1997). Checkpoint avoidance does not justify an investigatory stop.
Nevada	<b>Authorized by statute.</b> NEV. REV. STAT. 484.359 and 484.3591.
New Hampshire	<b>Judicially approved checkpoints authorized by statute.</b> N.H. REV. STAT. ANN. 265:1-a. <i>Opinion of the Justices</i> , 509 A.2d 744 N.H. 1986). <i>State v. Koppel</i> , 499 A.2d 977 (N.H. 1985) held checkpoints not permitted under state constitution unless authorized by a judge. To justify suspicionless stops, the state must show that its objective cannot be met using less intrusive means. The court found no evidence that checkpoints are greater deterrents than publicized roving patrols.

Summary of Decisions Concerning Constitutionality of Sobriety Checkpoints

- New Jersey           **Upheld under State and Federal Constitution.** *State v. Mazurek*, 567 A.2d 277 (N.J. Super. A.D. 1989); *State v. DeCamera*, 568 A.2d 86 (N.J. Super. A.D. 1989); *State v. Moskal*, 586 A.2d 845 (N.J. Super. A.D. 1991); *State v. Kirk*, 493 A.2d 1271 (N.J. Super. A.D. 1985). *State v. Barcia*, 549 A.2d 491 (N.J. Super. L. 1988), held a checkpoint can violate the Commerce Clause of the U.S. Constitution if it impedes interstate commerce. A DUI arrest may result from a vehicle inspection check under *State v. Kadelak*, 655 A.2d 461 (N.J. Super. A.D. 1995).
- New Mexico           **Upheld under State and Federal Constitution.** *City of Las Cruces v. Betancourt*, 735 P.2d 1161 (N.M. App. 1987); *State v. Bates*, 902 P.2d 1060 (N.M. App. 1995); *State v. Madalena*, 908 P.2d 756 (N.M. App. 1995).
- New York               **Upheld under Federal Constitution.** *People v. Scott*, 473 N.E.2d 1 (N.Y. 1984). Turning into a parking lot to evade a checkpoint is cause for an investigatory stop. *People v. Chaffee*, 590 N.Y.S.2d 625 (A.D. 4 Dist. 1992); but turning off a highway before reaching a checkpoint on to another road is not cause for a stop. *People v. Rocket*, 594 N.Y.S.2d 568 (Just. Ct. 1992). New York does not require written guidelines for a checkpoint. *People v. Collura*, 610 N.Y.S.2d (N.Y. CityCrim. Ct. 1994).
- North Carolina       **Authorized by statute.** N.C. Gen. Stat. 20-16.3A. *State v. Barnes*, 472 S.E.2d 784 (N.C. App. 1996). *State v. Johnson*, 446 S.E.2d 135 (N.C. App. 1994) held entering a parking lot to avoid a checkpoint justified a stop, but executing a legal left turn immediately preceding a checkpoint does not, absent anything else, justify a stop. *State v. Foremen*, 515 S.E.2d 488 (N.C. App. 1999). *Foremen* is under review by the N.C. supreme Court, 350 N.C. 840 (1999).
- North Dakota         **Upheld under State and Federal Constitution.** *City of Bismark v. Uhden*, 513 N.W.2d 373 (N.D. 1994). See also *State v. Wetzel*, 456 N.W.2d 115 (N.D. 1990) which upholds safety inspection checkpoints and *State v. Everson*, 474 N.W.2d 695 (N.D. 1991) that upholds checkpoints to investigate drug trafficking.
- Ohio                   **Upheld under State and Federal Constitution.** *State v. Bauer*, 651 N.E. 2d 46 (Ohio App. 10 Dist. 1994) See also *State v. Goines*, 474 N.E.2d 1219 (Ohio App. 1984).
- Oklahoma             **Upheld under State and Federal Constitution.** *Geopfert v. State Ex Re. DPS*, 884 P.2d 1218 (Okla. App. 1994).
- Oregon                 **Illegal under State Constitution.** *State v. Boyanovsky* 743 P.2d 711 (Or. 1987); *Nelson v. Lane Co.*, 743 P.2d 692 (Or. 1987), required legislative approval of checkpoints.
- Pennsylvania         **Upheld under State and Federal Constitution.** *Commonwealth v. Tarbert*, 535 A.2d 1035 (Pa. 1987); *Commonwealth v. Fioretti*, 538 A.2d 570 (Pa. Super. 1988); *Commonwealth v. Myrtetus*, 580 A.2d 42 (Pa. Super. 1990). Under *Commonwealth v. Pacek*, 691 A.2d 466 (Pa. Super. 1997), a checkpoint does not have to provide a legal means of avoidance. Checkpoint must be located in area where DUI is prevalent. *Commonwealth v. Blee*, 695 A.2d 802 (Pa. Super. 1997). Legal U-turn in advance of checkpoint does not justify a stop. *Commonwealth v. Scavello*, 703 A.2d 36 (PA. Super. 1997).
- Rhode Island         **Illegal under State Constitution.** *Primental v. Rhode Island*, 561 A.2d 1348 (R.I. 1989).
- South Carolina       **No state authority.** Checkpoints are conducted.

