Maine Office of Substance Abuse

OSA

Maine Department of Health & Human Services

Report to the Joint Standing Committees of
Health & Human Services and Legal & Veterans Affairs

Funding

the Efficient and Effective Delivery of

Substance Abuse Prevention and Treatment Programs

LD 1838/RESOLVE Chapter 142

Full Report

January 1, 2007

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Chapter 1: Introduction

This report is submitted in response to RESOLVE Chapter 142, directing the Office of Substance Abuse to study the potential use of liquor license fees and liquor taxes to fund efficient delivery of substance abuse treatment and prevention programs. This resolve calls for a study of:

- Potential sources of funding for the efficient and effective delivery of substance abuse prevention programs, including, but not limited to
    - Increasing liquor licensing fees based on sales volume
    - Increasing the taxes levied on liquor
    - Public-private partnerships, and
    - Using money from the revenue-sharing agreement between the State and the private distributor who wholesales spirits listed for sale by the State Liquor and Lottery Commission. (Chapter 8)
- The current funding for substance abuse prevention and treatment programs offered in the State (Chapter 2)
- The adequacy of substance abuse prevention and treatment programs offered in the State (Chapters 6 and 7)
- The best practices for the delivery of substance abuse prevention and treatment programs (Chapters 3 and 4)
- Industry-funded programs (Chapter 5)

Methodology

A literature review of publications from government, alcohol industry, and the substance abuse field was performed to determine the best practices in substance abuse prevention and treatment, as well as to uncover current needs specific to Maine. Additionally, reviews of other state's alcohol policies concerning taxation, licensing fees, and other policies that generate funds dedicated to prevention and treatment was performed using similar sources. Data concerning alcohol production, consumption, and current tax revenue were collected from both governmental and alcohol-industry reports. Methodology governing specific analyses and calculations can be found in the Appendices.

Chapter 2: Funding for Prevention and Treatment Programs

The Office of Substance Abuse (OSA) is the single state agency responsible for providing funding and other support for substance abuse prevention and treatment programs. OSA is funded from a number of sources. The State Legislature allocates funds to OSA from the General Fund, the Fund for Healthy Maine (tobacco settlement funds), and the state share of MaineCare. The U.S. Congress allocates funds to OSA from the Substance Abuse Prevention and Treatment Block Grant (SAPTBG), various Categorical Grants that were obtained in a competitive process, and a match of the State MaineCare contribution. OSA also receives some of its funding from other departments, namely the Maine Department of Corrections (DOC). From this pool of funds, OSA then allocates a large portion to treatment providers and community prevention efforts in the form of grants. Funds for prevention work are also allocated by OSA to schools and police/sheriff departments from the Federal Safe and Drug-Free Schools grant (SDFSCA), several Department of Justice (DOJ) grants, and sometimes other time-limited categorical grants for which OSA applies as opportunities arise.

Most federal dollars for substance abuse and prevention flow through OSA to community agencies who deliver the services.[1] Besides grant dollars, general fund money is drawn directly out of OSA's budget and channeled towards substance abuse services. Funding for treatment programs in SFY 2006 accounts for 79 percent of OSA's state general fund budget. The remaining 21 percent is dedicated to other service contracts, division budgets, and other miscellaneous expenditures. Prevention is not funded out of the OSA general fund budget.

Prevention

Substance abuse prevention in SFY 2006 was allocated a total of $5,931,151 (Table 2.1). The majority of this money comes from federal sources, in the form of block grants, categorical grants, and the Safe and Drug-Free School Grant. Some money is also allocated from the Fund for Healthy Maine, an account containing the tobacco settlement money. The contribution of each source can be seen more clearly in Figure 2.1.

[1] Exceptions to this include Department of Corrections grants and SAMHSA's Drug-Free Communities grants. These grants are made directly from the federal government to community coalitions. They are limited in number and highly competitive.

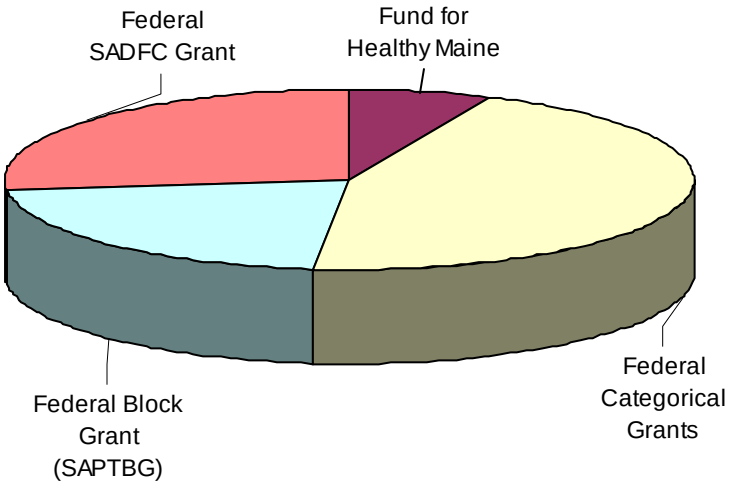
Up until June 2006, 23 prevention community coalitions were funded by the One ME State Incentive Grant. This money, totaling almost a million dollars, will not be a part of the SFY 2007 prevention budget.

Table 2.1
Funding for Prevention Services, SFY 2006

Funding Source	Funding	Percent of Total
State General Funds	**$0**	0%
Fund for Healthy Maine	**$387,842**	6.5%
Federal Categorical Grants		
Prevention Contracts	*$1,745,212*	
One ME Contracts (ended June 06)	*$938,237*	
Total Federal Categorical Grants	**$2,683,449**	45.2%
Federal Block Grants	**$1,258,304**	21.2%
Non-OSA Funds	**$0**	0%
Fed. Safe and Drug-Free Schools Grant	**$1,601,556**	27.0%
Total	**$5,931,151**	100.0%

Source: OSA, 2006b

Figure 2.1
Funding for Prevention Services
SFY 2006



Treatment

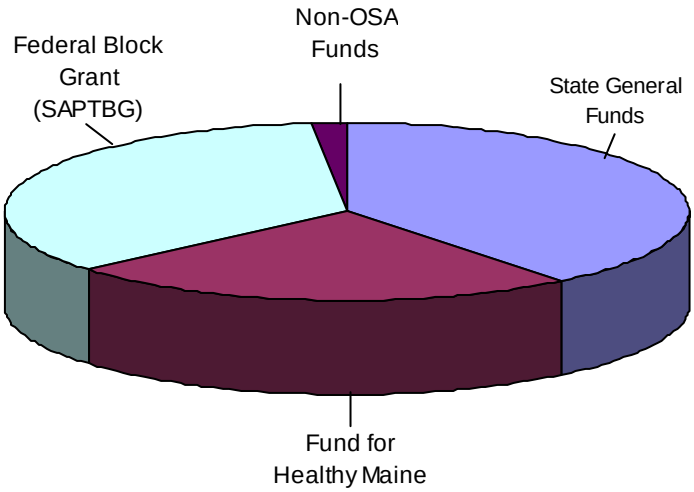
Substance abuse treatment was allocated $13,141,271 in SFY 2006 (Table 2.2). Funding for treatment is more balanced between state and federal sources than it is for prevention. The majority of funding for treatment is derived from the State general fund through the OSA budget. The rest of the funding comes from Federal Substance Abuse Prevention and Treatment Block Grant and the Fund for Healthy Maine, with a contribution from the Department of Corrections (Figure 2.2). The majority of that funding is channeled to treatment contract agencies across the state.

