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Combating Impaired Driving in an Era of Diminished Resources and Shifting Priorities

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Combating Impaired Driving in an Era of Diminished Resources and Shifting Priorities

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FOREWORD

This circular reports on a workshop held at the National Academy of Sciences' Beckman Center in Irvine, California, on August 20-21, 1996. Representatives from federal and state governments, advocacy groups, research institutes, universities, industry, and experts from other countries met to discuss the future of combating impaired driving in an era of diminished resources and shifting priorities. The circular is the third in a series of reports on workshops sponsored by the TRB Committee on Alcohol, Other Drugs, and Transportation. The workshop was cosponsored by the International Council on Alcohol Drugs and Traffic Safety and six associations and government agencies. Previous workshops were held in 1992 and 1994 and covered research needs in alcohol, drugs, and transportation and strategies for dealing with the persistent drinking driver. The committee believes that the discussion presented in this circular is timely and hopes that it will be useful to policy makers and practitioners as the future of the nation's program to combat impaired driving is debated and put into effect.

Barry M. Sweedler
Chairman
Committee on Alcohol, Other Drugs, and Transportation

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EXECUTIVE SUMMARY

In 1995 in the United States, for the first time in a decade, the percentage of alcohol-related fatalities did not decrease—they remained constant at 41 percent of all those killed in highway crashes. Since 1986, this percentage had steadily declined by a total of 21 percent—from 52 percent. The 17,274 alcohol-related deaths in 1995 represented an increase of 4 percent over the previous year. While this figure is down considerably from the 24,045 who died in alcohol-related crashes in 1986, the 1995 increase is troubling. At the same time there was a move to reduce spending and to allow the States much more latitude in dealing with many issues, including traffic safety.

To discuss these important issues, a workshop was held at the J. Erik Jonsson Woods Hole Center of the National Academy of Sciences in August 1996. The purpose of the workshop was to identify and discuss critical concerns, new approaches, and relevant research findings applicable to the topic of combating impaired driving in an era of diminished resources and shifting priorities. The resulting information would be useful to governments at all levels, safety advocates and private industry.

Participants at this workshop represented a diversity of views and perspectives, and there was no attempt to reach consensus among the participants. Several points were, however, widely held and merit special attention:

- There is an urgent need to raise the public's awareness and concern about the impaired driving problem;
- An adequate source of dedicated funding for safety programs is needed;
- Appropriate actions need to be taken at the federal, state, and local levels;
- Proven countermeasures need to be implemented and applied vigorously;
- Enforcement activities should be aggressively publicized in order to make them maximally effective;
- New technology in all areas can be used to improve safety and law enforcement effectiveness;
- Emerging concern about health care costs can be used to engender public concern and encourage the participation of the health care sector in combating impaired driving;
- A new management system should be considered for federal participation in state programs; and
- The implementation plan developed by the "Partners in Progress" process is an excellent framework for future action.

This report provides the group's discussion on each of these issues.

COMBATING IMPAIRED DRIVING IN AN ERA OF DIMINISHED RESOURCES AND SHIFTING PRIORITIES

The views summarized below were widely held and considered important by many participants in the workshop. These points do not, however, represent "consensus" findings or recommendations of all the participants and should not be construed as such. A summary of each of the points follows.

1) There is an urgent need to raise the public's awareness and concern about the impaired driving problem.

As Larry Ross put it, impaired driving has become a "middle-aged" issue. That is, the level of public awareness, concern, outrage, and willingness to act has leveled off and even decreased. (See Ross's paper in Appendix C4.) The decrease in impaired driving deaths in recent years has been gratifying, but at the same time seems to have led to social complacency. In addition, other social concerns, for example with other sorts of crime or with other drugs, have become more acute. The workshop participants agreed that there is a need to rekindle public concern about impaired driving in order to generate the kind of political and social will necessary to bring about the changes needed to regain momentum and make further progress.

The group discussed a variety of ways to accomplish this goal. They agreed that there was a need to remind the public on a continuing basis that the toll of impaired driving is still great—at least equal to, or even greater than, many of the social problems that generate concern currently. In addition to vividly showing the continued magnitude of the problem, efforts to increase awareness should personalize the problem—giving victims a human face. One method might be to publish weekly or monthly "body counts" of victims, highlighting different aspects of the problem each time. For example, the role of persistent offenders or young drivers or other contributing factors could be discussed, along with personal stories of victims. This strategy would require an ongoing relationship with media to ensure that the information gets appropriate prominence.

2) An adequate source of dedicated funding for safety programs is needed.

The general feeling was that in order to undertake the countermeasures and programs that are known to be effective, the states and local communities must have adequate and stable funding. Currently, about $128 million from NHTSA and $11 million from FHWA is dedicated in the federal 402 program for allocation to the states to fund highway safety programs. About 22 percent of these funds in 1995 were allocated to combating drinking and driving. An additional $25 million was also available through the 410 program and $8 million for youth incentive grants for those states that qualify. (See the paper by Shearouse in Appendix C1 for additional details.) The amount of money available each year is proposed by the President and authorized and appropriated by the Congress. The participants felt that other methods to fund highway safety, and particularly drinking and driving programs should be considered. One approach would be to obtain a set percentage of the highway trust fund each year. The figure of 2 percent was proposed. It was agreed that in the current climate, it would be difficult to achieve this goal. It will take a concerted, organized campaign by many groups concerned about this issue, during the reauthorization of the Intermodal Surface Transportation Efficiency Act of 1991, to be successful. Groups not usually involved in highway safety need to be brought in as partners in the campaign. Even if this goal could be achieved, additional funding for states and communities would still be required.

It was felt that perhaps a program to set aside funds for highway safety from a number of entities using highways or contributing to highway crashes could be considered. For example, if a very small percentage of money spent by the public for motor vehicle related expenses was combined and allocated to the states and local communities, the amount of money currently available for these programs could double or even triple. The sources could include 1/10 of 1 percent of every motor vehicle related insurance policy issued; 25 cents for every vehicle registered; $5 for every new and used vehicle sold; and one tenth of a cent for every gallon of fuel sold. Consideration could also be given to including 5 cents for every gallon of alcohol sold. If all industries were included and each was asked to provide an extremely small amount from each transaction, it might be acceptable to all.

3) Appropriate action needs to be taken at the federal, state, and local level.

Each level of government has an important role to play in reducing impaired driving. The federal government can provide leadership, information, incentives, and funding. Most strategies, however, are actually carried out at the state and local level. Especially in the current political climate, with less centralized government authority being exercised, state and local roles become important. Proven effective

legislative strategies need to passed and, in many cases, implemented at the state level. Similarly, many administrative strategies, such as improvements in driver records, have to be carried out by state agencies. Much implementation occurs at the local level, including enforcement of impaired driving and alcohol control laws.

The "Booze It & Lose It" program in North Carolina provides an example of appropriate action at each level. Funding and assistance provided by a national organization (in this case, the Insurance Institute for Highway Safety) were joined with federal 402 funds to operate the program, and the national organization also funded an evaluation. State government had passed the needed legislation and provided strong leadership. The program itself required the enthusiastic participation of dozens of local law enforcement agencies and local media for the effective implementation of the strategy. This coordinated effort was successful in decreasing the percentage of legally intoxicated drivers stopped at checkpoints from the fall of 1994 to the winter of 1995 from 1.98% to 0.09%. For additional information about North Carolina's program see Parker's paper in Appendix C5A. Papers by Ludwig and Anderson in Appendix C5 provide information on Ohio's and California's programs.

4) Proven countermeasures need to be implemented and applied vigorously.

Research has repeatedly shown that some legislative, policy, and enforcement countermeasures are effective in reducing impaired driving and the resulting traffic crashes. These countermeasures include:

- Implementation of age 21 as the minimum purchase age for alcohol;
- Zero tolerance for young drivers;
- Administrative license revocation;
- Reduction of the legal BAC to .08%; and
- Intensive and conspicuous enforcement programs, especially sobriety checkpoints.

These and other proven countermeasures must be applied more vigorously, and movements to oppose them or rescind them must be adamantly resisted. Continued research and evaluation should be carried out to identify other effective countermeasures and to refine and strengthen those that already have strong evidence of effectiveness.

Given the current climate of concern about the fiscal impact of government action, an emphasis should be placed on countermeasures that can be implemented at low cost. In addition, cost-benefit analyses should be carried out and publicized to demonstrate the economic advantages of countermeasures.

For a more detailed discussion of these countermeasures, see papers by Williams, Voas, and Simpson in Appendix C2, and by Hingson and others in Appendix C3A.

5) Enforcement activities should be aggressively publicized in order to make them maximally effective.

It has been well demonstrated in research and evaluation that the effects of enforcement efforts are magnified when these efforts are well publicized and conspicuous. The use of publicity can improve the cost effectiveness of enforcement by creating maximum deterrence with relatively small expenditures of resources. The use of media advocacy techniques, in which enforcement agencies and safety advocates take control of media coverage, for example, by creating media events, has been shown to be a very effective way of generating publicity for enforcement efforts. For more information on this topic, see the paper by Baker in Appendix C2C.

6) New technology in all areas can be used to improve safety and law enforcement effectiveness.

It is difficult to predict what advances will occur in technology that can be applied to impaired driving. Some of the likely applications include:

- **Improved on-board breath testers or performance tests that prevent an impaired driver from operating a vehicle**. These could be installed on all vehicles or only on vehicles belonging to offenders. Research shows current devices to be effective only while they are installed, therefore long-range installation should be advocated.
- **Improved technologies to enhance the efficiency of law enforcement**. These could include computers to provide better information about the driving records of apprehended impaired drivers so that appropriate penalties can be applied; improved passive and preliminary breath test devices; and improved mobile breath testing equipment to speed the arrest process.
- **Intelligent vehicle systems that improve safety even when the driver is impaired**. Anti-collision devices or devices that reduce the dangers of inattentive driving could prevent crashes when the driver is impaired.

7) The emerging concern about health care costs can be used to engender public concern and encourage the

participation of the health care sector in combating impaired driving.

Crashes related to impaired driving result in huge health care expenditures. Preventing these crashes could reduce health care costs. These savings can serve as an additional rallying point for public concern and an incentive for taking effective policy and legal action to prevent impaired driving. They should certainly be included in cost-benefit analyses of prevention strategies.

The health care community has traditionally not been as active in the impaired driving area as some other sectors of society. The issue of health care costs can serve to promote greater involvement of health insurance companies, health maintenance organizations, professional organizations of health care professionals and others in the health care community.

8) A new management system should be considered for federal participation in state programs.

Over the years, since the 1966 Highway Safety Act, states have received funds for highway safety programs based on a grant formula that takes into consideration population and road mileage. The program is administered primarily by NHTSA with some involvement by the Federal Highway Administration (FHWA). It was originally intended to provide seed money to the States and to leverage other funds for highway safety programs. The program was generally project-based, requiring NHTSA approval for each project, and covered 9 areas, one being alcohol and drugs. In 1995, the 402 program was funded by $128 million from NHTSA and $11 million from FHWA.

With changes in the environment at the federal and state levels, a new pilot program was introduced in 1994 that was more performance-based. States were offered the opportunity to participate in a new system that allowed for much more flexibility. Each state would set its own goals, using the federal priority areas, but would not have to receive federal approval for each project.

The federal role would change from approving each project to working with the states to provide technical assistance and support in planning and evaluation. The participating states would still be required to prepare annual work plans, but the plans would be for their own use in meeting their goals. States would have to report annually on how successful they were in meeting the goals they established. States are still required to pass 40 percent of the funds to local programs. Local governments and other groups, such as the business community, have become more involved and some states are requesting communities to set their own goals. The cost of injuries, not just decreasing fatalities, has become important. This has led to more innovation. The role of accurate data has become more important in determining success.

In the first year, 16 states participated in the program; 44 states and territories are now in the pilot program. See Derby's paper in Appendix C5 for additional details.

9) The implementation plan developed by the "Partners in Progress" process provide an excellent framework for future action.

In February 1995, 200 experts met in Washington to develop strategies for meeting the goal of reducing alcohol-related traffic fatalities to 11,000 by the year 2005. The report, *Partners in Progress: Impaired Driving Goals and Strategies for 2005*, contains 115 recommendations. An implementation group, made up primarily of the moderators of the 10 workshops that developed the recommendations, was established and is nearing completion of a report that will contain the actual strategies for meeting the goal. The process has provided a vehicle for the participation of many sectors of society in the implementation of prevention policies, the development of new social norms, and the forging of new alliances. It includes a variety of research and practice-based recommendations and a process for encouraging the adoption of the recommendations. *Partners in Progress* can provide a unified national agenda for action that will have wide support and recognition.

10) A new generation of highway safety leaders is needed.

Researchers, activists, and policy advocates in the impaired driving field should become more conscious of the need to cultivate young colleagues who can bring new enthusiasm and creativity to the impaired driving field.

Opportunities should be created for these young people to receive training, participate in conferences and meetings, obtain funding, and be mentored by more experienced colleagues.

This process can occur at all levels, including:

- Grassroots community organizations, which can encourage participation of young people through special youth projects;
- Research institutions, which should recruit new, young investigators and provide them with guidance from more senior investigators;
- Government agencies, which can provide special funding and internships for students or young

researchers; and
- Advocacy organizations, which can develop special roles for young participants.

Appendix C contains a number of background papers prepared for the workshop, which contain greater detail on the items discussed above.

APPENDIX A

PROGRAM OUTLINE FOR THE WORKSHOP

COMBATING IMPAIRED DRIVING IN AN ERA OF DIMINISHED RESOURCES AND SHIFTING PRIORITIES

sponsored by
Transportation Research Board
Committee on Alcohol, Other Drugs and Transportation

cosponsored by
Center for Substance Abuse Prevention
International Council on Alcohol, Drugs and Traffic Safety
National Association of Governors' Highway Safety Representatives
National Center for Injury Prevention and Control
National Highway Traffic Safety Administration
The National Institute on Alcohol Abuse and Alcoholism
National Transportation Safety Board

National Academy of Sciences
Beckman Center
Irvine, California

August 20-21, 1996

Tuesday, August 20, 1996

7:30-8:30 am	Breakfast and Workshop Registration Beckman Center
9:00-9:30 am	**Welcome and Discussion of Workshop Format and Objectives** Barry M. Sweedler, Workshop Chairman
9:30 -11:00 am	**What strategies are needed to prevent legislative and policy changes detrimental to the progress made in impaired driving?** Presentation by: Bob Shearouse, Mothers Against Drunk Driving Discussion by: Judith Stone, Advocates for Highway and Auto Safety
11:30-1:00 pm	**What research shows about the potential impact of enforcement strategies, penalties, and other deterrence approaches applied at the local level to reduce impaired driving.** Presentation by: Allan Williams, Insurance Institute for Highway Safety Discussion by: Robert B. Voas, Pacific Institute Steven M. Simon, University of Minnesota Herbert Simpson, Traffic Injury Research Foundation of Canada James Baker, Institute for Health Advocacy
1:00-2:00 pm	Buffet Luncheon - Beckman Center
2:00-3:30 pm	**What environmental strategies can be applied at the local level to reduce impaired driving? (e.g., controls on alcohol sales, responsible beverage service, etc.)** Presentation by: Kathryn Stewart, Pacific Institute Discussion by: Ralph Hingson, Boston University Evelyn Vingilis, University of Western Ontario Robert Denniston, Center for Substance Abuse Prevention
4:00-5:30 pm	**What innovative partnerships can be formed to leverage funding for impaired driving programs?** Presentation by: Tim Hoyt, Nationwide Insurance Discussion by: Terry Schiavone, National Commission Against Drunk Driving
7:00-9:00 pm	Reception - Hyatt Newporter

Wednesday, August 21, 1996

8:00-9:00 am	Breakfast - Beckman Center
9:00-10:30 am	**What recent changes have been made in funding and incentive structures at the federal level that may change state legislative and policy priorities?** Presentation by: Adele Derby, National Highway Traffic Safety Administration. Discussion by: Laura Ludwig, Ohio Office of Governor's Highway Safety Representative Elizabeth A. Baker, Maryland Traffic Safety Division
10:30-12:00 pm	**What is the state perspective on impaired driving as it relates to federal changes, government downsizing, anti-government sentiment, etc.?** Presentation by: Arthur L. Anderson, California Officer of Traffic Safety Discussion by: Joe Parker, North Carolina's Highway Safety Program John Conger, Colorado Office of Transportation Safety
12:30-1:30 pm	Buffet Luncheon - Beckman Center
1:30-3:00 pm	**What role can NHTSA's Partners in Progress play in maintaining a focus on impaired driving despite the changing political climate?** Presentation by: Jim Hedlund, National Highway Traffic Safety Administration
3:30-5:00	**Concluding Discussion**

APPENDIX B

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APPENDIX C1
STRATEGIES NEEDED TO PREVENT LEGISLATIVE AND POLICY CHANGES DETRIMENTAL TO THE PROGRESS MADE IN IMPAIRED DRIVING

Robert C. Shearouse
Mothers Against Drunk Driving

Despite the tremendous progress made over the last 15 years in reducing alcohol-related fatalities, these crashes still remain the leading cause of death for the age group between the ages of 5 and 35, second only to traffic crashes in general. In 1995, we witnessed an increase in the number of alcohol-related deaths for the first time in a decade. The media, the public and the highway safety community in general, quickly asked what caused this increase. Was this increase just an anomaly or are we reaching the point of diminishing return in our efforts to stop impaired driving? Does this increase portend a glimpse into the future? Clearly it indicates that we are not out of the woods insofar as the severity of drunk driving is concerned.