South Dakota	<b>Upheld under State and Federal Constitution.</b> In <i>State v. Claussen</i> , 522 N.W.2d 196 (S.C. 1994), checkpoint was upheld to find underage drinkers where roadblock was conducted close to a party. Avoidance of checkpoint justifies a stop. <i>State v. Thill</i> , 474 N.W.2d 86 (S.D. 1991).
Tennessee	<b>Upheld under State and Federal Constitution.</b> <i>State v. Downey</i> , 945 S.W.2d 102 (Tenn. 1997) held that properly conducted checkpoints do not violate the state constitution, but that the checkpoint at issue was not properly conducted because officer discretion was not limited. See also <i>State v. Manuel</i> , ___ S.W.2d ___ (Tenn. 1998), 1988 WL 123988 (Tenn. Crim. App.) Checkpoint avoidance may justify investigatory stop but a legal U-turn does not necessarily justify a stop. <i>State v. Binion</i> , 900 S.W. 2d 702 (Tenn. Crim. App. 1994). Combining DWI and drug interdiction checkpoints may be illegal under both the State and Federal Constitution. <i>U.S. v. Huguenin</i> , 154 F.3d 547 (6th Cir. 1998) and <i>State v. Walker</i> , 1998 WL 608220, ___S.W.2d ___ (Tenn. Crim. App. 1998).
Texas	<b>Illegal under Texas' interpretation of Federal Constitution.</b> <i>State v. Holt</i> , 887 S.W. 2d 16 (Tex. Cr. App. 1994) Because the checkpoint the U.S. Supreme Court upheld in <i>Michigan v. Sitz</i> , 496 U.S. 444 (1990), was legislatively authorized, the Texas court held that absent such authorization a checkpoint is illegal under the U.S. Constitution. There is no specific language in <i>Sitz</i> requiring such an interpretation.
Utah	<b>Authorized by statute.</b> UTAH CODE ANN. 77-23-101 et seq. This statute requires approval of a magistrate. See <i>State v. Sims</i> , 808 P.2d 141 (Utah App. 1991). Avoidance of a checkpoint does not justify a stop. <i>State v. Talbot</i> , 792 P.2d. 489 (Utah App. 1990). For a case holding that a checkpoint can provide too much discretion to police, see <i>State v. DeBooy</i> , 996 P.2d 546 (Utah 2000).
Vermont	<b>Upheld under State and Federal Constitution.</b> <i>State v. Martin</i> , 496 A.2d 442 (Vt. 1985) and <i>State v. Record</i> , 548 A.2d 422 (Vt. 1988).
Virginia	<b>Upheld under State and Federal Constitution.</b> <i>Lowe v. Commonwealth</i> , 337 S.E.2d 273 (Va. 1985), cert. den., 475 U.S. 1084 (1986). U-turn to avoid a checkpoint justifies a stop, <i>Commonwealth v. Eaves</i> , 408 S.E. 2d 925 (Va. App. 1991); <i>Stroud v. Commonwealth</i> , 370 S.E. 2d 721 (Va. App. 1988); <i>Brown, V. Commonwealth</i> , 440 S.E, 2d 619 (Va. App. 1994). However, a legal right turn in advance of a checkpoint was found not to justify a stop in <i>Murphy v. Commonwealth</i> , 384 S.E. 2d 125 (Va. App. 1989).
Washington	<b>Illegal under State constitution.</b> <i>City of Seattle v. Mesiani</i> , 755 P.2d 775 (Wa. 1988), required legislative authority for checkpoints.
West Virginia	<b>Upheld under State and Federal Constitution.</b> <i>Carte v. Cline</i> , 460 S.E.2d 48 (W.Va. 1995).
Wisconsin	<b>Prohibited by statute.</b> WIS. STAT. ANN. 349.02(2)(a).
Wyoming	<b>Prohibited by interpretation of the roadblock statute.</b> WYO. STAT. ANN. 7-17-101 et seq.