Table 2.2
Funding for Treatment Services, SFY 2006

Funding Source	Funding	Percent of Total
State General Funds:		
Co-occurring Mental Illness	*$1,030,318*	
Treatment Support Services	*$159,000*	
Corrections	*$504,323*	
OSA	*$3,232,267*	
HIV Intervention Services	*$205,820*	
Total State General Funds	**$5,131,728**	39.1%
Fund for Healthy Maine		
Co-occurring Mental Illness	*$130,750*	
Corrections	*$1,064,936*	
Retain and Recruit	*$365,301*	
Treatment Services	*$1,660,354*	
Total Fund for Healthy Maine	**$3,221,341**	24.5%
Federal Categorical Grants	**$0**	0%
Federal Block Grant (SAPTBG)	**$4,555,352**	34.7%
Non-OSA Funds		
Department of Corrections Grant	**$232,850**	1.8%
Total	**$13,141,271**	100.0%

Source: OSA, 2006b.

Figure 2.2
Funding for Treatment Services
SFY 2006



Medicaid / MaineCare Spending

The majority of funding for substance abuse treatment comes directly from MaineCare, the Maine Medicaid program, totaling $24,506,395 in SFY 2004.[2] The majority of this money (40.8 percent) covers hospital services related to substance abuse, with the remainder of the funds used to cover the costs of substance abuse treatment in residential and out-patient settings, and prescription medications for substance abuse (not including methadone).[3]

Additional Funding

In SFY 2006, money was also channeled towards prevention and treatment indirectly by funding other service contracts with agencies such as AdCare, KIT solutions, Portland Webworks, PanAtlantic, and the University of Southern Maine. These contracts provide funds for projects such as Juvenile Drug Court case management, the Driver Education and Evaluation Program(DEEP), the Maine Youth Drug and Alcohol Use Survey (MYDAUS), the Parent Media Campaign, grant writing, program evaluations, and interactive databases for both prevention and treatment providers, among others. While not funding prevention and treatment services directly,

[2] For lack of more recent reliable data, SFY 2004 information is provided
[3] McGuire, et al., 2006.

they contribute by funding the necessary infrastructure of data-analysis, media dissemination, survey administration, and consultation.

Table 2.3
Funding for Other Service Contracts, SFY 2006

Funding Source	Funding	Percent of Total
State General Funds	$1,567,408	38.4%
Fund for Healthy Maine	$670,284	16.4%
Federal Categorical Grants	$1,512,367	37.0%
Federal Block Grants	$333,214	8.2%
Non-OSA Funds	$0	0%
Fed. Safe and Drug-Free Schools Grant	$0	0%
Total	$4,083,273	100.0%

Source: OSA, 2006b

Chapter 3: Best Practices in Substance Abuse Prevention

OSA accepts the definition of prevention adopted by the Maine Coordinated School Health Program, which states that "prevention is the active, assertive process of creating conditions that promote well-being." OSA also uses the Institute of Medicine's classification system for prevention strategies —universal, selected, and indicated — as well as environmental strategies, sometimes referred to as the public health model. Environmental strategies have garnered the most attention across various prevention disciplines in recent years due to their success in improving nutrition and decreasing smoking rates. Such strategies attempt to change the social environment as a whole to discourage high-risk habits and promote low-risk lifestyles. Universal strategies are similar in scope, focusing on changing attitudes, knowledge, and skills in the general population. Selective strategies target at-risk populations, and indicated strategies target individuals who have begun to show symptoms of use (an approach also known as early intervention or secondary prevention). Most strategies seek to enhance protective factors and

reduce risk factors affecting youth, though in recent years the goal has been broadened to prevention across the lifespan. Protective factors are those that promote health and well-being, while risk factors are those that correlate with increased substance use and abuse.

Evidence-Based Practices

Practices deemed "best practices" use evidence-based prevention strategies in an effort to reduce substance abuse in the public. The term "evidence-based practice" is now more widely accepted than "best practice," as it opens the door to include any "program or policy supported by a rigorous outcome evaluation clearly demonstrating effectiveness." [4] This applies to both prevention and treatment. Additionally, there is no complete consensus concerning what qualifies as a best practice and what does not, and a basic search unearths a number of competing "best practice" lists published by various researchers and organizations.

One of the most widely-used sources for evidenced based practice principles is SAMHSA's National Registry of Evidence-Based Programs and Practices (NREPP), formerly the National Registry of Effective Programs. NREPP is currently being revised and expanded, and the new system has not been entirely unveiled as of the writing of this report. NREPP originally collected evaluations on prevention programs in order to create a database of "model programs" such as "All Stars" and "Communities Mobilizing for Change on Alcohol" with clear goals and guidelines for implementation. This NREPP database has been utilized by OSA, and many of OSA's grantees have either adopted these programs in their entirety or based their efforts largely upon them. While it seems that many of their criteria will remain similar (Table 3.1), the new NREPP will not seek to designate specific programs as models, "but rather will provide useful information on evidenced-based interventions to a wide range of decision-makers at the local, state, and national levels." The intention is to allow more room for innovation and focus more attention on specific behavioral outcomes of certain interventions. This change mirrors the evolution of prevention as a field, in that it is moving away from a restrictive and less effective model-program approach.

[4] WSIPP, 2006, 1.

Table 3.1
Examples of New NREPP Evidence-Based Review Criteria

- Degree to which outcome measures were selected based on theory or a logic model
- Reliability of outcome measures
- Validity of outcome measures
- Nature and quality of the comparison group/condition
- Standardized data collection efforts
- Degree of data collector bias
- Appropriateness of chosen data analyses selected and used
- Research design method used to assess the intervention

Source: "SAMHSA Proposes," 2005

In addition to the more technical NREPP criteria, research shows that effectiveness is maximized when certain guiding principles surrounding program design are met.[5] Such principles include:

- Incorporating multiple strategies in multiple domains (The domains refer to area where prevention work occurs. These include peer/individual, family, school, community, and society settings).
- Including environmental strategies, in addition to—or in place of—more traditional universal, selective, and indicated interventions that target individual-level change.
- Participating in a continuum of services that encompasses substance abuse prevention, intervention, treatment, and recovery.
- Involving all sectors of the community, including parents, youth, and members of the education, law enforcement, public health and health care communities.
- Addressing the needs of all people across the life span.