Any discussion of the strategies that are needed to prevent legislative and policy changes detrimental to the progress made in impaired driving must begin with a look at the recent trends on the federal and state levels. Over the last year, we have witnessed repeal on the federal level of life saving highway safety measures in the areas of speed limit and helmet laws. At the same time we were confronted with serious threats to safety belt laws and we continue to see legislation proposed to repeal the federal 21 minimum drinking age law. The movement to reorganize government and give more authority and autonomy to the states to control their own destiny in the area of highway safety has in part led to this change in climate in Washington. The question we are now confronted with is, "what is the federal role to be in the future?" The answer to this question will quite naturally dictate strategies. Will it be one of continued leadership in the war against impaired driving or will there be a growing trend to back off and leave it entirely up to the states to devise legislative and policy initiatives to address this problem.

At the outset let me say that MADD believes that it is appropriate for the federal government to continue to play a major role and provide leadership in the area of highway safety. Without a strong federal role the 21 minimum drinking age law and zero tolerance for drivers under the age of 21 would not be the law of the land today. As President Reagan, one of the staunchest supporters of state's rights said when he signed the Federal Age 21 Minimum Drinking Age Law in 1984, "there are some issues of such national importance, that we must insure that they have nationwide application (sic)." This still holds true today and MADD will continue to support sanctions when appropriate and incentive programs when effective.

In 1995, many of the groups, organizations and agencies represented here today joined the Secretary of Transportation in setting and adopting the ambitious goal of reducing alcohol-related fatalities to no more than 11,000 by the year 2005. One thing is clear: We are not going to achieve this ambitious new goal if we stand still. We must devise new strategies while continuing to do what we are presently doing and do it better.

The next multi-year highway, mass transit and highway safety bill, the reauthorization of the Intermodal Surface Transportation Efficiency Act of 1991, will be a key component to achieve the "11,000 By 2005" goal. It is therefor critical that the legislative language submitted to Congress in 1997 enhance and improve ISTEA and not diminish it.

Any strategic plan to promote legislative and other public policy goals to combat impaired driving must begin with a look at resources. ISTEA must not only be reauthorized, but it most also be improved from a funding perspective. Drunk driving continues to be the major highway safety problem and is a major public health problem in the United States, but only a small percentage of funds is allocated at the federal level to address it. The same can be said of highway safety generally. Each year the number of licensed drivers and the number of miles driven continue to increase, but funding levels have remained fairly flat. On the state level, in 1983, 44% of 402 funds was spent on alcohol programs. That percentage has declined steadily since 1983 and for the last 4 years has leveled off at 23%, the lowest level since 1983, despite the fact that more than 40% of all highway traffic fatalities continue to be alcohol-related. States are being asked and required to do more with less. We often hear officials and legislators tell us that safety is their first and primary concern, but a commitment to safety is not reflected in spending priorities. In fact, when we ask those same legislators what they want to spend money on, safety is rarely mentioned.

Highway safety programs and the campaign against drunk driving as supported by Sections 402 and 410 funds must be assured of adequate resources in the next ISTEA bill. If, in fact, safety is the first and primary concern of public and elected officials, then funding to enhance life saving measures should be taken off the top on the next ISTEA bill so that the resources are secured to insure the safe use of surface transportation facilities. If it is necessary to set aside a percentage of the highway trust funds to insure secure adequate funding for highway safety programs, we should not be reluctant to ask Congress to do so.

At the same time we are seeking more funding, we cannot close our eyes to the political climate in Washington as previously eluded to. As previously stated, relative to other public health problems, the Federal government spends little on highway safety and drunk driving and given present budget realities and the mood in Washington, the federal government is not likely to spend substantially more in this area unless we demand that highway safety be given a higher priority. With the current limited resources, it becomes even more important that we spend wisely and effectively what we spend today. That is why the development, implementation and analysis of the

effectiveness of the new 402 program is so essential.

The Section 402 State and Community Safety Program, as all of you well know, is the keystone highway safety program on the federal level. We at MADD are cautiously optimistic about the new 402 Program. We do not object to NHTSA changing its relationship with the states to improve the performance of the 402 program and provide a focus which will enhance the saving of lives. However, as NHTSA and the states move in this direction, we must not forget the history of the last 15 to 20 years and provide a meaningful partnership role for other highway safety agencies, advocates, and grassroots organizations in that new process. Governmental agencies on the federal and the state level have limitations placed on them in the public policy advocacy process by the very nature of the political system which created them. Grassroots advocates are not constrained by the system in this regard and are essential to carry the banner of highway safety in the state houses, on Capitol Hill, to the media and to the public. It is not a matter of not trusting the states to do what is necessary to fight impaired driving. It is a matter of realizing the pressure put on state highway safety offices to spread their limited resources as far as they will go and the pressure put on legislators by opponents of some life saving highway safety measures. Highway safety plans must be driven by highway safety concerns and not political concerns.

Certain segments of the hospitality and alcohol industry have made it clear that they are going to spare no expense in going to the wall to stop passage of new impaired driving legislation on the state level and their success is evident by the lack of adoption of general deterrent laws over the last year. They were also the moving force, financially, for the legal challenge to the 21 minimum drinking *age* law in Louisiana. When they are joined by the President of a major university in calling for repeal of the 21 drinking age law, it is clear that we have our work cut out for us in preventing the clock from being turned back. They are also taking their message to the public and the media in campaigns such as their promotion of responsible drinking and driving.

At a time when we run the risk of public and media complacency over the problem of drinking and driving, it is essential that we do a better job of public awareness and that we convince the public through the media that the drunk driving problem is not solved.

These opponents are not limiting their activities to the state level but they are becoming more and more involved on the federal level. I would like to read to you a couple of quotes from the newsletter and correspondence to its members of the American Beverage Institute.

As you can see, the highway safety community is not alone in preparing to address the reauthorization of ISTEA. The industry has also recognized the role that non-profits play in the highway safety political process. They have not only targeted passage of effective drunk driving countermeasures, but have also attempted to silence the voice of these organizations by promoting and supporting the passage of legislation on the federal level that would restrict the political advocacy activities of non-profit organizations such as MADD. It is no coincidence that the cosponsors of this federal legislation were recently recognized by the National Beer Wholesalers for their efforts. In light of this increased opposition to life saving counter measures, we must create a better mouse trap by packaging our public policy goals in a more user friendly manner for legislators, the general public and the media.

The Partners in Progress task force which was given the responsibility of reviewing the more than 160 recommendations that came out of the Partners in Progress Symposium, is currently completing its report which will outline a blueprint and strategic plan for achieving the goal of "11,000 by 2005." This report will include some of the following recommendations:

In the area of infrastructure, we must develop and expand self-sufficiency in funding, improve traffic records, increase the scope of 402 funding, create state and local ownership of programs, expand community-based partnerships, create broad-based comprehensive task forces, develop public involvement, and increase the involvement of the judiciary. We must strengthen and increase our partnerships not weaken and decrease them. The medical and the business community must become serious players and we must create community ownership of programs.

In the programs area, we must develop a comprehensive under 21 enforcement and legislative program to combat the projected increase in the youth population over the next decade, emphasize impact of seat belts, expand employer programs, develop and implement comprehensive strategies to target the 21- to 34-year old drinking driver and repeat offenders, develop a system of routine substance abuse assessment and treatment plans, and promote increased use of enforcement programs such as sobriety checkpoints.

In the legislative area, we must continue to work for passage of proven effective life saving measures such as administrative license revocation, zero tolerance, .08 BAC limits for adult drivers and graduated licensing, while at the same time examining and adding new public policy goals to the agenda such as enhanced penalties based on BAC levels and increasing excise taxes on alcoholic beverages.

We must make better use of the media and develop a national strategy of media relations, address the issue of alcohol advertising and promote, develop, and recognize responsible business practices in the service of alcohol.

In the area of research and technology, we must identify the key areas in which more research is needed and be prepared to support funding for this research. We must also do a better job of using the research that is currently available to us to identify key public policy goals and promote their passage by the most effective methods.

All of these strategies are needed not only continue the progress that has been made over the last 15 years, but prevent detrimental legislative and policy changes. The key component in this seemingly comprehensive plan is

networking and partnership. If we are not all singing from the same page, our voices will be lost in the wilderness. Our success will be measured in lives saved and families spared the tragic consequences of alcohol-related crashes. But we must remember, there is no acceptable minimum number of deaths. Each number represents a face, a name, a hope and a dream.

APPENDIX C2
EFFECTIVE USE OF DETERRENCE APPROACHES TO REDUCE ALCOHOL-IMPAIRED DRIVING

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In combating impaired driving through deterrence approaches in an era of diminished resources and shifting priorities, it is important to use available resources wisely and to take advantage of emerging priorities in other highway safety areas.

EMERGING PRIORITIES

The trend to graduated licensing systems represents an opportunity to address alcohol-impaired driving. In graduated licensing, driving privileges are phased in, with initial on-road driving of young beginners limited to lower-risk settings. A key feature of a graduated system is a night driving curfew for the first months of licensed driving. Nighttime driving is riskier than driving during daylight hours for a variety of reasons including greater likelihood of alcohol use. The problem of alcohol-impaired driving among youth has lessened in the past 15 years, but it is still a substantial contributor to motor vehicle injuries and is largely a nighttime phenomenon. In 1994, 75 percent of the driver fatalities of 16 and 17 year-olds that involved alcohol use occurred in crashes between 9 p.m. and 5:59 a.m. (National Highway Traffic Safety Administration, 1995). Thus by prohibiting recreational driving with other teenagers at night, the problem of alcohol-impaired driving can be reduced. Efforts to ensure that graduated licensing systems include night driving curfews (and zero tolerance if a state does not already have it) are important.

Another emerging priority that can impact alcohol-impaired driving is the new emphasis on seat belt use. This has been fueled recently by recognition that belt use in the United States still is quite low: 58 percent in the noncrash population based on a national probability sample (National Highway Traffic Safety Administration, 1995a), and 45 percent among those in serious crashes with delta V > 30 mph (National Center for Statistics and Analysis, 1995). Emphasis on belt use also is fueled by concern about airbag injuries to unrestrained children and adults. Because people who do not use belts are more likely than belt users to drive after drinking (Preusser, Williams, and Lund, 1986), programs aimed primarily at one of these behaviors also can logically target the other, e.g. by publicizing that police are looking for those not using belts and are thereby finding alcohol-impaired drivers. This has been done successfully in Binghamton, New York (Wells, Preusser, and Williams, 1992) and, more recently, in the statewide North Carolina Governor's Highway Safety Initiative (Williams, Reinfurt, and Wells, 1996). In daytime seat belt checkpoints and associated patrols in North Carolina that concentrated on seat belt use, 14,205 arrests for alcohol-impaired driving were made. These were in addition to the 102,852 citations issued for not using belts.

A third example is the recent emphasis on fatigued drivers. Since fatigue and alcohol often are associated, it is likely that many countermeasures considered for the fatigued driver (e.g., continuous shoulder rumble strips) also could affect the alcohol-impaired driving problem.

USING RESOURCES WISELY

In terms of using resources wisely, accurate targeting of the impaired driver problem is important. The major resources should be devoted to alcohol as the drug of primary interest when it comes to motor vehicle injuries. Other legal and illegal drugs contribute to crashes, but alcohol is by far the predominant one (Terhune et al., 1992).

There also needs to be emphasis on efficient applications of approaches known to be effective in reducing the problem. License suspension stands out as an effective penalty, with suspension through administrative procedures representing the most efficient way to apply this penalty. Sobriety checkpoints stand out as a primary enforcement technique.

License Suspension License suspension has been found to produce both specific and general deterrence. That is, it effectively penalizes offenders and deters potential offenders—and the positive effect on offenders extends beyond the suspension period (Klein, 1989; Zador et al, 1989; Ross, 1987; Nichols and Ross, 1988; Stewart, Gruenewald, and Roth, 1989). Ideally, suspension does not merely reduce crashes and violations but virtually eliminates them. However, as is well known from studies in the United States and around the world, many suspended drivers still drive (e.g. Ross and Gonzales, 1988; Hagen, McConnell and Williams, 1980; Smith and Maisey, 1990).

According to a study in California, 8.5 percent of drivers in fatal crashes were suspended at the time of their crashes whereas only 1.5 percent of the driving population had been suspended (DeYoung, 1990). Although license suspension for alcohol offenses does reduce DUI/DWI recidivism, these data indicate both that suspended drivers continue to drive and that driving while suspended is a high risk activity. Thus, efforts to deter suspended drivers from driving are important. One way is to improve identification of suspended drivers. Sobriety and seat belt checkpoints

can help accomplish this if officers examine the licenses of motorists passing through the checkpoints. For example, 16,032 sobriety and seat belt checkpoints were conducted in North Carolina over a three-year period, and they led to 21,170 citations for driving while suspended or revoked. It also may be possible to identify suspended drivers or their vehicles using photo radar or other speed cameras. The use of speed cameras is presently limited in the United States, although it is standard enforcement practice in many countries. Techniques for identifying suspended drivers using advanced technology that would automatically read license plates and immediately identify whether the vehicle is owned by a person with a suspended license are currently being studied by the National Highway Traffic Safety Administration. The Insurance Institute for Highway Safety demonstrated in the 1970s that using license plates to identify suspended drivers on the roads could be an effective enforcement approach (Miller, 1978), and modern technology should allow this to be done much more efficiently. More widespread use of special markings on the license plates of suspended drivers also would facilitate identification.

Once offenders are identified, they should face sanctions. It was found in California that many suspended drivers stopped by the police were not punished for driving while suspended (DeYoung, 1990). This presumably happens in other jurisdictions, too, and the reasons need to be better understood. At the same time, finding ways to identify suspended drivers on the roads and letting the public know about this capability are major steps in improving the penalty's deterrent power.

It is also important to continue researching promising techniques to reduce driving by suspended drivers through vehicle-based sanctions (e.g., impounding or immobilizing vehicles, taking license plates). The role of alcohol interlocks, designed to prevent driving after drinking without otherwise interfering with a driver's mobility, should be investigated further. Studies now in progress will help clarify the effect of interlocks.

Sobriety Checkpoints Sobriety checkpoints have been used extensively to identify alcohol-impaired drivers, especially late at night on weekends when they are most likely to be on the roads. Sobriety checkpoints can be configured in various ways. For a recent study in California, they were varied by mobility (remaining in one location per evening versus moving twice) and by staffing levels (3-5 officers versus 8-12), which affect costs. These programs reduced crashes resulting from alcohol-impaired driving however they were configured (Stuster and Blowers, 1995), so efficient application of checkpoints would feature the lower-cost approaches.

In addition, the effects of checkpoints can be magnified by publicity. Checkpoints gain publicity because they are highly visible to motorists who encounter them and attract news coverage. The power of visible checkpoints to affect public perception was illustrated in a study in the Washington, D.C. area (Williams and Lund, 1984). In two neighboring counties—one with a few, well-publicized sobriety checkpoints and the other using unpublicized, drinking-driver patrols that actually achieved as high or higher arrest rates—residents of *both* counties incorrectly believed that the probability of arrest was higher in the county where checkpoints were conducted.

Generating widespread publicity about checkpoints is important in maximizing their deterrent effect. In the California checkpoint study, local citizens were involved in generating vigorous public information and education programs to accompany the checkpoints, a low-cost approach thought to contribute significantly to deterrent effects (Stuster and Blowers, 1995). Announcing checkpoint yields, including the number of license violations, may further this goal. Of course, if checkpoints operate extensively over time, many people gain personal experience with them, generating word-of-mouth publicity. This was found in Australia to be important in influencing people's perceived probability of arrest (Homel, 1990).

Most sobriety checkpoints are not very efficient at detecting drinking drivers. Police officers do not get much opportunity to observe driving behavior before interacting with a driver, and the interaction is limited. Research involving checkpoints where drivers not detained by the police subsequently were tested for alcohol indicates that about half of the drivers with illegally high blood alcohol concentrations (BACs) are not detained (Jones and Lund, 1986; Ferguson, Wells, and Lund, 1995). The deterrent effect of checkpoints would clearly be enhanced if a higher detection rate could be achieved.

Recent research has indicated that women and young drivers with high BACs are more likely to be missed at checkpoints than men and older drivers (Wells et al., 1996). Communicating this to police officers may prompt them to pay more attention to these groups and improve detection rates. It is more important, however, that police use technology that enhances their ability to quickly identify drivers who have been drinking. Passive alcohol sensors have been shown in studies to increase detection rates substantially. In one study, police by themselves identified 45 percent of high BAC drivers ($\geq$0.10 percent), compared with 68 percent using sensors (Jones and Lund, 1986). In another study, the detection rate was 55 percent without sensors and 71 percent with them (Ferguson, Wells, and Lund, 1995). Laser detectors, which also may be useful to police, are now being assessed by the National Highway Traffic Safety Administration. Use of preliminary breath test devices on a voluntary basis at checkpoints would result in a high detection rate if a high enough cooperation rate could be achieved and maintained. The Insurance Institute for Highway Safety currently is seeking to carry out a research project that would investigate the use of preliminary breath testers at checkpoints in states where it is legal to do so.