**Sobriety Checkpoints Annotated Bibliography**  
as of March 2001

Jones, R.K. and Joscelyn, K.B. 1978. Alcohol and highway safety 1978: a review of the state of knowledge. Washington, DC: National Highway Traffic Safety Administration.

This comprehensive report notes the estimates of the actual risk of being arrested for alcohol-impaired driving vary from one in 200 to one in 2,000.

Lacey, J.H.; Jones, R.K.; and Fell, J.C. 1995. A comparison of blitz versus continuous statewide checkpoints as a deterrent to impaired driving. *Proceedings of the 13th International Conference on Alcohol, Drugs, and Traffic Safety* (eds. Kloeden, C.N. and McLean, A.J.), 2:845-48. Adelaide, Australia: NHMRC Road Accident Research Unit, University of Adelaide.

Survey research in New Mexico found that the number of respondents in New Mexico who believed it was almost certain or very likely that a drunk driver would be stopped by police rose during a study period during which checkpoints were conducted from 24 percent for females to 27 percent and finally to 34 percent. For males, the values were 24 percent, 28 percent and 20 percent. In New Mexico, following an aggressive checkpoint program, 60 percent of respondents in a series of telephone surveys reported having heard of the program.

Preliminary results of checkpoint programs in New Mexico and Tennessee indicate that both were associated with a reduction in alcohol-related fatal crashes. The reduction was 3.7 per month, a 21 percent reduction in New Mexico and 1.8 per month, an 8 percent reduction in Tennessee.

Respondents to a written survey on sobriety checkpoints in Tennessee overwhelmingly approved the use of checkpoints. The approval rating was 88 percent in the first wave of the survey and almost 92 percent in the second.

Lacey, J.H.; Jones, R.K.; and Smith, R.G. 1999. An evaluation of checkpoint Tennessee: Tennessee's statewide sobriety checkpoint program. Washington, DC: National Highway Traffic Safety Administration.

This study evaluates a program that involved checkpoints held every weekend between April 1994 and March 1995 in Tennessee. A 20 percent decline in fatal crashes involving at least one driver with a BAC of 0.10 or greater. An estimated nine fatal crashes a month were avoided during the program. Nighttime single-vehicle crashes decreased almost 6 percent. Comparison states' (Alabama, Georgia, Kentucky, Louisiana, and Mississippi) data were analyzed to assure the effect in Tennessee was related to the checkpoint program and not part of a general trend. The comparison states did not show declines in fatalities involving drivers with high BACs during the relevant period.

Lacey, J.H.; Stewart, J.R.; Marchetti, L.M.; Popkin, C.; and Murphy, P.V. 1986. Enforcement and public information strategies for DWI general deterrence: arrest drunk driving: the Clearwater and Largo, Florida experience. Chapel Hill, NC: University of North Carolina Highway Safety Research Center.

Similar results were obtained under a checkpoint program in Clearwater and Largo, Florida which experienced a 12 percent reduction in alcohol-related crashes following checkpoint operations.