[5] OSA, 2004a; OSA, 2006c; CASA, 1997; NIDA, 2004; and SAMHSA, 2001a.

- Using a risk and protective factor framework[6]
- Attending to cultural competence and inclusiveness in working with populations of diverse cultures and identities.

In addition to this set of principles, it is important to reiterate that a review of the literature reveals increasing support for substance abuse prevention following a public health, or environmental, model. Public health models understand communities as organic social systems, and consequently use a systems approach when dealing with substance abuse problems. That is, a community is understood as more than a collection of individuals with varying levels of risk (the catchments approach). The catchments approach, it is argued, is only effective insofar as the sources and effects of the problem are contained entirely within the individual. Although this may be partly true for substance abuse, it is certainly not the whole picture—community norms and the physical environment, for example, affect the prevalence of alcohol and other drug (AOD) use. Such an approach is based in both theory and evidence: the public health efforts to curb smoking have been successful by reducing underage sales, banning vending machines, and creating more non-smoking areas in public places. Public health models have not only been demonstrated effective in the realm of substance use, but also in general community health. For example, efforts aimed towards reducing heart disease and cancer have succeeded in adding healthier options to many restaurant menus.[7] However, even though environmental strategies currently have the most research-based support, it is important to remember that selective, indicated, and universal strategies are still needed for those at high individual risk.

> *"A systems perspective suggests a need to combine changes in individual decisions and behavior with relevant changes in the social, economic, and in some cases physical environment of the community system." (Holder, 2001, 3).*

Over time, certain types of strategies have revealed themselves to be effective in preventing substance abuse when implemented correctly and with fidelity. These are not *model* programs in the traditional sense, but rather represent different kinds of evidence-based prevention methods. Being broad and inclusive, they do not always fall neatly into these four categories of

[6] See, for example, Hawkins, J.D., Catalano, R.F., & Miller, J.Y. (1992). Risk and Protective Factors for Alcohol and Other Drug Problems in Adolescence and Early Adulthood: Implications for Substance Abuse Prevention. *Psychological Bulletin, 112* (1), 64-105.
[7] Holder, 2001.

environmental, universal, selective, or indicated, so suggestions are merely made as to how best to categorize each practice in Table 3.2. Additionally, this table by no means represents a complete inventory of evidence-based prevention.

Table 3.2
Types of Evidence-Based Practices[8]

Environmental / Public Health Strategies	
Policy	Strengthening Minimum Legal Drinking Age (MLDA)laws Regulating sales Increasing the price of alcohol Mandating seller/server training Improved zoning ordinances regarding alcohol outlet location
Enforcement	Enforcing underage drinking laws[9] Enforcing BAC/drunk driving laws Compliance checks[10] Sobriety checkpoints
Changing Community Norms	Strengthening parental monitoring and modeling Peer-programs (set a non-use example) Changing adult attitudes that enable underage drinking as a rite of passage Media Campaigns
Changing Physical Environment	Decreasing outlet density Lighting dark places where use or sale may occur Reducing alcohol advertising Instituting "safe ride" programs or providing cheap taxi rides.
Universal / Selective Strategies	
Education	Only when used in tandem with other strategies (otherwise effectiveness has not been demonstrated)
Skill-Building	Life-skills training Parenting programs
Indicated Strategies	
Early Intervention	
Substance Abuse Treatment	

The examples listed in Table 3.2 represent only some of the practices that can be employed under each particular approach, and were chosen based on their inclusion in publications

[8] Sources: CASA, 1997, 2001; OJJDP, 1999, 2000, 2003; SAMHSA, 2001b; NIAAA, 2002; NIDA, 2003; OSA, 2004a.

[9] Increased enforcement of underage drinking and driving laws can be very effective in reducing alcohol-related traffic crashes (as much as 50-percent reductions), especially if well publicized and enforced. (OJJDP, 1999)
[10] In 1999, for example, compliance checks carried out in Connecticut resulted in a reduction of underage alcohol sales from 70% to less than 10%. (OJJDP, 2000)

produced by respected prevention-related organizations. It is also important to note that any program or practice that is inconsistently or incorrectly implemented or enforced will not be successful, no matter how much research supports its effectiveness. Finally, the effectiveness of any one practice is improved when it is combined with one or more other approaches. This is especially the case with education, which studies have shown has limited effectiveness when used as a solitary prevention strategy. Despite this, education remains one of the more popular prevention strategies, particularly when targeting schools and universities, possibly because it is politically palatable and relatively easy to implement.[11]

> *"[Practices] that appear more effective are the most comprehensive and combine a variety of techniques and approaches to provide adolescents with a consistent and coordinated message that is clearly against substance abuse." (CASA, 1997, 91-92)*

Finally, President and CEO of the PAXIS Institute, Dennis Embry, has recently developed a model that explores the building blocks of effective prevention at a more specific level. He proposes that most programs deemed best practices are composed of similar components called *kernels*—simple interactions and practices. Embry isolates those kernels in order to show prevention agencies how they can implement small changes without installing a pre-packaged program. "What is not widely known," he writes, "is that evidence-based kernels are powerful in their own right. Evidence-based kernels are irreducible units of behavior-change technology, and they can be put together into behavioral vaccines (daily practices) with powerful longitudinal prevention results."[12] Embry even suggests that large-scale programs are less effective than the kernels on their own. This is mostly due to the fact that when a large-scale prevention program is installed, providers may not fully understand why it works. When they understand how the program works on the level of *kernels*, there is much more potential for success.

One example of Embry's evidence-based *kernels* is "Reward and Reminder." The simple act of having citizens pass out informal "citations" to clerks who sell alcohol or tobacco to minors—and commendations to those willing to uphold the law—is an extremely cost-effective way of limiting youth's access to those products. States that have implemented this simple, positive strategy have demonstrated striking results. Kansas, for example, reduced successful illegal sales

[11] CASA, 1997; NIAAA, 2002; Room, et al., 2005.
[12] Embry, 2004, 575.

of tobacco to minors from 50% of attempts to 20%.[13] The success of this and other kernels is further evidence in support of an approach that changes the social environment in which people live in order to support and promote healthier behavior.