Finally, better understanding of police attitudes and motivations should inform the effort to achieve greater deterrence through alcohol laws and penalties. Police apply the laws and may, for example, be less than enthusiastic about taking people's licenses because they believe most motorists will continue to drive with impunity. Police also may be indifferent to checkpoints because they think it is easier to find alcohol-impaired drivers through patrol activities. They may be reluctant to use passive alcohol sensors because they trust their ability to detect alcohol without them. To the extent that views such as these prevail, deterrence will be lessened. We know that law enforcement will be enhanced if there is strong political support for the enforcement, but there is much we could learn and benefit from in regard to the factors influencing police enforcement practices.

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APPENDIX C2A
ENFORCEMENT OF DRINKING-DRIVING LAWS IN AN ERA OF REDUCED RESOURCES

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INTRODUCTION

The dramatic reduction in alcohol-related crashes which has occurred during the last 15 years has been a remarkable demonstration of the efficacy of the nation's highway safety

program. This extended success in fighting drunken driving has led to the adoption of a challenging goal for the future; the reduction of alcohol involved crashes from the 16,000 experienced in 1994 to 11,000 in 2005 (Partners for Progress, 1995). Concern is rising, however that the era of progress is coming to an end because of changes in Federal, state and local governments and the shift of public attention to other societal problems. The current trend in both National and local politics is to reduce the involvement of government in social and health problems. A significant effort is being made to reduce taxes at all levels and local governments have the additional burden of reductions in state and Federal stipends. All of this suggests that the resources which can be applied by local agencies to the drinking driving problem will be reduced in the coming decade.

There are a number of factors which suggest that despite the declining resources, the nation can continue to make progress in the reduction of impaired driving. First, while there is considerable competition for the public's attention, drunk driving continues to be high on the list of public priorities. This was recently demonstrated in surveys conducted in two California cities and one South Carolina city as part of local community trauma reduction programs. In each of these three communities, respondents chose drunken driving as the number one problem over such other candidates as the drug problem, AIDS, the economy, and Bosnia. Secondly, while there is a trend toward reducing government involvement in most social and health problems, there is strong support for tough law enforcement. This is reflected in a reluctance to reduce police department budgets, thereby lessening the impact on the enforcement of impaired driving laws. Third, there is strong political support for family values which is reflected in the attachment of the zero tolerance provision to the National Highway System bill in 1995.

Finally, there is an infrastructure of support for drunk driving programs which has grown over the last 15 years of progress. Activist groups such a Mothers Against Drunk Driving have grown and become established elements of the national and local scene. The National Highway Traffic Safety Administration has funded the development of new technology and the training of police, prosecutors and judges. A broad "ALR" coalition of governmental and private organizations has been established to promote alcohol safety legislation. This paper examines the actions that can be taken to strengthen the enforcement of drunk driving laws in the light of these positive factors, without significant increases in the funding of police departments.

BACKGROUND

The passage of Driving Under the Influence (DUI) legislation has gotten out of sync with the enforcement of these laws by the police. For the first half of this century, drunken driving was defined in behavioral terms and the arresting officer had the burden of describing the driver's impairment sufficiently well to convince a jury that the individual was impaired. Once blood alcohol measurement came on the scene this method was simply tacked on to the end of the traditional procedures for collecting behavioral evidence. Only in the late 70's and 80's, when the states began to pass per se illegal laws did the BAC begin to take a more central place in DUI enforcement (Voas and Lacy, 1990). However defense lawyers were generally successful in keeping a focus on behavioral criteria by requiring the officer to demonstrate that he or she had probable cause to make the arrest. As a result the emphasis in police training has been placed on the signs of impaired driving (Harris, Howlet and Ridgeway, 1979) and on field sobriety tests to detect driver impairment (Tharp, Burns and Moskowitz, 1981) and little emphasis on the use of sobriety checkpoints and preliminary or passive breath test devices which reduce the reliance on behavioral signs of intoxication.

As a result of the success of activist groups in promoting drunk driving legislation, DUI laws have been enacted which are difficult if not impossible to enforce aggressively with the traditional methods based on observations of driver behavior. The current legislative trend is to lower the BAC limit for adults to .08 and to .02 for those under 21 years old. At these levels the observational methods which are effective for drivers with BACs above .10 are no longer effective. Most other industrialized nations have met this problem by adopting "Chemistry based" enforcement systems (Voas and Lacy, 1990) which are not principally dependent on observing impaired behavior. Perhaps the premier example of this is in Australia where the use of random testing has resulted in a significant reduction of the alcohol-related fatality rate (Homel, 1988). In the U.S. however, concerns with constitutional issues and the extensive investment in the training of officers in the use of visual detection methods have held back the exploitation of the per se illegal laws which have been enacted over the last two decades.

This hiatus between the modern drunk driving laws which feature low per se limits and the new breath test technology which is available to enforce them and the current DUI enforcement procedures provides an opportunity to increase the intensity of enforcement without large increases in resources by using the current laws and equipment more efficiently. These opportunities appear to fall into areas: Increased use of sobriety checkpoints; increased use of preliminary and passive sensors; and increased enforcement of zero tolerance laws for drivers under 21. Each of these opportunities is discussed below.

INCREASED USE OF CHECKPOINTS

There have been several evaluations of sobriety checkpoints which have demonstrated the effectiveness of this enforcement procedure (Voas, Rhodenizer and Lynn, 1985;

Williams and Lund, 1984; Lacy, et al.,1986; Levy, Shea and Ash, 1989; Williams, Wells and Foss, 1995; NHTSA, 1995). However, in most jurisdictions this effective technique is used only infrequently, mostly on holidays such as the Fourth of July, Labor Day or New Years Eve. The principle reason for the limited application of this technique appears to be the high cost associated with bringing a together a large number of officers believed to be required to implement a checkpoint. An important study in California funded by the NHTSA (Stutster and Blowers, 1995) demonstrated that checkpoints conducted by as few as four officers can be as effective in reducing nighttime single vehicle crashes as larger operations which employ ten or more officers. Some jurisdictions such as West Sacramento have developed systems for using as few as two officers. This should open the way for much more frequent implementation of the checkpoint technique even in relatively small jurisdictions, particularly if adjacent departments join in implementing this enforcement procedure.

In Australia, random testing has proved to be particularly effective where it was widely and routinely applied. It has become the normal enforcement method. Similarly, checkpoints have been most effective where they have been used regularly on a routine basis as in Charlottesville, Virginia where they were mounted on Friday and Saturday night every week (Voas, Rhodenizer and Lynn, 1985). Mini-checkpoints could be mounted at least weekly in most jurisdictions by bringing four patrol officers to a predetermined location for one or two hours during an evening. The checkpoint equipment could be brought to the site and set up by reserve officers. Using this type of approach, a regular checkpoint element could be added to traditional drunk driving patrols. If effectively publicized, this could create a climate in which the driving public would expect to encounter checkpoints on a routine basis. This would increase the deterrence to driving after drinking particularly among those individuals who believe they can avoid detection by driving carefully when drinking.

INCREASED USE OF PRELIMINARY AND PASSIVE SENSORS

Detection of impairment in many drinkers is difficult. Studies in Scandinavian countries where a physician was required to examine individuals charged with impaired driving demonstrated that half of those over .10 BAC where judged to be impaired by these trained experts (AMA, 1976). It is not surprising therefore that breath tests of drivers interviewed at checkpoints but not detained by the police indicate that half of drivers with illegal BACs are missed in these operations (Jones and Lund, 1985; Ferguson, Wells, and Lund, 1993). A similar result was found for regular motor officers on patrol by Taubenslag and Taubenslag (1975), though Kiger, Lestina and Lund (1991) found a lower miss rate for special DUI patrol officers. These studies involved detection of adults in states with .10 and .08 laws. Detection of underage drivers at .02 BAC would obviously be significantly more difficult.

Despite this evidence that many over-the-limit drivers are avoiding detection when interviewed by the police, the use of breath sensing devices at the roadside has been limited. Passive sensors, which collect air from in front of the drivers face and are not believed to constitute a search under the fourth amendment, can be used at any time in the investigation without a requirement that the officer have reason to believe that the suspect has been drinking. Jones and Lund (1985) demonstrated that use of passive sensors at a checkpoint increased the apprehension of over the limit drivers by nearly 50%. Ferguson, Wells and Lund (1993) obtained similar results. Despite this demonstration of their effectiveness, passive sensors have received only limited use (Leaf and Preusser, 1996).

Preliminary breath testers have been available to the police for the last 20 years and are regularly in use in many departments. Safer and Chaloupka (1983) found that states with preliminary breath test laws had lower highway fatality rates. However, the doctrine in most departments is to use these units only after the officer has administered the field sobriety tests. Since most of the over the limit drivers who are missed by the police are not invited out of the car for sobriety testing, this procedure limits the potential impact of these units. One reason for not employing these units at an earlier point in the investigation is that they are believed to be a search under the fourth amendment and therefore require that the officer have reason to believe the person has been drinking to require the test. However, most courts have held that the evidence required to conduct a preliminary breath test is the same as that required to conduct a sobriety test. Thus, the officer could test the driver while still seated in his vehicle as soon as he had reason to believe that the individual had been drinking. A more aggressive use of the preliminary breath tester would reduce the time lost in sobriety testing of drivers not over the limit and would increase the detection of drivers who provide only borderline evidence of drinking.

Since many departments are already equipped with preliminary sensors, earlier use of these devices in the investigation of drinking drivers would increase apprehensions at little additional cost. The ability of passive sensors to detect over the limit drivers who show few if any indications of impairment should pay for themselves in a relatively short period if actively employed. The problem which must be overcome is the need to persuade department commanders and the patrol officers of the importance of these devices to effective enforcement of the new lower BAC limits. One area which has not been fully exploited is the potential of passive sensors to increase the perception of risk of apprehension among drinking drivers. If these potential offenders understand that if stopped by the police

the officer has the means to sniff out the heavy drinker no matter how sober he appears, this should have a significant deterrent effect.

INCREASED ENFORCEMENT OF UNDERAGE DUI LAWS

There is strong general support for measures directed at decreasing the use of tobacco, alcohol and other drugs by youth. This is reflected in the wave of zero tolerance legislation that is sweeping through the country, aided by evidence that this type of legislation is effective in reducing alcohol-related deaths among young drivers (Hingson, Heeren and Winter, 1987). Currently there are 37 states with zero tolerance laws and with the impetus provided by the passage in 1995 of Federal legislation which penalizes states that do not enact such laws, all 50 states should soon have this law. Despite the public and official concern with underage drinking and driving, enforcement of DUI laws for drivers under 21 has been limited in comparison to the attention given to apprehending adult drivers (Voas and Williams, 1982; Preusser, Ulmer and Preusser, 1992). While the alcohol-related fatality rate for the under 21 age group has fallen over the last years to a greater extent than that of the adults, it is still high in relation to other age groups. Further, current demographic trends indicate that there will be a large increase in this age group during the coming decade. Thus, underage drivers remain an important target for impaired driving programs.

The zero tolerance laws make it an offense to be in charge of a vehicle with any measurable amount of alcohol in the body. This should make these laws easy to enforce since any indication of drinking should provide the basis for requiring an evidential breath test. Further, some of these laws such as the one in California are purely administrative, which allows the officer to confiscate the license without booking the offender into the jail. This significantly shortens the time that the officer is off the road while dealing with a DUI action. In most cases, the officer also does not need to appear in court, though he may in some cases have to appear at a department of motor vehicles hearing. In California, despite the relative ease with which an officer could cite an underage driver under the new zero tolerance law, the total number of DUI related actions did not increase after the law became effective.

Pruesser, Ulmer, and Pruesser (1992) attributed the low apprehension rate of young drivers to the fact that they do their drinking in locations such as parks, rather than near bars and restaurants which are more heavily patrolled by the police and that they exhibit different driving behaviors than adults when drinking. They also noted that young drivers performed better on the sobriety tests. To these physical factors needs to be added the apparent low motivation of police officers to arrest or cite young persons. In most localities, taking a young person into custody requires the officer to locate the parents which may consume considerable time away from patrol activity. In addition, officers frequently come under criticism from parents and many question the extent to which the public supports the strict enforcement of zero tolerance and "use and lose" laws. Since special enforcement programs must be implemented if the police are to patrol in different areas and emphasize laws directed at drinking and driving by youth, the community must organize to make it clear to the department that it expects to have these laws vigorously enforced.

Increasing the emphasis on the enforcement of under age laws will also be important to the effectiveness of nighttime curfews for novice drivers; a significant component of the graduated licensing laws which are a high priority legislative objective for safety groups. If police departments and their patrol officers can be persuaded to give greater emphasis to underage DUI laws, It should be possible to significantly increase deterrence to driving after drinking by underage drivers at relatively low cost.

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APPENDIX C2B
DISCUSSION COMMENTS

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One of the implicit themes in the paper by Dr. Williams is that, where feasible, we should make better use of the programs and policies we already have at our disposal. This is a theme with which I can resonate and would like to pursue more fully.

It often strikes me as though we live in a world gone mad with the passage of new laws and regulations, without due regard for the fact that laws are only as good as their enforcement. Accordingly, if we do find ourselves in an era of diminished resources and are facing stiffer competition for those resources, we might well question whether adding new laws is the most sensible approach to take.

Perhaps at least equal consideration ought to be given simply to making better use of the laws we already have. Allan has suggested, for example, that we might look at ways for improving the efficiency and effectiveness of police surveillance—e.g., making checkstops more efficient by equipping the police with passive sensors or even equipping them with information such as the correlation between fatigue and drunk driving or the correlation between belt use and drunk driving to make their detection more efficacious.

But the efficient application of the law can envelope many more than those who are normally thought of as part of the enforcement cycle (i.e., the police, judiciary, courts, jails, parole). The application of existing laws can begin at a much more local level through such simple mechanisms as information dissemination, designed to increase public awareness.

A fundamental premise of general deterrence is that the public is aware of the threat—i.e., they are aware of the existence of the law. It is, of course, more complex than that - the public must believe that the threat is real and they must believe they stand a reasonable chance of the threat being applied to them if they transgress the rules. But, the fulcrum for that lever in the first place is awareness of the law.

Unfortunately, it is often assumed that the existence of a law and even its reasonably routine enforcement leads to widespread awareness of its existence, thereby creating the opportunity for general deterrence. Often, however, this belief is unfounded. Let me cite two illustrations from Canada. In 1985, the federal government's Department of Justice introduced amendments to the criminal code that significantly increased the minimum, mandatory penalties for drunk driving. Considerable publicity surrounded the announcement: a national advertising campaign; media events; a cross country tour; brochures; posters; pamphlets;

etc. About a year later, public awareness was tapped and the results were very discouraging. Few people were aware the law had changed; very few knew how it had changed. Indeed, even today a remarkably small proportion of the Canadian public know they will lose their license if convicted of drunk driving.

Perhaps an even more poignant illustration involves the vehicle impoundment program, which has been in operation in the province of Manitoba for several years. This program received considerable attention when it was introduced; has received ongoing media interest; and has been actively enforced. Indeed, about 2,400 cars are impounded every year—this in a province with a total vehicle population of less than 3/4 million. However, a recent survey found that only about 10% of the public were aware of the program. It is obviously quite unrealistic to expect much in the way of general deterrence in such a situation.

It seems logical that the efficiency of this program might be improved not necessarily by tightening up any loopholes in the legislation, or by adding more police officers, or by having more road checks to catch offenders but simply by increasing public awareness about the existence of the program in the first place. And, here is a possible role for local action. Rather than costly province or statewide advertising campaigns we need to explore grass-roots initiatives that can effectively increase awareness at the community level.

The key point is that there may be cost-effective, community-based ways to enhance the impact of the tools we already have in our possession.

My second point arises from the reference made in Allan's paper to the importance of police attitudes. I would like to extend this to include the importance of police morale, especially in a time of diminished resources and competing demands. Two contemporary issues are key to morale and to the enforcement of impaired driving laws. The first involves a continued frustration with the criminal justice system and the second involves the move toward community policing.

Police are notoriously frustrated with the criminal justice system in general—"We catch them and the system puts them back out on the street." Efforts to deal with drinking drivers are not exempt from such cynicism and for good reason. The cumbersome and seemingly ineffective judicial system has certainly been one of the reasons that the police community has so enthusiastically embraced administrative approaches that are swift and certain. Perhaps the best illustration of this is administrative license suspension/revocation.

Given that the police do represent the front end of the system for dealing with DWI offenders, we need to give special consideration to other means for enhancing the efficacy of the system into which they inject the offenders. This can only increase their enthusiasm and dedication.