Levy, D.; Shea, D.; and Asch, P. 1989. Traffic safety effects of sobriety checkpoints and other local DWI programs in New Jersey. *American Journal of Public Health* 79:291-93.

In New Jersey checkpoints with educational programs were associated with a drop of 10 to 15 percent in single-vehicle nighttime crashes (a commonly used measure of alcohol-impaired driving). This effect lasted for years.



Mercer, G.W. 1985. The relationships among driving while impaired charges, policy drinking-driving roadcheck activity, media coverage and alcohol-related casualty traffic accidents. *Accident Analysis and Prevention* 17:467-74.

This study in British Columbia demonstrated the value of highly visible, well publicized sobriety checkpoints in deterring alcohol-impaired driving. Alcohol-related crashes declined with increased checkpoint activity and publicity. The authors concluded that arrest rates alone did not demonstrate any deterrent effect.

Miller, T.R.; Galbraith, M.S.; and Lawrence, B.A. 1998. Costs and benefits of a community sobriety checkpoint program. *Journal of Studies on Alcohol* 59:462-68.

The cost and the estimated financial benefits from a hypothetical community sobriety checkpoint program were compared. A review of the literature concerning sobriety checkpoints indicates that a well funded checkpoint program conducting 159 checkpoints per year can be expected to reduce alcohol-related crashes by approximately 15 percent. Benefits of such a program were calculated using 1993 alcohol-involved crash incidence from the National Highway Traffic Safety Administration. Costs were updated from published studies. The estimated annual savings to a hypothetical community of 100,000 licensed drivers were \$7.9 million (\$3.1 million for fatalities avoided, \$4.5 million for non-fatal injuries avoided, and \$0.3 million for property damage avoided). For every \$1 spent on a sobriety checkpoint program, a community can expect to save more than \$6.

Presidential Commission on Drunk Driving. 1983. Final report. Washington, DC.

The Commission recommended the use of sobriety checkpoints to raise the actual and perceived risk of arrest.

Ross, H.L. 1984. *Detering the Drinking Driver: Legal Policy and Social Control*, rev. ed. Lexington, MA: Lexington Books, D.C. Heath and Co.

Sanctions that are swift, certain, and highly visible are most effective in creating general deterrence. Occasional enforcement blitzes and severe sanctions that are infrequently imposed have little long term effect. The public's perception of the likelihood of being caught driving while impaired is the most important element in deterrence. Where that perception of the likelihood of apprehension is low, enforcement efforts have little long term effect.

Ross, H.L. 1992. The deterrent capability of sobriety checkpoints: summary of the American literature. Washington, DC: National Highway Traffic Safety Administration.

This paper concluded, "[B]oth U.S. and foreign experiences support the proposition that sobriety checkpoints are capable of reducing the extent of drunk driving and injuries on the highways. It is no longer necessary to ask whether sobriety checkpoints can deter."

Stuster, J.W. and Blowers, P.A. 1995. Experimental evaluation of sobriety checkpoint programs. Washington, DC: National Highway Traffic Safety Administration.

This study compared the effectiveness of checkpoint programs to special DWI enforcement patrols in similar, but geographically disperse communities in California. Four communities undertook checkpoint programs which varied according to staffing levels (three to five officers and eight to twelve). Mobility was varied as well. Some remained in one location throughout the evening while others moved twice in an evening. A fifth community undertook a rigorous program of aggressive roving patrols focused on DWI enforcement. The same amount was spent on the roving patrols as on the checkpoints. A sixth community did no special DWI enforcement during the project.

Crash, arrest, and BAC data were obtained, and survey data were collected on public awareness of the programs and perceived risk of arrest. The proportion of alcohol-involved crashes in the four checkpoint communities declined by 43, 32, 19, and 16 percent, compared to a state-wide decline of 8 percent. The proportion in the roving patrol community was 5 percent. Alcohol-involved crashes declined significantly in the checkpoint sites, and did not change significantly at the comparison site. The checkpoint communities' decline was more than 3 times greater than the statewide decline.