The Maine Children's Cabinet is already interested in Embry's ideas, and is looking into implementing several of his strategies. His *kernel* theory could be used to efficiently fill in some of the gaps in the system, as well as help to illuminate the inner workings of existing successful programs to maximize their effectiveness. This is not to say that Embry's theory should entirely replace Maine's existing prevention system, but that it proposes a cost-effective addition and/or amplification to improve that system. In keeping with the principle that prevention efforts should be comprehensive and equipped with multiple strategies, we are likely to find that in some cases a long-standing model program such as "Reconnecting Youth" will remain the best approach, in others policy change would be most effective, and in other cases a kernel or *behavioral vaccine* will suffice—in other words, prevention should not be limited to any one approach. In any case, Embry's research illustrates the importance of understanding the building blocks of prevention, and will help to inform future efforts in the field.

Price-Related Prevention Strategies

Since a focal point of this study relates to raising revenue for substance abuse services, special attention to price-related prevention strategies is warranted. Numerous studies (including Room, et al., 2005; Kendell 1983; Grossman, 1987; Chaloupka, 2002; Ruhm, 1996) have shown that increasing the price of alcohol—typically done by raising the alcohol tax—is associated with a decrease in alcohol consumption and abuse. Consequently, "alcohol-related traffic crashes, violent crime, and liver cirrhosis, among other social and health problems, also significantly decline with increased taxes"[14] Studies have indicated that youth are particularly sensitive to an increase in price, resulting in a greater reduction in alcohol consumption among underage drinkers—states with higher alcohol excise tax rates tend to have a lower percentage of 18-20 year olds that binge drink.[15] Consider the studies cited below.

[13] Embry, 2004.
[14] AEP, 2000, 15.
[15] CSPI, 2004, 13.

- "Increased beer prices lead to reductions in the level and frequency of drinking among youth, lower traffic crash fatality rates among young drivers and reduced incidence of some types of crime."[16]

- "Researchers at the National Bureau of Economic Research estimate that if alcohol taxes had kept pace with inflation since 1951, the number of youth who drink beer would have declined by 24 percent"[17]

- The Swedish government cites higher alcohol excise taxes as the key factor in reducing per capita consumption of alcohol by 21 percent between 1976 and 1983.[18]

- Cook and Tauchen have estimated that a doubling of the federal excise tax would reduce the mortality rate by 20 percent, preventing 6000 deaths annually nationwide.[19]

- Hollingsworth, et al. predict that a $1.00 increase per six-pack of beer would decrease the prevalence of 20-year olds engaged in frequent and/or heavy drinking by 24.4% for males and 13.1% for females. They continue to estimate 1,490 deaths would be prevented as a result of this reduction, the total years of life lost cut by 31,130. The higher the tax hike, the greater the benefits.[20]

- Increased price affects not only light and moderate drinkers, who account for about half of all alcohol-related problems, but heavy drinkers as well. One study estimated an 8 percent decrease in monthly binge-drinking episodes in response to a 10 percent increase in price.[21] Additionally, Duke University researchers have found a link between increased state liquor taxes and decreases in problems related to heavy drinking such as liver cirrhosis and alcohol-related crash deaths.[22] Several other studies have shown that heavy drinkers may actually be more responsive to price increases than light drinkers.[23]

- The National Bureau of Economic Research has concluded that raising the price of alcohol slightly (e.g. 10 cents per six-pack of beer) could reduce underage drinking as much as would raising the minimum legal drinking age one year.[24]

- Increases in price have also been linked to decreases in transmission of STDs, as well as higher graduation rates at both the high school and college level.[25]

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[16] CASA, 1997, 101.
[17] Drug Strategies, 1999, 13.
[18] NATC, 1989, 15.
[19] NATC, 1989, 17.
[20] Hollingsworth, et al., 2006.
[21] NIAAA, 2001.
[22] CSPI, 2003; Room, et al., 2005.
[23] Kendell, et al., 1983; Grossman, et al., 1987.
[24] CSPI, 2003.
[25] NIAAA, 2002.

- A 10 percent increase in the price of alcohol could reduce drunk driving fatalities overall by 5 to 10 percent, youth drunk driving fatalities by 7 to 17 percent.[26]

These examples represent just a sample of the research done on the effect of price on consumption. Some researchers, however, argued that the typical economic relationship between cost and consumption does not apply to alcoholic beverages, noting that while the real price of alcohol has decreased since at least the 1970s (due to erosion of federal and state alcohol taxes; see Chapter 8), consumption has also experienced a national decrease. It is argued that other factors are involved in consumer demand for alcohol—such as demographic shifts and changing cultural norms—that supersede the deceptively simple relationship between increased price and consumption patterns.[27] It has also been argued that price plays little role when a consumer is addicted to a substance. On the other hand, some research in addiction studies posits that price may affect alcohol consumption *more* than that of other products.[28] Given the product's potential for generating addiction and increased tolerance in its consumers, a user may anticipate the effect of his or her current use on future consumption needs and thus have an amplified response to a price increase. This response may be even stronger if users (particularly addicts) anticipate prices continually increasing, suggesting the potential positive impact of an alcohol tax indexed to inflation.[29]

One could argue that tax increases are not necessarily passed on to the consumer in the form of price increases—the seller could potentially decide to absorb the tax to keep his or her prices low. However, a recent study by Young and Bielinska-Kwapisz shows that not only do sellers usually pass on the tax to their consumers within the first three months of the tax increase, but that retail prices tend to rise significantly higher than the increase in taxes. That is, a tax increase of *x* dollars will cause a price increase of significantly more than *x* dollars.[30] The Center for Science in the Public Interest conservatively predicts a 7.5 percent markup on a tax increase,[31] while other studies have projected price markups of up to 30 percent. It is likely the mark-up rate

[26] Chaloupka, 2002; Ruhm 1996
[27] Nelson, 1997.
[28] Becker & Murphy, 1988.
[29] NIAAA, 2000.
[30] Young and Bielinska-Kwapisz, 2002; Cook and Moore, 1993.
[31] CSPI, 2006.

will vary widely based on factors ranging from the inclination of the individual distributor and/or store-owner to the status of the alcohol industry at the time of the tax increase.[32]

R. Stone was the first to consider the *price elasticity* rate of alcohol. Since then, numerous researchers have grappled with the issue producing a variety of different elasticity rates. In a review of 15 studies concerning alcohol price and consumption data, Leung and Phelps (1993) found that for every 1 percent increase in price, beer consumption will decline 0.3 percent, wine consumption will decline 1 percent, and distilled spirits consumption will decline 1.5%.