This is not to suggest that we advocate an exclusive and headlong push to convert all legal sanctions into administrative ones. Efforts are also needed to streamline the court system to facilitate the processing and adjudication of offenders. Some developments in this area are notable. For example, NHTSA and NIAAA recently combined forces in a workshop and publication on DWI sentencing options designed to assist the judiciary in the efficient sanctioning of offenders.

At the same time, it is wise to carefully consider what other existing or planned DWI interventions might in fact be better vested within the administrative structure of the licensing authority, rather than in the criminal justice system. For example, from time to time in the U.S., and elsewhere, there is talk about decriminalizing drunk driving. In Canada, although this has certainly not occurred and is frankly very unlikely, there is a tiered system in place that has some of the advantages of both an administrative and criminal system.

Briefly, driving with a BAC in excess of .08 is an offense under the Criminal Code of Canada. At the same time, most provinces also have provisions within the Highway Traffic Act that permit a police officer to administer short-term driving suspensions at the roadside, if a driver's BAC is below the statutory level. There is evidence that the police like this system and that it has significant efficiency benefits.

The point here is not to debate the merits of such a system but simply to suggest that due consideration be given to improving the efficiency of the processing and adjudication system because it has clear implications for the treatment of offenders by the police at the local level.

In doing so, it is, however, important to be mindful of the tendency for unexpected consequences to arise when changes are introduced in the traffic control system. Serendipity often rules and the serendipitous consequences need not be favorable. Let me illustrate with a case from the Canadian province of British Columbia. Several years ago they introduced an administrative roadside suspension for drivers found to have BACs below the statutory limit of .08 but above .05. An evaluation of changes in the prevalence of drunk driving in that province found consistent and significant declines over an eight-year period in the number and rate of *criminal code* charges for impaired driving. This was much heralded. But at the same time, there was an equal and offsetting increase in the number of roadside suspensions. This was less heralded.

A favorable interpretation of these findings would suggest that although the rate of drinking driving was not changing, (i.e., the decline in the number of drivers with BACs in excess of .08 was balanced by an increase in the number with BACs below .08), the incidence of high BACs was declining (those over .08 were not as frequent). However, this does not appear to be what happened. It became evident from interviews with police that considerable discretion was at play in the field and that the administrative tool (roadside suspension) was often being used in lieu of the criminal charge. Persons who should

have received criminal sanctions avoided them and received instead administrative ones. Police practices were affected by the tools at their disposal. They like the swiftness and certainty of the administrative process and dislike the lengthy and more uncertain criminal route.

At this juncture, the bottom-line impact of this practice on alcohol-related crashes is not known and is not entirely relevant. The point is that if we do explore opportunities for moving sanctions from the criminal to the administrative sector, we need to be mindful of the implications—other benefits and disbenefits—this might have in the broadest sense.

Another trend that can impact police morale is the increasingly common practice in which police departments are eliminating their special traffic forces and homogenizing them with other specialty forces into something called community policing services. As a consequence, officers previously responsible primarily for traffic issues are becoming responsible for break and enter, domestic violence, and so on. This is a difficult trend to resist and I am uncertain how active we ought to be in trying to do so. Perhaps an alternative course of action is to accept the trend but try to ensure that traffic issues do not get lost in the shuffle. This can be done in various ways but at the local level, we need to consider mechanisms for providing support, recognition and encouragement of officers for their traffic safety efforts. Maybe they will see this as a priority, if they are rewarded for attending to it.

APPENDIX C2C
USING NEWS MEDIA TO ENCOURAGE ENFORCEMENT

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Institute for Health Advocacy

Traffic safety advocates increasingly understand the importance of a strong earned media component in their S.T.E.P. programs. Earned media can also provide the key to another important need: *providing enforcement encouragement to small and mid-size departments and their individual* officers.

Law enforcement officers can best perform their work if they receive public support from community members and from news outlets. Unfortunately, what many police departments more commonly receive from their local newspapers, TV news programs and radio commentators is criticism. This negative community-wide discussion about police work can lead to low morale and high personnel turnover and does nothing to encourage either departments or their individual officers to enforce traffic safety laws. *Bad press* can support officer attitudes of "why should I enforce this seat belt or DUI law? The community is against us anyway. Enforcing this law will just make it worse." *No press* may imply lack of community support, or even lack of community interest. *Good press* is the alternative, and it is up to traffic safety advocates and agencies to provide it.

In several recent projects, we have found that community-based traffic safety advocates can generate supportive news media that will encourage enforcement. Frequently, these supportive news stories represent the only positive news coverage of the department in recent memory. In these cases, a little good news has often gone a very long way toward supporting enthusiastic, ongoing enforcement.

In Oceanside, California, George Gaumont's Prevention Research Center project to reduce alcohol-related trauma used earned news media as a central tactic in achieving very large reductions in alcohol-related crashes. Gaumont's project worked hard to generate monthly TV news stories, newspaper columns, letters to editors and supportive radio talk show discussion which supported the need to aggressively enforce existing DUI laws. The Oceanside Police Department designated two full-time DUI officers to patrol the city of 130,000 residents. The organized community support for enforcement, communicated to residents through the news media, helped create a positive image for the police agency, and encouraged DUI patrol officers and department leaders to continue their aggressive approach.

In the Louisiana Office of Highway Safety's year-long seat belt project, Janet Dewey, Pete Stout and I traveled the state teaching PLOs and community workers how to generate news that would support enforcement of the state's new primary belt law by local agencies. We all knew that passage of the belt law would not, by itself, insure that local departments would enforce it. But agencies and officers appreciated the supportive news coverage they received, and they regularly told us that they felt their community understood why it was important to enforce the law.

Specific media techniques, which will be listed further on in this article, can be used by traffic safety leaders to demonstrate support for the enforcement of specific laws. When properly applied, these techniques can:

- *Increase enthusiasm for enforcement*, both at the level of the department and at the level of the individual officer.
- *Increase positive of enforcement of the specific law or issue area* (such as DUI enforcement in general, zero tolerance, youth DUI license revocation, speed enforcement, seat belt enforcement, etc.)
- *Increase the quantity of enforcement.* Officers tend to focus more work in areas where they receive public support.
- *Increase positive news coverage about the department in general.*

Traffic safety advocates can use news media to support and encourage enforcement in a number of ways:

- *Release news about traffic safety enforcement from a source outside the police agency. Design the release to support enforcement activities on this issue.* Rather than having the police agency release a statement saying it will increase seat belt enforcement, have a

local safety council chapter or a child safety group release the news. The release can still quote police officials and offer enforcement details, but the main sense of the story should be something like, "A safety group supports new police policy of increased seat belt enforcement. Details of police enforcement plan also released. Data shows lives, dollars saved." The safety group may be seen as being in a more neutral position than police on this issue and can therefore provide *outside support* for enforcement.

- *Include authentic community voices as spokesperson and prepare them to make supportive remarks about the appropriateness of enforcement on this issue.* Seek educated participation by such peoples the leader of a parent-teacher group, a college or high school student, a businessperson, an EMS worker and a local government budget analyst. Including their supportive and explanatory comments in your written news release, or including them as spokespersons in a news event or news conference will provide enough variety of input that reporters will probably not feel compelled to seek additional input from an outside person whose views will be contrary but uneducated on the issue. Helping them to come forward to explain why enforcement is a useful tool in preventing traffic safety crashes, injuries, deaths and expenditures is part of a helpful community-wide discussion.
- *Release data, drawings, photos, videos, quotes by out of town experts, or other materials which will support the appropriateness of enforcement activities.* After all, research and experience consistently demonstrate that *enforcement + public information = traffic safety prevention of injuries, deaths and expenditures.* Advocates should, therefore, frequently share details with the public through news work.
- *Hold news events which portray police officers and enforcement activities on this issue in a positive light.* Advocates can set up fun, positive outdoor news events that cast traffic officers as community heroes.

On Valentine's Day in Vallejo, California, Michael Sparks and his co-workers at Vallejo Fighting Back provided roses for police officers to hand out to non-drinking drivers at Zero Tolerance DUI checkpoints run by the city police and the California Highway Patrol. In Kenner, Louisiana, officers passed out Thanksgiving hams and turkeys to drivers who had their belts buckled at a checkpoint. TV news gleefully reported the good news at both events, portraying the officers, the departments, and their communities in positive terms. Of course, the news stories also carried seat belt safety data. And authentic voices from the community spoke to news reporters on the scenes. Well-designed, ongoing, community-based media activities can provide just the right positive support to assure that enforcement activities will be forthcoming.

APPENDIX C3
ENVIRONMENTALLY BASED PREVENTION POLICIES AT THE LOCAL LEVEL

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INTRODUCTION

Over the last decade, the number of deaths and injuries related to impaired driving has declined significantly in the United States as well as in other industrialized countries. For example, in 1982, 57 percent of all highway fatalities in the U.S. involved a driver or pedestrian with a measurable blood alcohol level. By 1995, this figure had decreased to 41 percent of fatalities. The total number of traffic fatalities decreased from 43,945 in 1982 to 41,465 in 1995 (a decline of 6%) while alcohol-related fatalities decreased from 25,170 to 17,130 in the same time period (a decline of 32%) (NHTSA 1995).

Similar reductions have occurred in other industrialized countries, including Great Britain, Germany, the Netherlands, Canada, and Australia (Transportation Research Board 1994). Some countries have experienced slight increases in the last few years, causing some concern. The general trend, however, has been very encouraging. The harm that has been avoided is truly monumental. For example, in the United States, if alcohol-involved crash rates had continued unchanged since 1982, almost 13,000 more people would have died in 1993. Many thousands of serious injuries were also avoided.

In recent years, the political and economic mood has been such that policies that require centralized government control or funding are less popular and acceptable. A host of strategies exist, however, that can be implemented at the local level. This paper will provide an overview of research evidence regarding the effectiveness of common environmentally based strategies that can be implemented at the community or local level.

Environmental approaches are defined as strategies that are applied widely to whole populations or groups and that are designed to change the legal or social environment in order to change when people drink, how much they drink, and how they transport themselves after they drink. These approaches are distinct from treatment or other strategies designed to affect individual problem drinkers and drivers.

The strategies can be loosely divided into seven types:

- Availability of alcohol
- Sales and service policies
- Minimum purchase age
- Information strategies
- Controls on alcohol advertising and promotion
- Impaired driving strategies
- Transportation strategies

AVAILABILITY OF ALCOHOL

In the U.S., as well as most other countries, there has been a long history of governmental policies of varying stringency to control the availability of alcohol. These policies have been implemented at the federal, state or provincial, and local level both as a means of controlling consumption and generating and controlling tax revenues. In general, the theory underlying this type of policy strategy is that when obtaining alcohol is less convenient, less will be consumed and fewer problems will result (Edwards et al. 1994). In some cases, the restrictions are intended to decrease overall availability (and hence consumption); some strategies are designed to decrease availability in situations or at times when consumption is considered inappropriate (e.g., on Sundays or in public parks).

Availability strategies that will be discussed here are those that can be implemented at the local level, including limits on the location and density of alcohol outlets, controls on the hours and days of alcohol sale, and other local controls on availability.

Location and Density of Alcohol Outlets

Restricting the density of alcohol outlets is one way of making the purchase of alcohol less convenient, and therefore, possibly decreasing use. Fewer outlets per capita or per square mile can result in reductions in consumption and related problems (Rush, et al., 1986; Gliksman and Rush, 1986; Watts and Rabor, 1983; Gruenewald, Ponicki and Holder, 1993). Some analysts have speculated that if alcohol outlets are farther apart more motor vehicle crashes may occur as drivers travel to and from outlets (Colon et al., 1982). Recent research has shown, however, *that increased* alcohol outlet density is associated with *increased* alcohol-related traffic crashes (Scribner, MacKinnon, and Dwyer 1994).

Neighborhoods that are characterized by extremely high outlet densities may experience a variety of problems resulting from the presence of the outlets themselves, only partially related to levels of consumption. For example, the outlets can be a source of local nuisance problems (League of Cities, forthcoming). Alaniz and Parker (1994) report preliminary data that "indicate that alcohol outlet density contributes to youth violence rates even when poverty, ethnic and racial composition, family structure, and population density are held constant." In a study of 256 cities over a 20-year period, Parker and Rebhun (1995) found a strong correlation between alcohol outlet density and homicide rates even when beer consumption rates, poverty, inequality, region, racial composition, and population were held constant.

Communities can use zoning ordinances to space outlets farther apart and restrict outlets from certain locations. Communities can also require outlets to obtain conditional use permits, thus providing a tool for limiting density on a case-by-case basis (Wittman and Shane, 1988).

Hours and Days of Sale

Some studies have found effects on both alcohol consumption and related problems resulting from restrictions on hours and days of sale. Smith (1988) reports an increase in traffic crashes following the introduction of Sunday alcohol sales in Brisbane, Australia. Olsson and Wikstrbm (1982) found a reduction in alcohol sales as well as a reduction in intoxicated persons and police interventions in domestic disturbances when Swedish retail liquor stores were closed on Saturday on an experimental bases. Similarly, when Norwegian stores were closed on Saturdays, police reports of drunkenness and domestic problems on Saturdays and early Sundays decreased dramatically. There was little effect, however, on overall consumption.

Other Local Policies on Availability

In many jurisdictions, local governments apply various other restrictions to alcohol availability. For example, cities may prohibit alcohol in public parks or at beaches or they may have rules about how alcohol may be served at events in public places (such as at sports arenas and community centers). Gliksman and colleagues (1995) described the application of local option ordinances in Ontario as they are applied to such events as community celebrations, sports banquets, and fund raisers. Ordinances that may mandate management practices include such things as requiring server training for servers at events, making low alcohol drinks and food available, and providing safe transportation for the impaired. Many municipalities that have adopted these types of policies report reductions in problems such as underage drinking, fighting, and vandalism.

ALCOHOL SERVICE ISSUES

In recent years it has been increasingly recognized that when patrons of bars and restaurants drink to excess, the potential for a variety of problems, especially impaired driving, is increased. Roadside surveys show that 30 to 50 percent of drivers on the road who have been drinking are coming from bars and restaurants (O'Donnell 1985). Other possible negative outcomes of such drinking include violence or non-traffic injuries. Thus, environmental strategies that focus on alcohol service in establishments have received considerable attention.

Responsible beverage service is a technology that has been developed to decrease the probability that patrons of licensed establishments will drink to excess or suffer harmful consequences of drinking. These techniques include management policies (e.g., prohibiting reduced-price drinks, providing food and non-alcoholic beverages, avoiding overcrowding—which prevents servers from keeping track of patrons' consumption) and service techniques (e.g., recognizing signs of intoxication and learning to slow or refuse service to patrons who may be

intoxicated, finding alternate transportation for driving patrons who are impaired).

Evaluations of formal programs to train managers and servers in these techniques have shown them to be effective. Glicksman and colleagues (1993) found some changes in server knowledge and behavior after training. Other studies have found effects on beliefs and knowledge but not on behavior (Howard-Pitney et al. 1991). McKnight (1991) reported that a six-hour program delivered to servers and managers in 100 licensed establishments resulted in interventions by servers in 20 percent of cases where a patron appeared to be intoxicated; seven percent of these cases resulted in termination of service.

It is illegal in most if not all jurisdictions in the United States to serve alcohol to an intoxicated patron. Thus, the role of law enforcement can be important. In McKnight's study (1991) following the introduction of an enforcement effort in one county in Michigan, refusals of service to patrons who appeared intoxicated rose from 17.5 percent to 54.3 percent. At the same time, the proportion of arrested impaired drivers coming from bars and restaurants declined. In a comparison county, refusals of service rose to a significantly smaller extent and there was no change in the percentage of arrested impaired drivers coming from bars and restaurants. Thus, the combination of server training and enforcement of laws against service to intoxicated patrons seems to be much more effective than the training alone.

MINIMUM PURCHASE AGE

There is strong research evidence that establishment of 21 as the uniform minimum drinking age for alcohol has reduced alcohol-related crashes among young people (United States Government Accounting Office, 1987). In fact, the National Highway Traffic Safety Administration estimates that more than 14,000 traffic deaths have been averted since States started raising the minimum drinking age (NHTSA, 1995). There is also evidence that raising the drinking age to 21 has significantly reduced deaths due to suicide, pedestrian injuries, and other unintentional injuries as well as traffic fatalities (Jones et al., 1992). Parker and Rebhun (1995) recently reported that increases in the minimum purchase age decreased youth homicide, especially in those homicides in which the victim and the offender knew each other.

Increasing the drinking age also seems to reduce the amount of drinking even after age 21. O'Malley and Wagenaar (1991) found that early legal access to alcohol was associated with higher rates of drinking at ages 21 to 25 while youth who did not have legal access until 21 not only drank less during the 18 to 20 period, but drank less at ages 21 to 25. Thus, there does not seem to be any "rebound" effect of increased drinking once legal age is achieved. Similarly, raising the drinking age to 21 may not simply delay the occurrence of alcohol problems until a later age. Rather these problems seem to be permanently averted (Wagenaar, 1993).

Despite the minimum purchase age laws, young people continue to have access to alcohol and many of them drink. In 1991 the Office of the Inspector General of the U.S. Public Health Service released a report stating that loopholes in many states' minimum drinking age laws are one reason youth have easy access to alcohol (Office of the Inspector General, 1991). In addition, current laws are not well enforced. Wagenaar and Wolfson (1994) estimate that only two out of every 1,000 occasions of underage drinking results in an arrest. Moreover, the vast majority of arrests are of the minors themselves rather than the outlets or adults furnishing the alcohol to minors.