Voas, R.B.; Rhodenizer, A.E.; and Lynn, C. 1985. Evaluation of Charlottesville checkpoint operation (final report). Washington, DC: National Highway Traffic Safety Administration.

This was a comprehensive evaluation of a year-long sobriety checkpoint program in Charlottesville, Virginia. Researchers evaluated checkpoint effectiveness by looking at relevant crash rates, arrest rates, and conducting surveys to determine public awareness and acceptance of the program. The checkpoint program was found to have been highly successful, resulting in a 13 percent reduction in alcohol-related crashes. Police achieved a higher arrest rate at the checkpoint than from patrols and the number of officer hours per arrest at checkpoints (6.5) was 20 percent lower than for patrols (7.9). The increased efficiency is achieved at a cost of a minimal intrusion on individual's time. Drivers typically come in contact with police at checkpoints for significantly less than a minute.

The proportion of young drivers arrested at checkpoints is more reflective of their proportion in crashes than the proportion arrested through other enforcement efforts.

Another finding was that 85 percent of the alcohol servers interviewed in the study reported hearing customers discussing checkpoints. Respondents among the general public were separated into two groups based on their answers to questions about their drinking and driving habits: those who were "at risk" for alcohol-impaired driving and those who were "not at risk." Of the "at risk" respondents, 87 percent either approved or strongly approved of the checkpoint operations. In Blacksburg, Virginia, where checkpoints were not being conducted, 78 percent of "at risk" respondents either approved or strongly approved of checkpoints. Of the "not at risk" respondents, 90 percent in Charlottesville and 88 percent in Blacksburg either approved or strongly approved of checkpoints.

Wells, J.K.; Preusser, D.F.; and Williams, A.F. 1992. Enforcing alcohol-impaired driving and seat belt use laws, Binghamton, New York. *Journal of Safety Research* 23:63-71.

A well publicized checkpoint program in Binghamton, New York, was associated with a reduction of 39 percent in the number of drivers who had been drinking stopped at checkpoints from fall 1988 to fall 1989. This was sustained through fall 1990. Researchers estimated that the program resulted in a 24 percent reduction in late-night crashes in the months when checkpoints were held.

Williams, A.F. and Lund, A.K. 1984. Deterrent effects of roadblocks on drinking and driving. *Traffic Safety Evaluation Research Review* 3:7-18. Washington, DC: National Highway Traffic Safety Administration.

Sobriety checkpoints and accompanying publicity were found effective in increasing the public's awareness of the risk of being apprehended for alcohol-related driving offenses. A visible, well publicized checkpoint program in Montgomery County, Maryland was compared with a serious enforcement effort using patrols in nearby Fairfax County, Virginia. Phone surveys showed that the public perceived that the risk of being apprehended driving while impaired was significantly higher where checkpoints were conducted than where they were not. This was true even though the actual risk of apprehension was greater in Fairfax County. Researchers found widespread public approval of sobriety checkpoints in Montgomery County, Maryland and in Delaware, which were using checkpoints as well as in Fairfax County, Virginia and Maryland's Eastern Shore, comparison communities not using them.

Williams, A.F.; Wells, J.K.; and Foss, R.D. 1995. The North Carolina Governor's Highway Safety Initiative: initial results from "Booze It and Lose It." *Proceedings of the 13th International Conference on Alcohol, Drugs, and Traffic Safety*, 1:347-51. Adelaide, Australia: NHMRC Road Accident Research Unit, University of Adelaide.

An early evaluation of a checkpoint program conducted as a part of the North Carolina Governor's Highway Safety Initiative involved measuring the BACs of drivers passing through checkpoints before and after the demonstration program which was accompanied by widespread publicity. The Initiative is a multiyear enforcement program aimed at increasing safety belt usage and deterring alcohol-impaired driving. The preprogram checkpoint data indicated that 2.4 percent of drivers had BACs at or above the 0.08 percent per se limit in North Carolina. In the demonstration areas, the percentage of drivers with BACs at or above 0.08 percent declined from 1.98 percent to 0.90 percent (Williams, et al., 1995). Before and after the North Carolina program telephone surveys were conducted. After the program, 86 percent of

respondents had heard about recent enforcement efforts for drunk driving laws, up from 58 percent prior to the program; the percentage of those thinking drunk driving laws were being very strictly enforced rose from 28 to 37 percent; the percentage of those who thought the likelihood of being caught if driving drunk in the past month increased from 38 to 61 percent.