Price Elasticity

$$\frac{\text{\% change in quantity}}{\text{\% change in price}}$$

In a variation of this theory, Uri in 1986 proposed rates of -1.07 for beer, -1.2 for wine, and -.88 for spirits. However, the vast majority of proposed elasticity rates identify beer as being the least elastic, or reactive to price. [33] This may seem somewhat counter-intuitive given the assumption that beer is the favored alcoholic beverage of lower-income groups (youth, low-income adults); however its overall popularity may contribute to its consumption being fairly price-resistant.

The validity of the general theory can be seen in Maine's recent increase in tobacco taxes. While price elasticity figures will not be the same for tobacco as they would be for alcohol, consumption of tobacco nonetheless dropped dramatically when consumers were faced with an increase in cost. Since the cigarette tax was increased in 2001, overall smoking rates have declined by 17 percent, and youth smoking in Maine has dropped by 27 percent.[34] Given that nicotine is arguably a more addictive substance than alcohol for the majority of users, such an inverse relationship can also be expected to apply to alcohol taxes and consumption rates (depending on the proportion of the price increase).

Additionally, decreases in alcohol consumption resulting from price increases may have beneficial effects regarding other substances of abuse. A 1998 study by Pacula suggests that alcohol and marijuana are complimentary substances for youth, meaning that they tend to be used together. This was concluded by examining how increases in the price of alcohol decreased

[32] Cook and Moore, 1993.
[33] Leung and Phelps, 1993.
[34] CASA, 2001, 15.

marijuana usage. In the studied population, Pacula revealed that doubling the beer tax resulted in not only an 8.1% reduction in alcohol use, but also a 13.2% reduction in marijuana use.[35]

Chapter 4: Best Practices in Substance Abuse Treatment

Like substance abuse prevention, treatment effectiveness is, in the end, measured in terms of outcomes. Outcomes such as reduced AOD use, decreased criminality, increased employment, attainment of adequate and socially supportive living arrangements, improved physical health, and improved mental and social health are commonly used to gauge the effectiveness of a treatment.

Unlike substance abuse prevention, however, in which evidence-based practices are proven to work across populations, substance abuse treatment is a much more individual-based practice. Effectiveness depends on a number of factors specific to the individual client including severity of the substance abuse problem including length of time and amount of drug used, motivation to change, presence of social support, and existence of co-occurring illnesses or other physical/social issues.[36] Because of this, no single treatment modality can be said to be superior or effective for everyone.

Because of the highly individualized nature of treatment, SAMSHA's Center for Substance Abuse Treatment (CSAT) has created the Treatment Improvement Protocols (TIPS), a set of procedures for 44 different and highly specific treatment populations such as opiate addicts, addicted adolescents, and HIV-infected alcohol abusers. These protocols are based on expert knowledge from clinical experience and academic research. Asserting the necessity of approaching treatment on a case-by-case basis, CSAT advises that even those protocols "should not be considered as substitutes for individualized patient care and treatment decisions;"[37] that is, not all adolescent opiate addicts will respond to the TIPS treatment designed for them, although the majority can be expected to respond.

This is not to say there are no wide-ranging guidelines in substance abuse treatment. In general it is true that any treatment is better than no treatment—most every treatment modality is effective

[35] NIAAA, 2000.
[36] Robert Wood Johnson Foundation, 2001.
[37] SAMHSA, 2005, ii.

in reducing AOD use[38]—but there are certain factors that make some programs more effective than others. The National Institute on Drug Abuse (NIDA), for example, has developed a fairly comprehensive set of guiding principles that is echoed in other research (Table 4.1).[39]

Table 4.1
NIDA's Guiding Principles

1. No single treatment is appropriate for all individuals.
2. Treatment needs to be readily available. "Because individuals who are addicted to drugs may be uncertain about entering treatment, taking advantage of opportunities when they are ready for treatment is crucial. Potential treatment applicants can be lost if treatment is not immediately available or is not readily accessible."
3. Effective treatment attends to multiple needs of the individual, not just his or her drug use. Including other medical, psychological, social, vocational, and legal problems.
4. An individual's treatment and services plan must be assessed continually and modified as necessary to ensure that the plan meets the person's changing needs.
5. Remaining in treatment for an adequate period of time is critical for treatment effectiveness. The appropriate duration for an individual depends on his or her problems and needs. Research indicates that at least 3 months in treatment is usually needed before significant improvement occurs.
6. Counseling (individual and/or group) and other behavioral therapies are critical components of effective treatment for addiction. This includes increasing motivation, building skills, and changing the client's attitude towards alcohol and/or other drugs.
7. Medications are an important element of treatment for many patients, especially when combined with counseling and other behavioral therapies. Helpful medications include Methadone, levo-alpha-acetylmethadol (LAAM), Naltrexone, nicotine replacement products, Bupropion, Buprenorphine, and many others.
8. Addicted or drug-abusing individuals with coexisting mental disorders should have both disorders treated in an integrated way. "Patients presenting for either condition should be assessed and treated for the co-occurrence of the other type of disorder."
9. Medical detoxification is only the first stage of addiction treatment and by itself does little to change long-term drug use.
10. Treatment does not need to be voluntary to be effective.

[38] NIAAA, 2001.
[39] Such as Robert Wood Johnson Foundation, 2001; NIAAA, 2001; Quirke, 2002, 2003.

11. Possible drug use during treatment must be monitored continuously.

12. Treatment programs should provide assessment for HIV/AIDS, hepatitis B and C, tuberculosis and other infectious diseases, and counseling to help patients modify or change behaviors that place themselves or others at risk of infection.

13. Recovery from drug addiction can be a long-term process and frequently requires multiple episodes of treatment.

Source: NIDA, 1999, 3-5.

As is referred to in Guiding Principle #5, longer retention in treatment has been consistently correlated with improved treatment effectiveness. It is important to note, however, that retaining a client in treatment often involves several different treatment modalities; long stays in residential treatment may not be necessary, as long as a person can step down to lower levels of care seamlessly.

Special attention needs to be paid to Guiding Principle #2: the need for treatment to be made available and accessible to those who need it, when they need it. This speaks to other issues of access that need to be addressed by any effective treatment program. The barriers experienced by individuals attempting to access treatment have been demonstrated by various analysis performed by treatment providers, and have revealed that policies and public opinion about treatments such as medication-assisted therapy are often a barrier to a client receiving the care that he or she needs. Such treatment has been proven effective, as is evidenced by its place on NIDA's Guiding Principle list and on the Evidence-Based Practice list found below. The role of policy makers, therefore, in contributing to the effectiveness of their state's treatment system, is to require substance abuse treatment to be informed by research. Collaboration between

departments and organizations should be improved in order to foster a common understanding of effective substance abuse treatment, as well as to lessen the barriers often experienced by treatment-seeking individuals also involved in the criminal justice and child welfare systems.