A number of strategies have been adopted by police and alcohol beverage control agencies to prevent underage drinking. Some of these strategies are aimed at sales outlets while others are directed at youth. The most common type of enforcement technique is "decoy" or "sting" operations. Underage decoys are sent into establishments to attempt to purchase alcohol. If an establishment sells alcohol to the decoy, it can be penalized. The use of successive sting operations in Denver, along with letters to establishments, was found to reduce sales to minors. Prior to the program, decoys were able to purchase alcohol in 59 percent of attempts compared to 32 percent of purchase attempts after the enforcement program had been implemented (Preusser, Williams, and Weinstein 1994).

INFORMATION STRATEGIES

A wide range of strategies designed to inform people about alcohol-related issues and thus (it is hoped) to change their behavior have been implemented for many years. These strategies may provide factual information, emotional appeals, and persuasive messages through a variety of media (school classrooms. television, posters in alcohol sale outlets). In general, informational campaigns have had limited effects on behavior (e.g., Vingilis and Coultes 1990). Two notable exceptions are an informational campaign designed to reduce impaired driving through the use of blood alcohol level calculators (Worden et al. 1989) and informational campaigns designed to publicize enforcement campaigns (Blomberg 1992).

CONTROLS ON ALCOHOL ADVERTISING AND MARKETING

People have consumed alcohol and suffered adverse consequences for thousands of years without any assistance from advertising. The current intensity and omnipresence as well as the provocative content of advertising and other marketing practices, however, have raised concerns from alcohol policy makers that advertising contributes to a variety of negative consequences. There are concerns that advertising:

- Pairs drinking with potentially dangerous activities, such as driving;

- Glamorizes drinking or associates it with sexual conquest, social success, or other highly motivating goals;
- Makes drinking appeal to young people under the legal drinking age; and
- Normalizes drinking and encourages the impression that everyone drinks, that drinking is appropriate in a wide variety of situations, that not drinking is unusual and nonnormative.

In assessing issues related to advertising (that is, advertisements in magazines, newspapers and on billboards as well as commercials on television and radio), it is also necessary to consider other marketing practices, such as promotional activities (e.g., distribution of novelty items, displays in alcohol outlets, special pricing), development and promotion of various beverage types (e.g., high alcohol beers, wine coolers, premixed cocktails), sponsorship of community and sports events by alcohol manufacturers, and so forth.

Policies that have been implemented or proposed at the local level to regulate advertising include:

- Controls on time and place of advertising (e.g., prohibiting billboards advertising alcohol in areas near churches or schools);
- Limitations on other types of marketing practices (e.g., restricting promotions on college campuses); and
- Elimination of some types of alcohol promotions (e.g., sponsorship by alcohol manufacturers of community events or events that are incompatible with drinking such as car races).

The research on alcohol advertising attempts to provide evidence in two general areas: 1) Whether policies restricting alcohol advertising are effective in reducing adverse effects; and 2) Whether there is a link between exposure to alcohol advertising and adverse consequences from alcohol use.

Bans on alcohol advertising in other countries provide some information concerning the effects of advertising on consumption, although the research is far from conclusive. A 14 month ban on all alcohol advertising in British Columbia was found to have little effect on consumption (Smart and Cutler, 1976). Similarly, a ban on beer advertising in Manitoba found no effects on consumption (Ogbourne and Smart, 1980). These bans only applied locally, however, and advertising from national media continued.

Prohibition of alcohol advertising in Norway and Finland provide a more clear test of the effects of advertising as outside media influences are more limited in these countries. Analysis of alcohol consumption rates before and after the bans were applied showed no effects of the ban (Holder 1993). Another study compared consumption rates in several different countries (Hungary, Finland, Norway, Denmark, the Netherlands, Australia, and Japan) with varying rules concerning advertising. Per capita consumption varied widely among the countries but there were no obvious differences between the countries with and without restrictions (Simpson et al. 1985).

Pooled data from 17 countries analyzed by Saffer (1991) indicated that banning broadcast advertising of alcohol resulted in reductions in alcohol abuse as measured by liver cirrhosis and highway fatality rates.

Ornstein and Hanssens (1985) examined limited restrictions within the United States on billboard advertising, consumer novelties and price advertising. Higher spirits consumption was found in states that allow price advertising and consumer novelties. No effect on beer consumption was found from billboard advertising and consumer novelties, while some increase in consumption was associated with price advertising. In contrast, Wilcox (1985) found no effects from price advertising in Michigan.

Thus, research on the effects of various aspects of alcohol advertising on alcohol consumption and related problems is inconsistent. One reason for this inconsistency may be that control of advertising is imperfect. As Smart (1988) concluded:

> Given the global nature of mass media, total advertising bans are almost impossible to achieve. An additional problem is that advertising effects may persist for a long time after a ban has been imposed and hence effects on sales may be long delayed. Perhaps an entire generation never exposed to alcohol advertising would drink less than those exposed to advertising for years and then a ban.

Particular concern has been expressed regarding the effects of exposure to alcohol advertising on children and youth. Grube et al. (1991) examined the awareness of television beer advertising among fifth and sixth graders as related to their beliefs about alcohol, intentions to drink when they were older, and knowledge about beer brands and slogans. The study found that children tend to believe the commercial messages in that beer is associated with good times, not with health consequences. Children who pay more attention to beer commercials were found to be less skeptical about the messages and children who are exposed to more commercials are more likely to expect to drink as an adult.

Grube and Wallack (1991) concluded that "awareness of advertising *causes* children to be more favorably predisposed to alcohol and drinking." It must be kept in mind here, however, that among the children in the sample (all from the same Northern California community), the range of exposure to advertising is probably quite narrow. Beer advertising is so pervasive in American society that children are unlikely to be able to avoid it.

Other research has examined the appeal of advertising to small children. Several studies have focused in particular on the effects of advertisements including the use of the "Joe

Camel" character, finding, for example, that 30 percent of three year olds and over 90 percent of six year olds could match the camel character with cigarettes (Fischer 1991). Another study showed the success of the "Joe Camel" campaign in increasing sales of Camels (Pierce, 1991). While these studies focus on cigarette advertising, it is likely that such findings might result from similar alcohol advertising campaigns.

Many communities have attempted to take control of local advertising and promotions. Some have questioned the traditional sponsorship of community and sporting events by alcohol companies. For example, people in Oakland, California challenged the planned distribution of flashlights with Bud Lite inscribed on them at a baseball game. Annheuser-Busch intended to give the flashlights to anyone at the ballpark 16 years of age or older *(Prevention File,* 1993). Other communities have passed ordinances against alcohol advertising on billboards (controlling billboard density, content, location, or, in some cases, banning billboards altogether). Low income and minority communities have become increasingly aware of the fact that their communities often have a greater density of alcohol and tobacco billboards. Some have been galvanized to take quite militant action against the billboards and the companies that sponsor them (The Marin Institute, 1993). Some communities have implemented conditional use permits for alcohol outlets limiting the nature of advertising and the use of promotional materials in the outlets (for example, limiting or prohibiting advertisements visible from the street) (The Marin Institute, 1993).

The effects of any of these actions on alcohol consumption and related problems has not been measured. It seems likely, however, that such actions and the attention they attract from the community at large raise awareness of alcohol-related problems and the fact that the community can, to some extent, take control of the environment surrounding alcohol use and misuse. It is possible that this awareness and the increasingly proactive stance of the public and policy-makers can contribute to reductions in alcohol-related problems.

IMPAIRED DRIVING POLICIES

This paper will discuss the research evidence related to impaired driving policies that can be implemented at the local level. These include enforcement programs and some sanctions.

Enforcement

It is important to note, in any discussion of enforcement, that in terms of traffic safety, detecting impaired drivers and removing them from the road can have only a small effect. No matter how effective the police are and how many impaired drivers they arrest and take off the highway, they can never hope to catch more than a tiny proportion of the impaired drivers on the road. Currently, officials estimate that the chances that a drinking driver will be arrested are as low as one in 1,000 (Sweedler 1991). Inevitably, many of these drivers will be involved in crashes before they are caught by police. By far the most effective way of preventing crashes is to prevent drinking and driving before it occurs. One way of doing this is to convince the driving public that if they drink and drive, they are likely to be caught and promptly punished in a significant way. Some changes in enforcement policy have both increased the likelihood of apprehension and the public's perception of the likelihood.

The most well-known enforcement approach in increasing deterrence is random breath testing. The experience of the Australian states of New South Wales and Victoria provides the most dramatic examples of its effectiveness. Random breath testing was introduced in New South Wales in 1982. There was an immediate 36 percent drop in alcohol-related fatal crashes, as compared to the previous three years (Homel, Carseldine and Kearns 1988), with a sustained 24 percent decrease in single-vehicle night-time accidents over the next five years (Homel, McKay, and Henstridge 1995). In Victoria, the proportion of drivers killed over the legal blood alcohol limit (.05 percent) declined from 49 percent in 1977 (when random breath testing was introduced) to 21 percent in 1992 (Moloney 1995).

The success of random breath testing in these Australian states is attributed to the principles laid out by Homel and colleagues (1988). They found that in order to be maximally effective, the campaign should be highly visible, conducted as often as possible, rigorously enforced so as to ensure credibility, and well publicized. For example, in Victoria it was found that when random breath testing was carried out by officers in normal police vehicles in combination with their other duties it was not nearly as effective as when it was carried out using highly conspicuous special purpose vehicles. Testing is carried out at times and in places designed to attract public and media attention and is combined with saturation advertising (Moloney 1995).

Random breath testing efforts in Sweden and in New Zealand have had less dramatic results, perhaps because the campaigns were not carried out with the vigor and persistence that characterizes the efforts in New South Wales and Victoria (Törnros 1995; Bailey 1995).

In the United States, random breath testing is not constitutionally permissible. Instead, some jurisdictions use sobriety checkpoints. The key difference between random breath testing and sobriety checkpoints is that in a sobriety checkpoint, the enforcement officer cannot ask for a breath sample unless there is probable cause to believe that the driver has been drinking. Research has indicated that officers do not detect a substantial portion of drinking drivers under these circumstances (Jones and Lund 1985). The use of passive breath sensors substantially increases the effectiveness of sobriety checkpoints (Voas, Rhodenizer, and Lynn 1985).

Researchers have observed that aggressiveness and conspicuousness of the sobriety checkpoints and widespread publicity surrounding them is important to their full success as deterrents (Hurst 1991). A study by Ross indicated that communities that used sobriety checkpoints experienced significant decreases in alcohol-related traffic crashes. The programs tended to be short-lived, however, as police turned to other crime problems, such as drugs (Ross 1992). Unfortunately, the harm reduction potential of sobriety checkpoints was likely to be much greater than. that of the other police priorities.

Penalties

In recent years, new penalties for impaired driving have been tried, especially with multiple offenders. Increasingly popular are vehicle-based sanctions. In several states, the vehicle driven by a multiple offender may be impounded, immobilized with a "club" or "boot" device, or confiscated. In some jurisdictions, the license plate, rather than the vehicle, is confiscated or impounded, or a special tag is issued identifying the vehicle as being owned by an offender. Another vehicle-based sanction is the installation of ignition interlock devices which prevent a vehicle from being driven unless the driver produces a breath sample that is free from alcohol. Each type of penalty results in logistical and legal problems. Evaluations of some of these strategies have shown positive effects. For example, in Oregon, the use of a special sticker on the cars of convicted impaired driving offenders led to a significant decrease both in recidivism among the drivers who received the sticker and in overall impaired driving in the state (Voas and Tippetts 1994). Evaluations are currently under way for some of these penalties, but outcome results are not yet available (Voas 1992). Many of these penalty programs can be imposed by local jurisdictions.

CHANGES IN THE TRANSPORTATION ENVIRONMENT

The characteristics of the transportation environment can affect the degree to which consumption of alcohol results in traffic crashes. Americans depend on private automobiles, making driving after drinking more likely. Approaches have been tried based on providing alternative means of transportation. Efforts have also been made to improve the safety of roads so that crashes are avoided or minimized. The safety of the vehicle itself is critical once a crash has already occurred.

Transportation Policy

Changes in transportation policy have not been widely considered as a way of decreasing impaired driving in the U.S., nor has the nature of the transportation environment usually been a part of the examination of alcohol availability. For example, many bars are located in places where the only possible transportation are private automobiles. Similarly, public transportation in most U.S. cities stops running hours before bars close. In many European countries, public transportation is more available and more widely used.

Strategies to provide alternative means of transportation include designated driver programs and "safe rides" programs that provide free or reduced priced taxi rides or other forms of transportation. In Scandinavian countries, the use of designated drivers who do not drink or who drink very little has been widespread for many years. In the United States, such practices (especially the designated driver) are frequently not used appropriately (Stewart et al. 1995).

Concerns have been raised that the provision of transportation alternatives may encourage drinking to the point of serious impairment, thus leading to other negative effects of alcohol, including crime, violence, and non-traffic accidental injury (DeJong and Wallack 1992). Recent research indicates that among a college student sample, 22 percent of students who use a designated driver drank more than their usual amount the last time they were the passenger of a designated driver (DeJong, Wechsler, and Winsten, under review).

Improved Roadway and Vehicle Safety

Roadway and vehicle safety policies have not received widespread attention as a way of decreasing alcohol-related traffic injuries. Unsafe driving will always occur and in many cases will involve alcohol. Thus, reducing the hazards on roadways and improving the crashworthiness of vehicles can make a life-or-death difference when prevention and deterrence efforts have failed.

The modification of roadside hazards provides one example of how roads can be made safer. A frequent type of alcohol-related fatal crash involves hitting a roadside hazard, such as a tree or utility pole. Perchonok et al. (1978) found that the frequency of collisions with utility poles declined by about five percent for every six feet of distance between the poles and the roadway.

Another important strategy for decreasing alcohol-related injuries is to increase safety belt use. Mandatory seat belt use laws have been shown to decrease traffic fatalities by between five and 15 percent (Lund et al. 1987; Skinner and Hoxie 1988). This percentage is lower than might be hoped because the vehicle occupants who are most likely to be involved in crashes, including impaired drivers, are least likely to wear safety belts (Williams and Lund 1988). It can be assumed, however, that as safety belt usage increases to very high levels (as seen, for example, in the United Kingdom where use rates approach 90 percent) even impaired drivers are more likely to buckle up. Local efforts to enforce or encourage seat belt use may be effective in increasing usage.

CONCLUSIONS

While some effective programs for the reduction of impaired driving must be imposed by State or Federal governments, many powerful strategies can be implemented at the local level by communities who are committed to the safety and welfare of their residents. Moreover, communities with this sort of commitment can eventually influence higher levels of government to maintain and reinstate important safety priorities.

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APPENDIX C3A
LOWERING STATE LEGAL BLOOD ALCOHOL LIMITS TO 0.08%: THE EFFECT ON FATAL MOTOR VEHICLE CRASHES

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ABSTRACT

The first five states that lowered legal blood alcohol limits to .08% to reduce alcohol-related fatal traffic crashes were paired with five nearby states that retained a .10% legal standard. Within each pair the maximum equal available number of pre- and post-law years were compared. States adopting .08% laws experienced 16% and 18% relative post law declines in the proportions of fatal crashes involving fatally injured drivers with blood alcohol levels at .08% or higher, and .15% or higher. If all states adopted .08% legal blood alcohol limits at least 500-600 fewer fatal crashes could occur annually.

INTRODUCTION

In 1994 16,589 people died and nearly 297,000 persons were injured in alcohol-related traffic crashes.[1] Driver impairments begin at blood alcohol levels well below the .10% legal standard in most states. Experimental laboratory studies have shown that at .08%, a level reached by a 150-pound person consuming four drinks an hour on an empty stomach, there is reduced peripheral vision, poorer recovery from glare, poor performance on complex visual tracking, and reduced divided attention performance.[2] Driver simulation and road course studies have revealed poor parking performance, impaired driver performance at slow speeds and steering inaccuracies.[3] Roadside observational studies have identified speeding and breaking performance deterioration.[4] A national comparison of drivers in single vehicle fatal crashes with drivers not in fatal crashes stopped at roadside surveys indicate that each .02% increase in blood alcohol level nearly doubles the risk of fatal crash involvement. In all age and sex groupings the fatal crash risk at a blood alcohol level of .05%-.09% was at least 9 times greater than at zero blood alcohol.[5]

To reduce alcohol related fatal traffic crashes 14 states have lowered the legal blood alcohol limit from .10% to .08%. Johnson and Walz[6] monitored six different measures of driver involvement in alcohol related fatal crashes in the first five states to adopt .08% laws. Nine of the thirty pre- to post-law comparisons identified statistically significant decreases. However, comparison areas were not included to assess whether the post law declines were independent of general regional trends.

This study assessed whether relative to nearby states, states adopting a .08% legal limit experienced a reduction in the proportion of fatal crashes involving

- Fatally injured drivers with blood alcohol levels above .08% or higher and .15% or higher.
- Any driver with a blood alcohol level at .08% or higher and .15% or higher.