The checkpoint program also achieved law enforcement benefits beyond apprehension of alcohol-impaired driving. During a three week period of enhanced checkpoint activity in late 1994, 53 fugitives were arrested, 636 drug-related charges were brought, and 55 stolen vehicles were recovered.

**Passive Alcohol Sensors Annotated Bibliography**  
as of March 2001

Cammissa, M.X.; Ferguson, S.A.; and Wells, J.K. 1996. Laboratory evaluation of PAS III sensor with new pump design. Arlington, VA: Insurance Institute for Highway Safety.

The PAS III passive alcohol sensor was evaluated under laboratory conditions to determine its potential effectiveness as a screening device to assist law enforcement officers in identifying alcohol-impaired drivers. Results indicated the PAS III can identify 95 percent of drivers with 0.10 percent BACs when held at a distance of 5 inches and keep misidentification of low BAC drivers to a minimum. Compared with a previous sensor design, the PAS III was found to have improved performance at test distances greater than 5 inches. The evaluation also demonstrated the PAS III's capability to detect drivers at lower BAC thresholds such as 0.08 percent.

Farmer, C.M.; Wells, J.K.; Ferguson, S.A.; and Voas, R.B. 1998. Field evaluation of the PAS III passive alcohol sensor. *Journal of Crash Prevention and Injury Control* 1:55-61.

Data from a 1996 nationwide survey, in which 5,392 drivers were evaluated for alcohol using both PAS III and evidential breath test devices, have allowed the determination of appropriate criteria at various BACs for detecting impaired drivers in the field. Using the appropriate criteria, the PAS III can identify about 75 percent of drivers with BACs at or above 0.10 percent and 70 percent at or above 0.08 percent. This is a vast improvement over the 40-50 percent detection rate currently achieved by police officers at checkpoints not using sensors.

Ferguson, S.A. 1995. Use of passive sensors for alcohol-impaired driving enforcement. Presented at Transportation Research Board 74th Annual Meeting, Washington, DC. Arlington, VA: Insurance Institute for Highway Safety.

The author reviewed research on passive sensors, concluding that passive sensors improve officers' ability to detect impaired drivers and identify nonimpaired drivers more quickly than they otherwise would.

Ferguson, S.A.; Wells, J.K.; and Lund, A.K. 1995. The role of passive alcohol sensors in detecting alcohol-impaired drivers at sobriety checkpoints. *Alcohol, Drugs, and Driving* 11:23-30.

Police officers using standard checkpoint procedures identified 26 percent of drivers with 0.05-0.10 percent BACs and 55 percent of drivers with BACs of 0.10 percent or greater. When officers used passive sensors, these detection rates increased to 39 percent and 71 percent, respectively. The authors noted that research on checkpoints conclusively demonstrates their value in creating general deterrence and concluded that their value would be further increased if passive sensors were used more widely at checkpoints.

Fields, M. and Hricko, A.R. 1986. Passive alcohol sensors: constitutional implications. *The Prosecutor* 20:45-52.

Drawing analogies to appearance/demeanor cases, the plain view doctrine, and laboratory testing of passive sensors indicating their reliability as screening devices for the presence of alcohol, the authors concluded that passive sensor use will not be held unconstitutional.

Fiorentino, D. 1997. A laboratory study of passive alcohol sensors. *Proceedings of the 14th International Conference on Alcohol, Drugs, and Traffic Safety* (ed. Mercier-Guyon, C.), 539-45. Annecy, France: Centre d'Etudes et de Recherches en Médecine du Trafic (CERMT).