> *"A positive, caring, empathic, and sensitive counselor with good listening skills who seeks to replace the client's intimate relationship with substances, with satisfying positive relationships with people and satisfying daily activities, and who instills a sense of hope for a full and lasting recovery will do much to ensure treatment effectiveness." (Quirke, 2003, 1)*

In addition to these principles, the therapist or counselor should seek to establish the best possible relationship with his or her client, as this can be the most important determinate of whether or not treatment is effective.

Evidence-Based Practices

Quirke outlines eight evidence-based practices that have demonstrated effectiveness among a large portion of the treatment population. This is not intended as a comprehensive list of effective treatment practices, but rather provides examples of some commonly-used evidence-based treatment modalities.

1. **Cognitive-Behavioral Therapy (CBT)**: helping the client recognize their problem and understand what is necessary to overcome the problem. Skills training falls into this category, as does stress management, assertiveness training, and relapse prevention.

2. **Motivational Enhancement Therapy (MET)**: Also known as Motivational Interviewing (MI). Client-centered approach to overcome resistance to treatment. Motivates client to want to change his or her behavior. Generally short-term and done in preparation for other forms of treatment. MET/MI has also been identified as the treatment modality with the lowest overall cost.[40]

3. **Community Reinforcement Approach (CRA)**: Involving the community in the client's treatment. Creates a social support network by engaging the client in vocational counseling, social clubs, support groups, recreational activities, etc.

4. **Contingency Management**: Also known as behavioral contracting, it involves a system of rewards and punishments to aid in recovery. Might involve a point system for both good and bad behavior which are redeemable for prizes such as material objects, outings, access to activities, methadone take-home privileges, etc.

[40] NIAAA, 2001.

5. **Behavioral Marital, Family, and Relationship Therapy**: Works on improving the client's relationships with others by improving his or her communication, parenting, money management, problem solving skills, etc.

6. **Conditioning-Based Approaches**: Also known as cue exposure. Involves exposing the client to situations in which he or she would normally use drugs or alcohol – called relapse triggers – while sober. Repeated exposure teaches the client how to stay sober in those situations in the future.

7. **Medication Adjuncts**: Also known as pharmacotherapy or medication-assisted therapy, this involves the use of prescription medications such as Methadone, Naltrexone, Disulfiram, Acamprosate and Buprenorphene. Treatment can be expensive using this method, but it is extremely effective especially when used in tandem with counseling and a desire to stop using. Appropriate for cases in which the client experiences extreme craving for the substance.

8. **AA Twelve-Step Facilitation Therapy**: Although its effectiveness is questionable when used alone, AA and other support groups are very effective when used in combination with other forms of treatment, and when used as a post-treatment continuation of care. Less effective with clients with co-occurring disorders.[41]

For youth, Quirke stresses the importance of outreach, as youth are less likely to seek treatment on their own. He also adds a few additional youth-oriented "best practices" such as Multi-Systemic Therapy in which the therapist or counselor tries to discover what factors in the client's life are contributing to his or her substance abuse problem, and addresses those factors. This therapy is especially effective with youths involved in other systems such as juvenile corrections, with effectiveness increasing as integration and collaboration between agencies goes up. Particular attention is given to family-oriented therapies that work at strengthening the relationship between the adolescent and his or her family. This approach is particularly effective in working with foster children who may not feel as strong a connection with their immediate family as others.[42] While these youth-oriented therapies are not explicitly substance abuse treatments, they have demonstrated effectiveness among the treatment population.

As a final note, participation in post-treatment services such as support groups has also been shown to increase effectiveness of treatment. These groups serve to keep the client tied into a social network supportive of recovery, and drastically decrease the likelihood and/or severity of

[41] Quirke, 2003, 2-3.
[42] Quirke, 2002.

relapse.[43] Despite the individualized nature of treatment, group work in general is found to be very effective, not to mention cost efficient.

Chapter 5: Alcohol Industry-Funded Prevention and Treatment Programs

The alcohol industry has a long history of involvement with alcohol abuse prevention including both funding of external programs and implementation of industry-created programs. No alcohol companies could be found that fund substance abuse treatment, nor were any wine companies found that funded either prevention or treatment.

Beer Companies

In a press release dated March 30, 2006, the Beer Institute touted the importance of reducing underage drinking and drunk driving in honor of National Alcohol Awareness Month. They cite numerous statistics indicating a decline in underage drinking and drunk driving, noting that "A great deal of this success can be credited to the unprecedented cooperation of public, private, and non-profit partnerships in dealing with these issues."[44] The press release goes on to note that, "independently, brewers have also distributed more than 6 million guidebooks, videos, and other materials aimed at creating a dialogue between parents and their children on underage drinking, as well as more than 1.5 million cards and stickers to help retailers check IDs and prevent sales to minors."[45] The Beer Institute cites examples of the industry's contributions, such as Heineken USA's collaboration with 1-800-TAXICAB in the Safe Ride program, and the industry's participation in the International Center on Alcohol Policies (ICAP), a think tank including representatives involved with the industry, government, and public health.

The three most popular beer brands in the United States—Anheuser-Busch, Coors, and Miller—all assert participation in alcohol-abuse prevention work, mainly in the form of responsibility advertising. Anheuser-Busch, for example, states on their website that since 1982 they have invested almost $500 million in "a broad portfolio of programs to help fight alcohol abuse, especially underage drinking and drunk driving, and to promote responsible alcohol consumption

[43] NIDA, 1999.
[44] Beer Institute, 2006a, par. 5.
[45] Beer Institute, 2006a, par. 8.

by adults."[46] Claiming that they market only to adults of legal drinking age, they consistently deny the impact of their advertisements on minors.[47]

As a part of their "Responsibility Matters" initiative, Anheuser-Busch boasts over 24 "community-based alcohol awareness and education programs"[48] Examining their list of programs reveals a string of national campaigns consisting mainly of information dissemination (Family Talk about Drinking; Operation ID; Prevent, Don't Provide) and speaker hosting (Speaker's Bureau). Anheuser-Busch has also been a major impetus behind the Designated Driver campaign.

In Maine during 2005, Anheuser-Busch notes that wholesalers hosted 4 in-school presentations, placed 8 advertisements concerning designated drivers, and participated in both community-based and college-based programs aimed to raise alcohol awareness.[49] Despite the long list of prevention activities they boast, the only third-party evaluation that has been performed reveals no evidence of effectiveness (see page 27).