METHODS

Prior to 1992 five states lowered legal blood alcohol limits from .10% to .08%: Utah in August 1983, Oregon in November 1983, Maine in August 1988, California in January 1990 and Vermont in July 1991.

Each of those states was paired with a nearby state that retained a .10% legal limit. Within each pair the maximum equal number of available pre- and post-law years were compared. Utah was compared to Idaho from August 1976 to July 1991, Oregon with Washington from November

1976 to October 1991, Maine with Massachusetts from August 1984 to July 1993, California with Texas from January 1986 to December 1993, and Vermont with New Hampshire from July 1990 to June 1993.

We initially focused the analysis on fatally injured drivers with blood alcohol levels of .08%+ to minimize potential bias resulting from variation in testing policies. In study states, during the analysis period blood alcohol test results were available from the U.S. Fatal accident Reporting System on 81% of fatally injured drivers. Because not all drivers in fatal crashes are fatally injured, we also examined the proportion of crashes with any driver with blood alcohol levels of .08%+. We included analyses of the proportion of crashes with drivers and fatally injured drivers with blood alcohol of .15%+ to examine whether .08% laws reduce crashes involving severely intoxicated drivers.

We examined the proportion of fatal crashes involving drivers and fatally injured drivers at .08%+ or .15%+ instead of the absolute number of crashes with drivers with these alcohol levels to control for the long-term downward trend in total fatal crashes from 1980 to 1993[7] and changes in exogenous variables that might influence the total number of fatal crashes, such as the economy, safety characteristics of vehicles and highways, and the price of fuel.

Within each state, we describe the change in the level of alcohol involvement in fatal crashes from before to after the implementation of a .08% law through the ratio (relative risk) of the post-law to the pre-law proportion of crashes with drivers with high blood alcohol levels. A relative risk less than 1.0 indicates a reduction in the level of alcohol involvement. This relative risk is related to the percent change in the proportion of crashes with drivers with high blood alcohol level: % change = $100\% \times (p_{post} - p_{pre}) / p_{pre}$ = RR - 1 and we describe changes through this percent change.

Within each state pair, we calculated the relative change and the 95% confidence interval in the proportion of alcohol involved crashes in the law state relative to the control state as the ratio of the two relative risks. Subtracting one from this ratio gives the percent change in the proportion of alcohol involved crashes in the law state relative to the control state.

We used meta-analytic methods[8] to calculate an overall relative change due to .08% laws across our set of five state pairs. States implemented their .08% laws in different years, and under different circumstances. We conducted a test of the heterogeneity of effects across the five state pairs to test the significance of state to state variation in effects. Regardless of the observed variation in effects, we treated the relative change in the proportion of crashes involving drivers with high alcohol level as a random effect in our meta-analysis. We calculated a pooled estimate and standard error for the natural log of the ratio of relative risks from each state pair. This estimate and its 95% confidence interval are transformed back to the scale of the ratio of relative risks for presentation, and subtracting one from this ratio gives an estimate for the overall percent change in the proportion of alcohol involved crashes in law states relative to control states.

RESULTS

Four of the five .08% law states showed a reduction relative to their control state in the proportion of crashes with a fatally injured driver with blood alcohol at .08% or greater (Table 1). The 95% confidence intervals for these relative reductions remained below 1.0 for three of the five law states. The variation across the five law states in these relative reductions was not significant ($p = .168$). The pooled estimate of the law effect suggests that overall, the .08% law states experienced a 16% post-law reduction in the proportion of fatal crashes with a fatally injured driver with blood alcohol at .08% or greater (with 95% confidence limits from a 22% reduction to a 10% reduction). Overall the .08% law states also experienced an 18% post-law reduction in the proportion of fatal crashes with a fatally injured driver at .15% or greater (95% C.I. = 23%, 13%). (Table 2). Similar results were observed for the proportion of fatal crashes with any driver at .08% or greater (a 13% reduction) or at .15% or greater (a 19% reduction, data available on request).

DISCUSSION OF RESULTS

Several methodologic issues should be considered in interpreting the results of this study. First, blood tests were obtained from 88% of fatally injured drivers in the .08% law states and 74% in comparison states and these proportions did not change from pre to post law years. This high consistent rate of testing favors the validity of results measuring fatally injured drivers. Blood tests were completed on half of all drivers in fatal crashes in study states during theanalysis.

Second, unlike previous studies this analysis included comparison states to control for regional fatal crash trends.

Third, .08% law states may have been more concerned about alcohol impaired driving and responsive to legislative initiatives to reduce the problem. They were more likely to have other stringent laws demonstrated to reduce alcohol-related fatal crashes. All .08% law states had criminal per se laws in effect prior to the study, while only two comparison states did, Texas and Vermont. The comparison states of Idaho and Washington introduced criminal per se laws during the study. It is likely that the .08% law effects were independent of criminal per se laws. Post .08% law alcohol involved fatal crash reductions were seen both in pairs of states where both .08% law states and comparison states had criminal per se legislation throughout the study and those where compari-son states adopted the law during the study period.

TABLE 1 Proportion of Fatal Crashes with a Fatally Injured Driver with Blood Alcohol of 0.08% or More Before and After Passage of .08% Legal Blood Alcohol Limits

	Proportion Prior to .08% Law (n's)	Proportion After .08% Law (n's)	% Change in Proportion (RR)	Ratio of RR's (95% CI)
OR (.08%)	0.29 (1275/4455)	0.24 (1023/4186)	-15% (0.85)	0.82 (0.75, 0.89)
WA	0.28 (1735/6184)	0.29 (1582/5390)	+5% (1.05)	
UT (.08%)	0.14 (319/2252)	0.16 (329/2085)	+11% (1.11)	0.78 (0.64, 0.95)
ID	0.15 (310/2057)	0.22 (382/1773)	+43% (1.43)	
ME (.08%)	0.26 (262/1024)	0.22 (207/942)	-14% (0.86)	0.93 (0.77, 1.12)
MA	0.22 (726/3241	0.21 (562/2703)	-7% (0.93)	
CA (.08%)	0.22 (4275/19370)	0.19 (3174/16278)	-12% (0.88)	0.82 (0.77, 0.88)
TX	0.20 (2364/11924)	0.21 (2340/10961)	+8% (1.08)	
VT (.08%)	0.25 (47/186)	0.25 (46/181)	+1% (1.01)	1.45 (0.87, 2.44)
NH	0.22 (62/280)	0.15 (34/222)	-31% (0.69)	
Overall Law Effect				0.84 (0.78, 0.90)

TABLE 2 Proportion of Fatal Crashes with a Fatally Injured Driver with Blood Alcohol of 0.15% or More Before and After Passage of .08% Legal Blood Alcohol Limits

	Proportion Prior to .08% Law (n's)	Proportion After .08% Law (n's)	% Change in Proportion (RR)	Ratio of RR's (95% CI)
OR (.08%)	0.22 (992/4455)	0.18 (769/4186)	-17% (0.83)	0.79 (0.70, 0.88)
WA	0.20 (1266/6184)	0.21 (1158/5390)	+5% (1.05)	
UT (.08%)	0.10 (220/2252)	0.12 (245/2085)	+20% (1.20)	0.91 (0.72, 1.15)
ID	0.11 (232/2057)	0.15 (265/1773)	+33% (1.33)	
ME (.08%)	0.19 (198/1024)	0.15 (143/942)	-21% (0.79)	0.77 (0.61, 0.97)
MA	0.15 (493/3241	0.15 (418/2703)	+2% (1.02)	
CA (.08%)	0.16 (3009/19370)	0.14 (2291/16278)	-9% (0.91)	0.82 (0.76, 0.89)
TX	0.15 (1780/11924)	0.16 (1804/10961)	+10% (1.10)	
VT (.08%)	0.19 (36/186)	0.19 (34/181)	-3% (0.97)	1.23 (0.68, 2.23)
NH	0.17 (48/280)	0.14 (30/222)	-21% (0.79)	
Overall Law Effect				0.82 (0.77, 0.87)

All five .08% law states also had administrative licence revocation laws during the study, three implemented within one year of their .08% law. Administration licence revocation laws have been associated with 5% declines in fatal crashes[9]. Among the control states only New Hampshire had this law during the study period. This restricted our ability to separate the effects of .08% legislation from administrative licence revocation laws. Maine was the only .08% law state to implement an administrative licence revocation law prior to the study period and hence the only state where post .08% law alcohol involved fatal crash reductions could be clearly separated from the effects of administrative licence revocation laws passed during the study period.

Finally, this analysis focused only on fatal crashes. Studies of other traffic laws indicate that the magnitude of their impact can be influenced by accompanying educational and enforcement efforts.[10,11,12] Studies of .08% laws are needed that not only assess their impact on fatal crashes but that also measure how effectively the laws are implemented.

On balance, the results of this study suggest .08% laws, particularly in combination with administrative licence revocation, reduce the proportion of fatal crashes involving drivers and fatally injured drivers at blood alcohol levels of .08% and higher and .15% and greater. This legislation warrants consideration in other states.

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APPENDIX C3B
DISCUSSION COMMENTS

Evelyn Vingilis
University of Western Ontario

The topic of the presentation is environmental strategies, yet, our approaches to the "topic of combating impaired driving in an era of diminished resources and shifting priorities" are still following the same "dominant paradigm" of the past 20 years. Unless we make a paradigm shift, we will not combat the problem; we will be left in the dust.

There are four areas we should be exploring in order to make our paradigm shift. Economic, environmental, public health and business literature all have something to offer us in understanding how to make our paradigm shift.

First, the literature in the business sector has been very clear in the last 10 years as to what corporate visions doom companies to obsolescence and self-destruction and what visions allow for expansion. Examples abound on how corporations who defined themselves narrowly extinguished themselves and how corporations who diversified and saw themselves more broadly survived and thrived. As long as we see impaired driving only within the context of drinking-driving legislation, enforcement adjudication and sanctioning or as alcohol control policies, we will be doomed to failure in maintaining it as a priority. Yet, there are many, many entry points in other areas to bring these issues forward. For example, in terms of international relations and free-trade agreements, the clauses of GATT, NAFTA and the like contain the following principles, and I am not kidding about this, I challenge you to read these international trade agreements yourself. First, the overriding principle is to maximize corporate profits and the principle of maximum profits overrides all other national legislation. For example, with regard to NAFTA:

1. It has no minimum labor standards, nothing like a minimum wage requirement, occupational health and safety regulations.
2. It recognizes no labor rights: no rights regarding organizing, collective bargaining, child labor, forced labor, racial or sexual harassment prohibitions.
3. Neither labor unions nor individual workers have any standing in NAFTA's dispute settlement procedures.
4. There are no mechanisms for labor complaints, no rules of procedure or regulatory codes to be enforced.
5. Because the prescribed risk assessment procedure includes balancing economic benefits and costs against those of health and safety, worker safety may be traded off against high profits.
6. The only recognized unfair trade practices in NAFTA are those that destroy expected or real corporate profits, not those that destroy people's lives, the quality of peoples lives or even whole communities.
7. Finally, and most importantly, in the event of unequal regulations, for example, safety standards for motor vehicles, the agreement states that the regulations must "harmonize" down to the lowest level.

Could any of these clauses have an effect on impaired driving? Under NAFTA or GATT any country could challenge your regulations for vehicles, drug testing and safety regulations for transportation employees, etc, etc, etc. Are any of these things happening? You bet they are! While we sit here developing recommendations under the assumption that we are all living in sovereign nation-states, international agreements are making the rules for us. In 1997, Canada will reduce their higher motor vehicle safety standards to meet with the U.S. because of U.S.-Canada free-trade agreement. Prior to this time most American vehicles could not be imported into Canada without expensive modifications to meet our higher safety standards. No more! In fact there have been further negotiations among the U.S., Canada and Mexico regarding the harmonizing to Mexico's requirements.

What about alcohol? Ontario breweries introduced a high alcoholic content beer which was retailing at the same price as regular and light beer. Guess what the young person's beverage choice was discovered to be? Yes, the beer with the biggest bang for the buck! However, when MADD and various public health organizations lobbied the government to change the pricing policy, this was what the letter, from the Minister herself said:

> 1) Price: Minimum Pricing was one of the major issues negotiated in the Canada/US trade agreement. Ontario continues to have three legislated and one voluntary minimum price categories. Any attempt to increase the minimum price of high alcohol beer, at this stage would necessitate reopening the agreement which would put other crucial components of the agreement in jeopardy. Under the federal Competitions Act, brewers would be precluded from collectively raising the minimum price of high alcohol beer as this would constitute illegal price fixing." (Churley, Minister of Consumer and Commercial Relations, Aug. 2, 1994).

Where are the alcohol and road safety specialists in presenting briefs, lobbying etc. under these issues?

Next, environmental issues, in Canada at least, are a very big and popular concern. Cities are being redesigned, legislation being redrafted to accommodate more bicycles, public transit, etc. These are major issues for the public. Again they have ramifications for impaired driving, and why are we not jumping on the bandwagon?

Finally, skyrocketing health care costs, evidence-based health care, managed care, prevention, aging population, high medicinal drug use among our aging population, are other current issues. Research is coming in that the managed care system is very much short-changing alcohol and drug rehab programs, even though there has come out very strong RCTs showing the success of certain drug rehab programs. Again, these rationalizing health care movements, shifting demographics and exponentially increasing medicinal drug sales in our countries have major impaired driving ramifications. Where is the alcohol, drug and traffic safety community in all this?

The bottom line is that we are not seeing the big picture and are not seizing the opportunities to put our foot in the door to make our concerns known. The consequence is that we are still debating after all these years the merits of the horse and buggy, in an era of ITS.

APPENDIX C4
DRUNK DRIVING: THE MIDDLE AGE OF A SOCIAL PROBLEM

H. Laurence Ross
University of New Mexico

This paper summarizes and interprets material presented at a panel I convened at the 1995 Washington meeting of the Transportation Research Board. The session was entitled "Drunk Driving: Yesterday's Problem?" and the presenters were invited to address the issue from different viewpoints, including the academic, the governmental, and the activist. The Proceedings of the panel have been published in the Transportation Research Board Circular, "Future Challenges in Alcohol and Other Drugs in Transportation," (Washington, D.C., January 1996). Page numbers here refer to the Circular. The presentations led me to the conclusion, offered here in the context of natural history or lifestyle perspectives on social problems, that drunk driving is a middle-aged social problem. That is, it is mature, and if lacking the vigor of youth it is more established and more sophisticated in its formulation than in earlier developmental stages. Although the prognosis in these theoretical perspectives is decline and death for the drunk driving problem due to competition for resources from other social problem claims, that catastrophe appears distant at this time.

The American drunk driving problem was "born," in constructionist terms, around 1980. Unlike many social problems, its emergence was not signaled by a crisis in underlying conditions. Alcohol-impaired driving, with consequent crashes, was continuously prevalent throughout the automobile era, was reduced during Prohibition, but returned in force following Repeal. There was no particular inflection in the curve of traffic-related deaths in the vicinity of 1980. That year was significant, however, in marking the rise of conservative politics, symbolized by the election of President Ronald Reagan. The world-view of conservatives, dominant in the incoming administration, saw socially problematic conditions as the product of immoral and irresponsible behavior. Institutional causes were overlooked, and deterrent countermeasures aimed at bad

people were seen as the appropriate social response.

In this political climate, the tragic experience of a young California mother formed the seed of a new social movement. Candy Lightner's teen-aged daughter was killed in a crash involving an alcohol-influenced driver. Mrs. Lightner's memorial to her daughter was an organization, Mothers Against Drunk Drivers, which became the largest and most important citizens' activist group in recent history. MADD was launched on favorable political terrain, as previously noted. Moreover, it quickly obtained the support of some powerful and monied allies, namely, an agency of the U.S. Department of Transportation and elements of the alcoholic beverage industry.

The National Highway Traffic Safety Administration had since its 1966 inception noted the importance of alcohol in causing highway crashes, and in the 1970's launched a series of community-based countermeasure programs largely premised on deterrence. Subsequently, however, during the Carter administration the agency emphasized the creation of vehicle standards with the purpose of reducing crash forces on the human body. This program elicited considerable resistance from car manufacturing interests, and Congress went so far as to cancel a standard that required installation of ignition interlocks to prevent starting, a vehicle unless the seat belt was fastened. In 1980, faced with the threat of substantial budget cutting and reductions in force, NHTSA rediscovered drinking and driving and launched new initiatives that fell nicely within administration priorities. Reagan even convened a Presidential Commission on Drunk Driving which, loaded with law enforcement and politicians (and including Candy Lightner), issued a highly deterrence-oriented report and criminal-justice-centered program followed by the successor organization, the National Commission Against Drunk Driving. NHTSA's activities included support for the new citizens' movement, which coalesced around MADD. Grants were made for organizing and training citizen activists and rendering them effective in securing state and local legislation.