Three PAS instruments were examined with 48 subjects. The mean BAC, as measured with an Intoxilyzer 5000 30 minutes after each subject's last drink was 0.08 percent. PAS readings were obtained before alcohol was ingested, at peak BAC, and at nine post-peak times. One instrument allowed sampling only when positioned 5 to 7.5 inches from the subject's mouth. The other instruments permit variable distances and were tested at 6 and 8 inches. Data were examined with BAC criteria of 0.00 percent, 0.04 percent, and 0.08 percent. There were no false positives: when no alcohol was present, the probability of a positive

reading was zero. PAS values were lower and more variable than Intoxilyzer readings. The author concluded that the data support use of a PAS in conjunction with field sobriety tests and preliminary breath test instruments.

Foss, R.D.; Voas, R.B.; and Beirness, D.J. 1993. Using a passive alcohol sensor to detect legally intoxicated drivers. *American Journal of Public Health* 83:556-60.

A roadside survey of 1,181 late-night drivers in Minnesota was conducted using volunteers. Breath measurements were taken with both a passive sensor and an evidentiary quality portable breath test device. BAC estimations made using the passive sensor correlated very strongly with the evidentiary device.

Jones, I.S. and Lund, A.K. 1986. Detection of impaired drivers with a passive alcohol sensor. *Journal of Police Science and Administration* 14:153-60.

In October and November 1984, passive sensors were used at checkpoints in Charlottesville, VA. Police working with sensors correctly identified 80 percent more drivers with BACs greater than 0.05 percent than they did at similar checkpoints working without sensors. The sensors reduced by more than 50 percent the number of drivers with 0.03–0.04 percent BACs who were detained unnecessarily for roadside investigation. Officers who used sensors also detained 50 percent fewer drivers with low BACs (0.00–0.019 percent) than those working without sensors.

Kiger, S.M.; Lestina, D.C.; and Lund, A.K. 1993. Passive alcohol sensors in law enforcement screening for alcohol-impaired drivers. *Alcohol, Drugs, and Driving* 9:7-18.

This study evaluated passive sensor use by police on routine patrol. Sixteen police officers in Columbus, OH, participated in a study in which passive sensors were used on alternate nights. On nights with the sensors, the number of drivers with BACs of 0.10 percent or greater detected by the officers increased from 69 to 77 percent. When combined with other field studies, results indicated a consistent pattern of increase in the detection of alcohol-impaired drivers when patrol officers used passive sensors in routine traffic stops. For the group of drivers with 0.05–0.0999 percent BACs, 37 percent encountered on nights with the sensor were arrested for DUI versus 4 percent when sensors were not used. This sharp increase in detection of drivers with BACs in this range suggests the use of passive sensors may be even more important in states that have lowered their per se BAC thresholds from 0.10 to 0.08 percent and in enforcement of zero tolerance laws for underage drivers.

Leaf, W.A. and Preusser, D.F. 1996. Effectiveness of passive alcohol sensors (DOT HS-808-381). Washington, DC: National Highway Traffic Safety Administration.

This study evaluated the effectiveness of three passive sensors for youth alcohol enforcement (zero tolerance laws applicable to drivers younger than 21). Overall judgment by the officers and the three municipal police departments participating were positive, but there were differences between situations and devices. Few of the sensor's uses led to alcohol-related arrests, and the underage liquor law and DUI data did not show changes over the test period compared to preceding periods.

Lestina, D.C. and Lund, A.K. 1992. Laboratory evaluation of two passive alcohol sensors. *Journal of Studies on Alcohol* 53:328-34.

The National Patent Analytical Systems (NPAS) passive alcohol sensor and the Life-Loc PBA 2000 were evaluated in a laboratory environment to establish appropriate threshold measurements that indicate probable alcohol impairment. Both sensors were able to identify alcohol in exhaled breath with sufficient accuracy to identify people with high BACs. The accuracy of both sensors was related to the distance from the subject's mouth. Under ideal conditions, the authors estimated the Life-Loc could be expected to correctly detect 80 percent of drivers with 0.10 percent BACs (99 percent with 0.15 percent BACs) yet incorrectly identify only about one in eight drivers with 0.02 percent BACs as being impaired. The NPAS could be expected to correctly detect about 75 percent of drivers with 0.10 percent BACs (97 percent with 0.15 percent BACs) yet incorrectly identifying one in five drivers with 0.02 percent BACs as impaired.