Miller Brewing Company has participated in similar programs, mostly involving information dissemination in the form of pamphlets, booklets, and guides for retailers and parents. Like Anheuser-Busch they also distribute "We I.D." stickers to retailers emblazoned with the Miller logo. They have played a role in the "Friends don't let Friends Drive Drunk" campaign and server training initiatives. Additionally, they assert having worked with community groups to help pass tougher drunk driving legislation.[50]

Coors Brewing Company also claims to participate in responsible advertising, as well as advocacy for tougher drunk driving and underage drinking legislation. They assert that they support "effective prevention and education programs" by working with 22 "prevention partners" including the American Council on Alcoholism, the National Safe Boating Council,

[46] Anheuser-Busch, 2003.
[47] Anheuser-Busch, 2006a.
[48] Anheuser-Busch, 2006a.
[49] Anheuser-Busch, 2006b.
[50] Miller Brewing Company, 2006.

and the BACCHUS network, as well as specific programs such as 1-800-TAXICUB and Grow Girl!.[51]

Pabst and Molson, also popular brewing companies, demonstrate no funding of alcohol-abuse prevention on their websites.

Maine Beverage Company

Maine Beverage is the private operator of Maine's wholesale liquor business. As part of their contract with the State of Maine, Maine Beverage must incorporate a "Responsible Drinking" campaign into their budget, and must integrate that campaign into their marketing and advertising initiatives. As a result, the company budgets $150,000 each year to fund this campaign.[52]

Their primary message, much like the beer companies, is the use of designated drivers when drinking. They have released two TV ads in 2006 illustrating the consequences of drinking and driving. Messages promoting designated drivers also appear on the companies' advertisements and publications.

Besides Maine Beverage, no local representative of the alcohol industry could be reached for comment.

DISCUS/The Century Council

The Distilled Spirits Council of the United States (DISCUS) asserts a long history of funding and collaborating with The Century Council, an industry-based coalition that creates and implements alcohol abuse prevention programs. Beginning with moderation programs after prohibition, they cite funding the development of the breathalyzer and several alcohol education source books and textbooks used in schools. They also describe a partnership with the National Institute of Health studying alcoholism, support of a medical school course on alcoholism diagnosis and treatment, co-sponsorship of the first statewide alcohol abuse prevention program in Texas, sponsorship of

[51] Coors Brewing Company, 2006.
[52] Maine Beverage Company, 2006.

Students Against Drunk Driving, and a contribution of $300,000 in grants given to universities to fund prevention programs.[53]

The Century Council website has information about a number of different programs including a CD-ROM program to discourage high school and college-age youth from drinking (Alcohol 101, Alcohol 101 Plus), a program working to install police officers in alcohol retail locations to deter underage purchasers and adults buying for youth (Cops in Shops), live appearances of a speaker injured as a youth in a drunk driving accident, and an interactive computer program that calculates one's blood alcohol content based on information the user plugs in.[54]

While The Century Council's programs go beyond the education- and responsibility-oriented materials put forward by most beer companies, there has been no independent third-party evaluation performed to determine their effectiveness, and it does not appear that self-administered evaluations have been performed either.

In addition to the Century Council's prevention efforts, DISCUS has also adopted a "Code of Responsible Practices for Beverage Alcohol Advertising and Marketing." This code states that "responsible drinking statements should be included in beverage alcohol advertising, marketing materials and promotional events when practicable" and also that advertising should only be targeted to those of a legal drinking age.[55] This criterion is considered met when at least 70 percent of the audience is thought to be above 21. Responsible drinking statements used by DISCUS include participation in the "Friends Don't Let Friends Drive Drunk" campaign and messages of moderation.

Criticism of Industry-Funded Programs

While the stated intent to help with prevention efforts is laudable, there has been much criticism of industry-funded programs.[56] Common concerns pertain to their actual effectiveness, and to the potentially negative impact of mixed-messages present in alcohol advertising.

[53] DISCUS, 2005.
[54] Century Council, 2006.
[55] DISCUS, 2003.
[56] For an expanded discussion of many of these criticisms, see AMA, 2002.

Effectiveness

The National Research Council and Institute of Medicine has concluded that "in the absence of documented evidence of effectiveness from independent evaluation, skepticism about the value of industry-sponsored programs is likely to continue."[57] The skepticism is not unsupported. For example, one of the simplest (and not surprisingly, most popular) programs implemented by the industry is the placement of responsibility or moderation messages on their product ads. However, studies have shown that some alcohol warnings can actually have the reverse effect on adolescents who often perceive benefits in risk-taking activities.[58] That is if they even notice or remember the messages: by using eye-tracking technology another study revealed that only about one-third of adolescent participants actually viewed the cautionary responsibility component of an alcohol print ad when it was shown to them. This study (and several others) also showed that even when adolescents do remember the presence of a responsibility or cautionary message, they generally could not recall the general concept of the message.[59]

Alcohol advertising that includes responsibility messages has also been criticized for being both insufficient and providing mixed messages. A recent study by the Center on Alcohol Marketing and Youth, for example, discovered that youth are 96 times more likely to see industry ads promoting alcohol consumption than they are to see industry ads discouraging underage drinking. Additionally, industry-sponsored responsibility or moderation ads are less likely to mention the negative consequences of drinking than those that are not industry-sponsored.[60] Many of the materials used in industry-innovated prevention campaigns are accused of glamorizing alcohol by including the same themes and images as are found in their regular product ads, by focusing on designated driver and campaigns that subtly promote the consumption of alcohol to excess by the designated drinkers, or by not acknowledging that abstaining from drinking is often a better choice.[61] In fact, most responsibility ads depict alcohol being consumed, even encourage its consumption. For example, a responsibility ad created by Miller Brewing Company shows a picture of a party hat with the words "Make your first

[57] CAMY, 2005, 2.
[58] As cited in Fox, et al., 1998.
[59] As cited in Fox, et al., 1998.
[60] CAMY, 2005.
[61] DeJong, et al., 1992; CAMY, 2005.

resolution not to overdo it. Enjoy yourself this New Year's Eve. Please Drink Responsibly."[62] While this ad does in fact promote responsible drinking, it nonetheless promotes drinking as an acceptable, even expected, New Year's Eve activity. Similarly, the Don't-Drink-and-Drive messages of most responsibility ads, for instance, promote responsible driving but do not necessarily encourage decreased consumption of alcohol.