Moreover, MADD was supported by the alcoholic beverage industry, particularly the brewers. The industry never denied that its product produced negative social consequences, but these were blamed on a small minority of abusers and misusers. Normal drinking was viewed as beneficial, and the industry offered to help in preventing the problems associated with abnormal drinking. Candy Lightner and MADD never directly attacked alcohol, but rather focused on the combination of drinking and driving, especially that done by confirmed "drunks." This view nicely corresponded with that of the industry. Brewers, notably Anheuser-Busch, not only provided direct grants for MADD, but like NHTSA made important nonmonetary contributions to the cause. An executive of Anheuser-Busch sat on the Board of Directors of MADD. A magnificent public relations machine was made available to the fledgling organization, and the mass media, heavily dependent on alcohol advertising, provided friendly publicity resources that helped make MADD one of the best known and best liked charities in the country.

At the Washington panel, MADD President Beckie Brown (pp. 12-16) related that her organization grew dramatically in the first half of the 1980's, from a single chapter in Fair Oaks, California, to a national organization with hundreds of chapters. Its budget recently has exceeded $41 million. It stimulated state and local legislatures to adopt more than a thousand laws in the 1980's. The vast majority of these centered on such deterrence-based issues as harsh and mandatory punishment for drinking, drivers. Polls have shown progressively larger majorities of the public endorsing these legal changes and progressively smaller numbers declaring tolerance for drunk driving and admitting their participation in this behavior. Importantly, police arrests for DWI increased by more than 50% to nearly two million per year in 1982, and remained close to that figure for the balance of the decade.

Growth of the citizens' activist movement peaked early in the decade, as shown in Figure 1. MADD does not make membership figures available, and their estimates of millions of members and supporters include anyone who ever made a contribution. The termination and combination of chapters, known anecdotally in several circumstances, is not reported. We have only speculation to rely upon in suggesting that membership and activity have at least moderated, if not actually declined.

Media attention in drunk driving likewise peaked in the early 1980's, as shown in Figure 2. John McCarthy (pp. 9-10) suggests that publicity concerning drunk driving was far more concerned with the activities of public officials, including legislative, judicial, and police activity, than directly with the activities of citizen activists and organizations like MADD.

Plateaus characterize many of the measures of the drunk driving problem during the last half of the 1980's, and there are indications of some decline in media attention to drunk driving in the new decade, though most statistics are preliminary. This decline is especially notable in contrast to increases in media attention to drugs and crime. In 1989, crime was more than ten times as likely to be the subject of national newspaper articles than drunk driving, and articles on drugs were eight times as prevalent.

Russell Fontaine (pp. 10-12) finds a similar pattern in the academic literature indexed in the DIALOG data base. The literature shows significantly increased attention to drunk driving in the mid-1980's and a decline at the end of the decade, as measured by the ratio of "drinking driving" mentions to articles on alcohol and driving in general. Scholarly articles on violence increased at nearly three times the rate of articles on alcohol overall, between 1977 and 1993.

As of the mid-1990's, the social problem of drunk driving has changed in several ways from the prior decade. First, it may be declining in vigor, for two reasons. One is that drunk driving competes for limited media resources with other social problems, some of which possess considerable novelty. A story on drunk driving implies one

less on AIDS, spouse abuse, gun violence, drugs, and similar problems. Second, basic statistics suggest achievement of some success in addressing the problem. The obverse of this success is the impression of reduced urgency. Alcohol involvement in fatal crashes declined from nearly 60 percent in 1980 to less than 50 percent in 1989 and 44 percent in 1993, according to James Hedlund of the National Highway Traffic Safety Administration (pp. 17-18). Despite decreasing arrests, from around 1.8 million in the late 1980's to 1.6 million 1992 and 1.5 million in 1993, the average blood alcohol concentration among those arrested declined significantly.

But if the social problem of drunk driving seems to be abating according to some measures, it would be a great exaggeration to sign its death certificate. The media, especially the electronic ones, continue to devote considerable attention to it. For example, 82 public service announcements were shown during NCAA basketball tournament and football bowl games in 1994. Likewise, more than 200 television news segments on drunk driving were recorded in major media markets on December 15 and 16, 1994. Moreover, new legislative initiatives continue to appear. Since 1990, nine states have newly enacted administrative license revocation laws, seven have lowered the tolerated blood-alcohol concentration to 0.08 percent, and 20 have enacted zero tolerance laws for drivers too young to drink legally.

The middle age of the drunk driving problem is associated with an increasing role for a new paradigm that recognizes the social causes of problems, in this case the intersection of recreational and transportation institutions, and views appropriate policy as institutional change rather than merely threats and punishment. The landmark in this weather change was the Surgeon General's Workshop on Drunk Driving, which was held at the end of 1988, with recommendations published in 1989. Issues such as the price and availability of alcohol bulked large in the proceedings, with recommendations to increase taxes and modify marketing. Although the prior paradigm, centered on deviant behavior, continues to dominate public discussion of drunk driving it is being challenged. Even MADD now supports restraint of alcohol advertising and increased liquor taxes to fund other programs, positions that do not sit well with its original allies.

Although NHTSA officials still recommend fixes on innocent victims, villainous repeat offenders, and youth in order to maintain drunk driving's place on the social agenda, other actors with broader, public health, perspectives have joined in the fray and are helping to redefine the problem of drunk driving, to shift understanding concerning its causes, and to recommend additional policies that were overlooked in the 1980's agenda. The previously dominant paradigm for understanding drunk driving in criminal justice terms is now met by a broader, challenging paradigm.

The future of drunk driving as a social problem appears to me to be assured, though without the priority that it obtained in the 1980's. The approach through deterrent policy has been effective, but perhaps its limits have been reached. American jurisdictions have among the harshest penalties in the world for drunk driving, and administrative license revocation increases the certainty and swiftness of punishment. Police are probably doing all they can to provide certainty of arrest, given limitations, and reasonable expectations for the future of government spending do not provide much hope for an expansion of resources here. To the extent that the challenging paradigm is successful, policies based on controlling drinking and providing transportation alternatives to the private car may join deterrence in later stages of the life cycle of the drunk driving problem.

APPENDIX C5
FEDERAL-STATE PROGRAMS FOR REDUCING IMPAIRED DRIVING

Adele Derby
National Highway Traffic Safety Administration

The National Highway Traffic Safety Administration currently uses three comprehensive nationwide approaches in working with the states on programs to reduce impaired driving: (1) the 402 formula grant program, (2) the 410 alcohol incentive program; and (3) the zero tolerance sanction program.

The State and Community Highway Safety Grant Program was enacted by the Highway Safety Act of 1966 as Section 402 of Title 23, USC. Grant funds are provided to the States, the Indian Nations and the Territories each year, according to a formula based on population and road mileage to encourage and facilitate implementation of programs to improve highway safety. States identify their key highway safety problems and the most effective strategies to address them. The grants provide "seed" money for safety programs and leverage public and private sector resources for highway safety. Funds are primarily spent in nine priority areas: alcohol, occupant protection, police traffic services, emergency medical services, traffic records, motorcycle safety, pedestrian and bicycle safety, speed and roadway safety.

During FY '96, NHTSA put in place a new performance based process for the management of the 402 program. Why the change? Mainly because the mood of the public changed; people are demanding less government intrusion and want to see results from the government they have. Performance based management is being embraced by all parts of the public sector:

- Congress passed the Government Performance Review Act which requires Federal agencies to identify performance measures for their programs and report on progress through their budget process.

- The Administration undertook a National Performance

Review under Vice President Gore and rewarded process improvements which demonstrated that government worked better and cost less.

- The Department of Transportation's Regulatory Reform initiative required all modes to examine all of their rules and regulations and reduce them by half.
- States are being required to use performance measures in their state budgeting processes.

It was in this environment that NHTSA made the decision to revise the 402 process, providing states with more flexibility in the management of their highway safety program. Requiring the use of performance measures was supportable since that data is available in highway safety, e.g., fatality rates, belt use rates, alcohol related crashes.

The old 402 process required states to develop Highway Safety Plans including data to support problem ID and project descriptions for proposed programs. The Plan was approved by the Regional Offices and changes in excess of 10% of program costs needed prior approval. Annual reports were required. Accountability was at the project level.

The new process requires states to develop Benchmark Reports which contain goals, performance measures and a description of the processes used to conduct problem ID, set goals and develop strategies. A plan is prepared for the state's internal use and a copy provided to the Regional Office for information. The Benchmark Report is approved "for reasonableness" by the Regional Offices. Annual reports are required. Accountability is at the goal level.

Sixteen states participated as pilot states in the first year of the program; in year two, 41 states, D.C., Puerto Rico, the Virgin Islands and Northern Marianas participated. After the first round, we completed a short term evaluation and learned that almost universally the states liked the process, that they were beginning to pass the requirement to set goals down to the community level, that funding in the nine priority programs is being sustained, and that the difficulties they were having resulted from inadequate data systems. The immediate effect on the program was that we saw more innovation, fewer "feel good" programs, and reenergized state highway safety office staff. The first year of the pilot program, the 402 funding for alcohol remained at the same level as in prior years, roughly 28% of the total funding or nearly 34 million dollars.

The 410 alcohol incentive program is another source of funding for alcohol programs for the states. In order to qualify, states must meet certain basic criteria, one of the seven elements includes a performance measure (states must show progress in reducing alcohol related crashes). Other elements include ALR, per se laws, check-points, self-sustaining DUI programs, preventing under-21 from obtaining alcohol, mandatory sentencing and zero tolerance. After meeting five of the seven basic criteria, states are eligible to receive funding for up to six supplemental criteria. Funding must be used for alcohol programs. The 410 program at a funding level of $25 million has been very successful, the number of states receiving funds rising from 19 to 32 since 1992. The program is credited with the passage of eight .08 BAC laws, 25 zero tolerance laws (another 10 passed after the sanction provision), 10 ALR laws, and the development of countless programs.

A third means of influencing state actions is through the use of sanctions. If states do not take a specific action, some type of funding is withheld. A law passed in 1995 required states to enact a .02 law by October 1, 1998, or else 5% of certain federal-aid highway funds will be withheld; in 1999 and every year thereafter, 10% of the funding will be withheld. The .02 law must apply to everyone under 21, be a per se offense, have primary enforcement and must permit license suspension. Thirty-four states and DC have laws which comply, 3 states have laws but don't meet all the criteria, and 13 states and Puerto Rico have no law. Ten zero tolerance laws were enacted after the passage of the sanction.

Decision makers must try to maintain some balance between incentive programs and sanctions. Certainly the 21 Minimum Drinking Age law would not be in every state if there were no sanctions. But sanctions are not supported by the states and in several cases (National Maximum Speed Limit, motorcycle helmets), sufficient pressure was exerted on the Congress to repeal sanctions before they had run their course.

All of these considerations will be included in the discussions over ISTEA 2, as we reauthorize our safety programs.

APPENDIX C5A
NORTH CAROLINA *BOOZE IT & LOSE IT* PROGRAM

Joe Parker
North Carolina Governor's Highway Safety Program

GREENSBORO - It's "Booze It & Lose It" in North Carolina as law enforcement officials statewide once again step up enforcement of driving while impaired (DWI) laws with sobriety checkpoints in all 100 counties. The checkpoints will begin on July 1 and continue through the Fourth of July weekend. Last year, 16 people died in Fourth of July weekend highway crashes; seven of those fatalities were alcohol-related.

"Law officers will be out in force making sure our roads are safe for travelers and vacationers this summer, especially during the Fourth of July week," said Gov. Jim Hunt, who understands the dangers of impaired driving a personal way. As a young man, Hunt walked away from a serious car crash involving a drunken driver. "There will be law enforcement checkpoints all over the state. People who drive while impaired will be caught and will lose their licenses on the spot. It's time to put a stop to drunk drivers, especially repeat offenders."

The announcement of the campaign came at an event

in Greensboro today launching this year's "Booze It & Lose It" campaign and National Sobriety Checkpoint Week (July 1-7). Officials unveiled North Carolina's newest weapon to stop drunken driving, a mobile breath-alcohol testing unit. The 32-foot-long vehicle, built in the Triad, will be equipped with two intoxilyzer alcohol-breath testing machines and equipment to process a motorist charged with DWI. It will assist law officers by reducing the time it takes to transport an impaired driving suspect to the nearest breath-testing site during checkpoints or large events. The vehicle, operated by the Forensic Tests for Alcohol Branch of the Department of Environment, Health and Natural Resources, will be available for use by law enforcement agencies statewide this summer.

As a result of "Booze It & Lose It" and ongoing efforts to stop drunken driving, alcohol-related fatalities dropped to the lowest number this decade. In 1995, there were 392 alcohol-related fatalities, 27 percent of all North Carolina traffic deaths. The six-year trend:

"While we've made great progress, we must continue to step up our local and statewide efforts to stop deaths and injuries at the hands of drunk drivers," Hunt said.

"Booze It & Lose It"

- Since the start of the Governor's Highway Safety Initiative in October 1993, North Carolina law officers have conducted more than 16,000 checkpoints and charged 22,600 with driving while impaired.
  Source: North Carolina State Highway Patrol.
- Prior to the 1994 "Booze It & Lose It" campaign, about 2 percent of all nighttime drivers passing through research checkpoints were found to have a blood alcohol concentration above North Carolina's legal limit of .08 percent. Three months later, the number of legally intoxicated drivers seen at checkpoints had been *cut in half*—to slightly less than 1 percent (0.9 percent)—the lowest such number ever recorded in the nation.
  Source: UNC Highway Safety Research Center
- The number of North Carolina motorists killed in alcohol-related crashes continues to decline. There were 469 alcohol-related fatalities in 1993, 457 in 1994 and 392 in 1995.
  Source: NC DOT Division of Motor Vehicles Collision Reports Section.

North Carolina Driving While Impaired Law

- In North Carolina, drunk drivers lose their license on the spot. No warnings, no excuses.
  Source: North Carolina General Statute 20-16.5.
- In North Carolina, you are driving while impaired (DWI) if your alcohol concentration meets or exceeds .08, or if you are under the influence of or affected by alcohol or other drugs.
  Source: North Carolina General Statute 20- 138.1.
- North Carolina enacted a "zero tolerance" law in 1995 for drivers younger than the legal drinking age. If you are under age 21 and you are convicted of driving with *any amount* of alcohol or other drugs in your body, your license will be revoked for one year.
  Source: North Carolina General Statute 20-138.3.

The Cost of Impaired Driving in North Carolina

- First-time offenders can expect to pay at least $6,200 in fines, fees and insurance costs if convicted of DWI.
  Sources: NC Department of Justice, NC Department of Insurance, NC General Statutes
- Each year, drunk drivers cost North Carolinians nearly $1 billion in health care, insurance and other related costs. That translates to a cost of $214 a year for each licensed driver in North Carolina.
  Source: NC DOT Traffic Engineering Branch.
- Automobile insurance rates increase by at least 400 percent if a person is convicted of driving while impaired.
  Source: NC Department of Insurance.

The 1996 "Booze It & Lose It" program is a continuation of the most extensive statewide law enforcement and education effort in U.S. history.

The high price of a DWI conviction should make people think twice before drinking and driving, according to Lt. Gov. Dennis Wicker. "Besides resulting in lost driving privileges, a DWI conviction is time-consuming and expensive," said Wicker, who was chairman of the Governor's Task Force on Driving While Impaired. "The tab can run at least $6,200 for the first DWI offense. Insurance rates alone jump at least 400 percent if you are convicted."

Wicker also reminded young people to never drink and drive. North Carolina enacted a "zero tolerance" law in 1995 for drivers under the legal drinking age. "Anyone under age 21 convicted of driving with *any amount of* alcohol or other drugs in his or her body can have their licenses revoked for one year," Wicker said.

Since the Governor's Highway Safety Initiative began in October 1993, state and local law enforcement agencies have conducted more than 16,000 checkpoints and charged 22,600 with driving while impaired.

Secretary Richard Moore of the Department of Crime Control and Public Safety said high visibility enforcement is the best method of convincing people not to drink and drive. "Research shows that appeals to do what's right don't work for people who drink and drive," Moore said. "What deters them is the risk of getting caught and losing their license. Like the television ads say, 'we're going to get them, all of them.'

Moore said he expects law officers to find a number of violations other than DWI during, this enhanced enforcement campaign, such as firearm violations, drug offenses, stolen vehicles and even fugitives from justice.

Law officers have discovered more than 400,000 violations other than driving while while impaired, seat belts and child safety seats since 1993.

Joe Parker, director of the Governor's Highway Safety Program, said North Carolina is continuing the campaign in an effort to lower the number of impaired drivers on the highways, saving lives and health-care costs.

"Booze It & Lose It" works, Parker said. A 1994 study showed the campaign cut in half the number of intoxicated drivers found at checkpoints and helped reduce alcohol-related fatalities in North Carolina.

Prior to the 1994 campaign, about 2 percent of all nighttime drivers passing through checkpoints were found to have a blood alcohol concentration above the legal limit of .08 percent. Three months later, the number of legally intoxicated drivers seen at these checkpoints was cut in half to slightly less than 1 percent (0.9 percent).

"We know this program saves lives, that's why we're stepping up our efforts," Parker said. "Law enforcement agencies and communities are working together in unprecedented cooperation. Last year, 392 people lost their lives on North Carolina highways due to alcohol-related crashes. That's far too many. The eyes of the nation will be on us to see what we can accomplish with this massive effort." (Source: July 1, 1996 Press Release).