Lund, A.K. and Jones, I.S. 1987. Detection of impaired drivers with a passive alcohol sensor. *Proceedings of the 10th International Conference on Alcohol, Drugs, and Traffic Safety*, 379-82. Amsterdam, the Netherlands: Elsevier Science Publishers B.V.

The authors examined the impaired driver detection rates with and without passive sensors of officers in San Diego, CA and Chattanooga, TN working special DUI patrol. Special patrols use officers dedicated exclusively to DUI enforcement, and officers selected for special patrols typically have more extensive experience and training in DUI detection than other officers. Results indicated passive sensors improve detection rates of drivers with high BACs, but the improvements were significantly less than those reported for officers working sobriety checkpoints. The authors concluded that passive sensors provide greater benefits at checkpoints than on patrol because patrol officers have greater opportunities to observe driving behavior that is indicative of alcohol-impairment than do officers working checkpoints.

Manak, J.P. 1986. Constitutional aspects of the use of passive alcohol screening devices as law enforcement tools for DWI enforcement. *The Prosecutor* 19(3).

The author focused on the operational aspects of passive sensors as well as legal issues raised by their use. He concluded that passive sensors use will be upheld by the courts.

Moskowitz, H.A.; Burns, M.M.; and Ferguson, S.A. 1999. Police officers' detection of breath odors from alcohol ingestion. *Accident Analysis and Prevention* 31:175-80.

Under optimum laboratory conditions, 20 experienced police officers were asked to detect the odor of alcohol from 14 subjects whose blood alcohol concentrations (BACs) ranged from zero to 0.13. Over a 4 hour period, each officer was given 24 opportunities to smell the breath of the subjects, sniffing through a 6 inch tube through which the subjects blew. The subjects were behind screens to avoid officers' picking up cues other than odor. Under these optimum conditions, the odor of alcohol was detected in only two-thirds of the BACs below 0.08. At BACs of 0.08 and higher, 85 percent of the time officers detected alcohol. Detection rates declined significantly after the subjects ate. Officer reports of the strength of the odor was unrelated to BAC. Estimates of BAC by officers was not greater than would have been expected from random guesses.

Voas, R.B. and Layfield, W.A. 1983. Creating general deterrence: can passive sensors help? *The Police Chief* 50:56-61.

The authors reviewed officer experience with passive sensors and noted officer recommendations for improvement in sensor design. The authors concluded that if all drivers legally stopped could be screened for alcohol use with a passive sensor, the general deterrent value of enforcement efforts would be significantly increased.

Voas, R.B.; Rhodenizer, A.E.; and Lynn, C. 1985. Evaluation of Charlottesville checkpoint operation: final report (DOT HS-806-989). Washington, DC: National Highway Traffic Safety Administration.

This report is a comprehensive analysis of the effectiveness of a major checkpoint initiative in Charlottesville, VA, which involved 94 checkpoints between December 30, 1983 and December 31, 1984. The authors reported that from January through August 1984, officers worked without passive sensors; from September through November, they used passive sensors. Officers using sensors arrested 2.5 times more alcohol-impaired drivers than were arrested without sensors.

Wells, J.K.; Greene, M.A.; Foss, R.D.; Ferguson, S.A.; and Williams, A.F. 1997. Drinking drivers missed at sobriety checkpoints. *Journal of Studies on Alcohol* 58:513-17.

Data on the BACs of 9,000 drivers passed through 156 checkpoints held in 15 North Carolina counties in 1994. More than 50 percent of drivers with BACs in excess of 0.08 percent were not detained by officers. The authors found that not all drinking drivers had an equal chance of being detected. Women were missed more often than men, young drivers were missed more often than older drivers, and solo drivers were more likely to be missed than those with passengers. The authors reviewed research on passive sensors and concluded they very likely would have improved the detection rate of impaired drivers had they been used.