APPENDIX C5B
OHIO HIGHWAY SAFETY PROGRAM
PROGRAM OVERVIEW - FEDERAL FISCAL YEAR 1995

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WHAT IS IT?

- Distribution of federal and state funds allocated to traffic safety.
- Federal funding sources during 1995 included Title 23, Section 402 Highway Safety Program, 410 Impaired Driving, and 153 Helmet Law Transfer Funds.
- Administration of funds from state MUL fines and Federal County Surface Transportation Program.
- Ohio Department of Public Safety, Office of the Governor's Highway Safety Representative (OGHSR) acts as grants administration agent, and develops annual work plan (Ohio Highway Safety Plan) to guide statewide traffic safety efforts.

WHAT PROGRAMS ARE FUNDED?

During Federal Fiscal Year 1995 (October 1, 1994 to September 30, 1995) the OGHSR issued grants for the following:

- Expended over $4 million of Section 402 funds in support of 90 state and local agencies.
- Overtime traffic enforcement of speed and impaired driving
- Ooccupant protection and child passenger safety seat programs
- Traffic engineering studies
- Comprehensive community traffic safety program coordination
- Bicycle, pedestrian and school bus safety programs
- State and local traffic records systems
- Youth traffic safety programs
- Development of the Ohio Safety Management System Implementation Plan
- Expended over $4 million of Section 410 funds in support of 204 state and local agencies.
- Overtime traffic enforcement of impaired driving
- *Campaign Safety and Sober*
- Standard Field Sobriety Test training (SFST) and Advanced Detection, Apprehension, and Prosecution (ADAP) training
- Court immobilization programs to address repeat DUI offenders
- Sobriety checkpoints.
- Began expenditure of almost $5 million of Section 153 transfer funds in support of state and local agency traffic records systems.
- Completed Traffic Records System Strategic Plan as a guide for state and local agency planning of traffic records systems over the next 3-5 years (driver license, vehicle registration, traffic crash, roadway information, emergency medical services data systems).
- Distributed $227,000 in state MUL fines to 206 local "Third Grade Safety Belt Programs."
- Distributed $650,000 in County Surface Transportation Program funds for the County Engineers Association of Ohio, which they obtained from the Federal Surface Transportation Program.

Table - Section 402 Funding by Program

Funding Area	$ Expended
Planning & Administration	$ 184,127
Occupant Protection	$ 257,599
Alcohol Programs	$1,038,163
Police Traffic Enforcement	$ 812,797
Traffic Records Systems	$ 273,375
Emergency Medical Services	$ 70,415
Motorcycle Safety	$ 2,718
Comprehensive Community Programs	$ 475,206
Roadway Safety	$ 359,393
School Bus Safety	$ 62,952
Pedestrian Safety	$ 150,910
Youth Programs	$ 473,386
Total Section 402 Funds	**$4,161,042**

Program Accomplishments and Impact:

- Achieved an overall occupant restraint use rate of 62.7 percent, up from 62.1 percent in 1994.
- Increased child passenger safety seat usage from 33% in 1994 to 47.6% in 1995 through grants to 241 local programs.
- Distributed $227,000 of state MUL funds to support 206 "Third Grade Safety Belt Program" participants. (Contacted 88,394 students).
- Distributed 12,949 car seats to low income families.
- Collected $136,562.82 in Child Restraint fines since July, 1994 when the Child Passenger Restraint Law was modified to eliminate safety belts as valid child restraints.
- Supported "None for Under 21" program, and the "Cops in Shops" programs which involved enforcement of laws governing the sale of alcoholic beverages to those under 21 years of age.
- A total of 885 DUI arrests (137 under 21) were made by 70 local agencies as a result of 20,650 labor hours of overtime enforcement activity. In addition, the Ohio State Highway Patrol made 687 DUI arrests as a result of 9,945 labor hours of overtime enforcement.
- A total of 18 local agencies were supported to perform 38 DUI checkpoints, resulting in a total of 13,887 vehicles being checked, with 48 DUI arrests (of which 2 were under 21), 28 traffic arrests, and 8 arrests for invalid drivers licenses. In addition, 638 restraint warnings were issued, along with 8 restraint citations,while 8 vehicles were seized.
- Supported PI&E efforts through: Designated Driver Program, Habitual Offenders Program, HOT Sheet Newsletter, 1-800-GRAB-DUI, Vehicle Immobilization Program, and the Ohio Alcohol Servers Coalition Program.
- A Vehicle Immobilization Program in Franklin County resulted in 1,189 vehicle immobilizations.
- A total of 1,815 vehicles were forfeited through the stricter DUI laws.
- Training efforts resulted in 356 state and local officers being trained in ADAP, certification of 37 new ADAP instructors, and training of 381 judicial officers in alcohol issues.
- Generated 5,504 speed-related arrests as a result of 417 flight hours by Ohio State Highway Patrol (OSHP) in support of local air speed enforcement.
- General overtime traffic enforcement by local police agencies (3,022 labor hours) resulted 2,302 speed arrests, 45 DUI arrests (1 under 21), 554 adult restraint use citations, an numerous additional traffic arrests.
- During this same period the OSHP, in 341 post-months of activity, expended 13,261 overtime labor hours, resulting in 18,033 speed arrests, 85 DUI arrests (none under 21), and 7,719 adult restraint use citations.
- Campaign Safe & Sober resulted in 375 participating agencies expending 67,816 labor hours of local effort. This effort produced 33,600 safety belt citations, 1,144 child restraint citations, 739 Under-21 DUI arrests, 4,966 Adult DUI arrests, 90,465 speed arrests. Local programs reported a 66 percent restraint usage rate (as compared to 62.7 percent state wide).

- Corporate traffic safety programs activity resulted in an expansion of the Ohio Partnership for Traffic Safety (OPTS) membership to 316 firms, representing 314,071 employees and 66,143 fleet vehicles.
- Performed 18 Safety Review Team studies to help local government in identifying local safety problems.
- Erected 850 new "Stop" signs at high-hazard locations on local roads.
- Initiated a county-wide safety review pilot project in Stark County entitled "The Roadway Analysis for Fatal/ Injury Countermeasures" (TRAFFIC). Government agency representatives and Stark County officials are working together to decrease the traffic fatalities and injuries within the county.
- Supported four local traffic control device inventory projects and six local traffic studies of high-hazard locations (26 sites) with 402 funds.
- Used County Surface Transportation Program (CSTP) funds to support activity in 27 counties, including seven guard rail inventory projects, five sign inventory projects, five curve sign replacement projects (1,052 signs erected), five ball-bank curve studies, and six pavement marking inventory projects.
- Supported training for 35 state and 115 local engineering employees in safety, related issues (4 courses).
- Inventoried 471 miles of local roadways.
- Printed and distributed 800,000 safety patrol stuffers for corporations, schools, etc.
- Printed 50,000 School Bus Driver Responsible Driver pamphlets.
- Printed 400,000 copies of "Safe Days with Oliver the Owl" brochures addressing safe loading and unloading of school buses.
- Trained 8,000 students in pedestrian and bicycle safety issues.
- Printed 400,000 pedestrian/bicycle safety booklets. ("From A to Z by Bike")
- Funded an impaired pedestrian project in the Ohio State University, Main Campus area, resulting in 226 arrests by the six foot patrol officers during the 10-week program.
- Supported the" None for Under 21" campaign through distribution of materials to 77 percent of Ohio's public and private schools, which contributed to a 45% reduction in alcohol-related involving Under-21 drivers.
- Funded 17 agencies for undercover officers to enforce under age sales laws in liquor establishments as part of the "Cops in Shops" program.
- Implemented, under the auspices of Ohio's "None For Under 21" campaign, the "Capa City" Experience and "Strides for Safety" initiatives as youth programs on impaired driving.
- Youth focus groups debated inconsistencies in traffic and impaired driving sentences with Ohio's juvenile judges, and offered recommendations on graduated driver licensing.
- Distributed youth traffic safety resources and campaign materials to over 6,000 educators and prevention specialists in Ohio.
- Established TEENLINK, a communication network linking teens in Ohio's schools.
- The 1995 National SADD Student of the Year was from Ohio.
- Won awards and/or recognition from NCADD, NAGHSR, NASADAD, AAMVA and Nationwide Insurance Company for the "None For Under 21" campaign.

APPENDIX C5C
CALIFORNIA'S PROGRAM FOR REDUCING THE NUMBER OF FATALITIES AND INJURIES ASSOCIATED WITH ALCOHOL-RELATED MOTOR VEHICLE CRASHES

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This paper provides an overview of the progressive efforts California has made in reducing the number of fatalities and injuries associated with alcohol-related motor vehicle crashes. This paper also tenders California's perspective on federal changes, government downsizing and anti-government sentiment. The Office of Traffic Safety's impetus for this paper is relative to the coercive nature of incentive grants and associated grant sanctioning.

DUI IN CALIFORNIA

Despite recent declines, the leading cause of death and disability in California is motor vehicle injuries. Motor vehicle fatalities account for 60% of all years of life lost to persons under age 65, far exceeding heart disease and cancer combined. The majority of spinal cord and traumatic brain injuries result from motor vehicle crashes.

The major cause of these highway motor vehicle injuries is related to alcohol intoxication. Vigorous enforcement and education efforts, promulgated under the auspices of OTS grants, have resulted in changing norms associated with alcohol consumption patterns. The number of fatalities and injuries in alcohol-related crashes has also declined in recent years as a result of these efforts. These changes have been driven, by publicity given to data showing the role of alcohol intoxication in highway crashes. Data systems such as the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) have also played a central role in showing the contribution of alcohol intoxication to California's highway injury problem. Unfortunately, despite this progress, 50% of California's motor vehicle-related highway fatalities still involve alcohol.

For a list of 1996 DUI statistical caveats please see Attachment I.

BACKGROUND

Through almost a century of development the Federal Highway Program has experienced many changes. As the interrelationships of transportation and various national interests have been recognized, federal objectives in these areas were incorporated into the Program. Prior to the Intermodal Surface Transportation Efficiency Act (ISTEA), the state's own initiative ruled the transportation planning process, and Federal aid was provided for projects deemed eligible via this process.

The quandary became achieving objectives and goals established at the national level through state and local governments, both of which are legally and politically independent.

In ISTEA, the Federal government implemented federal aid grant funding for state and local public agencies for highway and mass transit projects by formally requiring each state to develop a comprehensive statewide transportation plan. The process was required to include various modalities of transportation and be capable of integration into a statewide system. Further, the Act authorized a withhold sanction of up to 10 percent of available federal highway and transit funds for any that failed to implement the stipulated management systems in various aspects of state transportation systems.

The conditional grant funding practice was originally justified through the rationale that federal oversight was required to ensure proper use of federal funds program wide. Over the years, this "conditional" grant funding practice was expanded to actively promote an agenda defined by Congress. This ongoing "changing of the rules" made it difficult for states and local agencies to carry out regulatory actions.

POLITICAL ADVANTAGES OF CONDITIONAL GRANTS

The use of conditional grants, under the guise of "flexibility," gave the appearance that the public's interest was being regulated by state authority. This allowed the federal government to function in anonymity and in a "white hat" capacity. Unfortunately, this pitted both sides against the middle. State and local entities were put in the precarious position of moving Congressional agenda's or risk losing Federal aid. These agendas are not always in agreement with state and local needs.

Congress must balance a need for providing direction, and the involved parties of the states must avoid becoming a convenient agent for the exercise of federal agendas. However, this can ultimately head to conflict between federal, state, local and private sector leadership. Federal, state, local and private sector entities must work together to formulate a shared vision. The next ISTEA must truly allow this to happen, without the interference of hidden Congressional agendas.

QUESTIONING CONDITIONAL GRANTS

"The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people." United States Constitution, Amendment X, 1791.

"All political power is inherent in the people. Government is instituted for their protection, security, and benefit, and they have the right to alter or reform it when the public good may require." California Constitution, Article 11, Section 1, as renumbered, 1976.

As previously stated, state and local governments are legally and politically independent. Therefore, disciplining the states for non-compliance with federal objectives through the use of funding withholds and/or initiation of penalty transfers is, in effect, coercion. A question of the legitimacy of the federal objective, specifically the actual contribution of the objective to the overall needs of the state, must be initiated. Further, the specific conditions for the disbursement of the Federal monies must be questioned, because each state is not only independent, but geographically and demographically varied. Additionally, there is no check valve for political stalemates, as California has experienced. A current example of this lack of a "check valve" is the stalemate that has been created through the requirements of Section 159, relative to driver's license sanctions and non-driving related drug offenses.

CHANGING THE PARADIGM

The complexity of current transportation infrastructures requires a rethinking of current systems. The federal government must rely on the desire of the states to initiate change, not on its ability to induce, influence or control. A truly interactive system must be capable of solving problems and meeting the needs of the parties involved without coercion. This will require the decentralization of the objective settings process, with direct input from all parties concerned. including the private sector. The current process of incentives, program objectives, and penalty transfers requires reevaluation.

Incentives, by their very nature, punish when not received, rather than promoting change. Overall program objectives must be evaluated annually at the federal level to reflect changing national needs. Penalty transfers must be eliminated entirely, there is no intrinsic correlation between the idea of penalizing transportation improvement to promote safety.

The central problem with the system, as it stands, is that rewards (incentives), much like punishment (transfers), are attempts to regulate the states. These incentives or transfers are ways of keeping the states in some fashion of compliance, but does little to foster a working partnership with states. Ultimately, techniques of manipulation end in failure. The problem may, however, run deeper than this system alone, to the very essence of individual values.

CALIFORNIA'S SOLUTION

Democracy and its associated processes are the most efficient when they operate in a sphere of influence closest to the entities they serve. For the last century, as evidenced by ISTEA, the trend in government has been to centralize power in distant authorities. That trend is now being reversed. The current congress is moving toward returning power to the states, just as California is moving toward returning functions to local communities, with the money to pay for them and the flexibility to run them in the most efficient and effective manner possible.

Currently, Governor Wilson has implemented a competitive government program in California. The program is designed to reshape government, as we approach the 21st century, into a servant of the families and businesses of the state, so that it provides essential, necessary services at the lowest cost, and with the highest quality. The ultimate goal of the program is the birth of a state government that is honest, lean, innovative and accountable to its customers the people of the State.

Specific to the transportation arena, the governor directed the Business, Transportation and Housing Agency to pursue transferring authority for billions of dollars in transportation planning and project delivery responsibilities to regional and local entities, freeing the municipalities of state intrusion. This empowerment of local government will undoubtedly enhance efficiency and accountability.

REFERENCES

1. Kohn, Alfic, *Carrots, Sticks and Self-Deception,* Across the Board, January 1994. pp. 39-44.

2. Netherton, Ross D., *Federalism and the Intermodal Surface Transportation Efficiency Act of 1991,* NCHRP Legal Research Digest, February 1995, Number 32.

3. Wilson, Pete. *Competitive Government: A Plan for Less Bureaucracy, More Results,* April 1996.

Attachment I

Specifically, as presented in the 1996 DUI Management Information System Report:

- DUI arrests have fallen 42% since 1990, in 1994 by approximately 11% alone.
- Alcohol-involved traffic fatalities decreased again in 1994, by 5.2%, and have dropped by almost half since 1987, down 46% overall.
- The number of persons injured in alcohol-involved accidents during 1994 declined by 8.1%, for the eighth consecutive year, resulting in a 42.7% reduction in alcohol involved injuries over the 8-year time period.
- 13.1% of all 1993 DUI arrests were associated with a reported traffic accident, up from 11.1% the prior year. Forty-nine percent these accidents involved an injury or fatality.
- The average blood alcohol concentration (BAC) of a convicted DUI offender, as reported by law enforcement, was approximately 0.17% in 1993, which is more than double the California illegal per se BAC limit of .08%. The average BAC reported on 1993 DUI abstracts of conviction was approximately 0.17%, the same as in 1991 and 1992.
- Among 1994 DUI arrestees, Hispanics, approximately 47%, again constituted the largest racial/ethnic group, and were arrested at a rate over double their adult population parity of 22.5% (1990 Census).
- The average age of a DUI offender in 1994 was 32.9 years.
- Less than 1% of arrested DUI offenders are juveniles, under age 18.
- Among convicted DUI offenders in 1993, approximately 68% were first offenders, and 32% were repeat offenders, with one or more prior convictions during the previous 7 years. The proportion of repeat offenders has decreased each year since 1989, when it stood at thirty-seven percent.
- Alcohol treatment, in conjunction with license restriction, were the most effective postconviction sanctions in reducing subsequent DUI incidents among DUI offenders, by a minimum of 11.8% over other sanction alternatives.
- Jail, in the absence of treatment or postconviction suspension, was the least effective sanction for first offenders in terms of DUI recidivism, with a minimum of 24.7% more DUI incidents than the next least effective sanction.
- License suspension was the most effective postconviction sanction in reducing the total accident risk of DUI offenders. With the imposition of preconviction administrative per se suspensions, beginning in July 1990, the postconviction total accident rates of all sanction groups were reduced. Because all DUI offenders were now suspended under the administrative per se law, the incremental impact of postconviction suspension actions became less distinct.