Despite the alcohol industry's assertion that product ads do not target youth (yet their responsibility ads, they insist, do reach them), the Maine Youth Empowerment and Policy Project has released research that shows otherwise. In a survey administered to Maine high school students, 65 percent of youth felt that they were being targeted by alcohol product ads.[63]

Most campaigns launched by the alcohol industry focus on media distribution, creating flyers, websites, pamphlets, and other informational material that can be used by parents, teachers, or sellers. Many of these materials do contain positive prevention messages: making sure store clerks ID alcohol buyers, discouraging the underage celebration of special events with alcohol, opposing drunk driving, and discouraging parental supply of alcohol to their children. Yet while these messages are on the right track, they rely solely on education as a strategy, which research in the prevention field has shown to be inadequate when used alone.[64] Other industry efforts may even be counter-productive—the Century Council's computer program that calculates one's blood alcohol content, for example, is a variation on the criticized strategy of using breath analysis tests in places like college-town bars. Although its intent is to help customer's monitor their alcohol intake and reduce drunk driving, it actually served to increase consumption as drinkers competed for the highest blood alcohol content (BAC).[65]

Industry-created campaigns, as noted above, are generally not evaluated for effectiveness—one of the key guiding principles stressed by governmental and non-industry prevention organizations. Anheuser-Busch did include third-party evaluations cited on their website, however, they consisted solely of marketing reports evaluating whether or not people had heard

[62] Miller Brewing Company, 2006.
[63] YEP, 2005.
[64] NIAAA, 2002; CASA 1997.
[65] NIAAA, 2002.

of and/or used the designated driver system and whether or not store owners were using the Operation ID material sent to them. The evaluations themselves revealed flaws with the data collection process, such as including irrelevant questions such as what type of car one would like to be driven home in by a designated driver (choices include a hummer, Dale Earnhardt's Chevrolet, or the Budweiser Clydesdale Hitch), and what celebrity one would most want as their designated driver.[66] Nowhere in the program evaluations do they actually evaluate the impact of their efforts on drinking habits or youth attitudes towards drinking. The industry nonetheless claims that they have done so, noting that "dramatic reductions in underage drinking and drunk driving for more than the past two decades indicate that community-based programs, partnerships, and personal responsibility messages are working." [67] They go on to cite drinking statistics unrelated to their own prevention programs, implying a link between these positive trends and their own programs. However, much more data would be needed to support such a claim.

Besides flaws in their own campaigns and program evaluations, a 1996 study conducted by the Center for Science in the Public Interest indicated that even independent community-based programs are susceptible to pro-industry bias once they receive industry funding. In general, stricter alcohol policies were supported 74 percent of the time by non-industry funded organizations, and 45 percent of the time among organizations currently receiving industry funds. Specifically, their study revealed that while 79 percent of independent programs supported increasing state alcohol taxes, half of industry-funded programs supported the increase. The gap was even larger for a proposed federal tax increase (65 percent to 21 percent). This study suggests the potential for industry money to come with strings attached, and/or that the alcohol industry primarily channels its dollars towards prevention efforts that advance their own economic interests (or at least that will not contradict them).[68]

Vested Economic Interests

The National Center on Addiction and Substance Abuse (CASA) recently released a White Paper concerning *The Commercial Value of Underage Drinking and Pathological Drinking to the*

[66] Anheuser-Busch, 2005.
[67] Anheuser-Busch, 2006a.
[68] CSPI, 1996.

Alcohol Industry. In it, CASA provides a cost analysis of how dependent the alcohol industry actually is on underage and pathological (using DSM-IV criteria) drinkers, calculating that those two populations combined provide the industry with between $48.3 billion and $69.2 billion annually. This accounts for at least 37.2%—and perhaps even half (48.8 percent)—of all alcohol sold. The study also discussed the financial benefit of underage drinkers to the industry not only as new customers, but more importantly as customers with a heightened potential for abuse both in the present and the future.[69] The report notes, for example:

> "The interest of the alcohol industry – especially those who sell beer – in underage drinking is understandable, if appalling. Underage drinkers are a critical segment of the alcohol beverage market. Individuals who do not drink before age 21 are virtually certain never to do so: 82.8 percent of adults who drink had their first drink of alcohol before age 21. Underage drinkers consume 25 percent of the alcohol – most often beer – sold in this country. In 1998, they accounted for up to $27 billion of the $108 billion spent on alcohol, including as much as $15 billion on beer. Without underage drinkers, the alcohol industry, and the beer industry in particular, would suffer severe economic declines and dramatic loss of profits."[70]

Orley and Logan, however, advise against reflexively invalidating any efforts the industry makes towards improving public health, noting that "partnership is the way forward in dealing with the issues concerning social aspects of alcohol."[71] When considering funding prevention and treatment, therefore, alcohol industry contributions should be considered. At the same time, the common criticisms waged against industry-created and funded programs should always be addressed when using those contributions.

[69] CASA, 2006.
[70] CASA, 2002, ii
[71] Orley & Logan, 2005, 51

Chapter 6: Informal Needs Assessment of Maine's Prevention Programs

Maine employs measures to ensure that funded programs will be effective in reducing AOD use in their communities. For example, all prevention programs contracted with the Office of Substance Abuse have to respond to their specific community situation. Prior to implementation, they must perform a needs assessment of their community and design their program in response to those needs. OSA also has an outcome-based funding model requiring all programs receiving funds to demonstrate their effectiveness through progress reports and program evaluations, and all programs must demonstrate that they are evidence-based to continue receiving funds. Assistance in program development is also provided to ensure effective strategies are being implemented, as well as a requirement to include at least one environmental strategy.

Some of Maine's programs have achieved national recognition or otherwise proven themselves to be successful in preventing substance abuse. East End Children's Workshop, for example, was recognized as one of the top ten theater-based programs in the United States. Since 1995, Maine's Safe and Drug-Free Schools initiative has exceeded many of the goals adopted under the Improving America's Schools Act. The Maine Youth Alcohol and Drug Use Survey data supports this initiative's success by suggesting a steady decline in life-time alcohol use among Maine youth since 2000 (Table 5.1). Additionally, OSA's commitment to reducing underage drinking through improved enforcement has resulted in 94% increase in drinking summonses, and a 10% decrease in the amount of youth who perceive that obtaining alcohol is easy. [72] One such enforcement project in Piscataquis County gained national recognition for its success.[73]

Table 6.1
Percentage Reporting Lifetime Use of Alcohol, all Grades and Genders

2000	2002	2004	2006
57%	53.5%	50.7%	47.7%

This is not to say that underage drinking and other forms of substance abuse are no longer problems. The 2006 MYDAUS report, for example, shows that a fifth (20.5%) of all 8th graders used alcohol in the past 30 days. Almost half (49.1%) of all 12th graders indicated past-month

[72] OSA, 2004a, 6.
[73] OSA, 2005b.

use of alcohol. Alcohol reveals itself to be the consistent substance of choice among Maine students, being the substance used by the largest proportion of students in every grade.[74] About three quarters (73.8%) of 12th graders, for example, have used alcohol at least once in their life, compared to 19.7% who have illegally used prescription drugs, 8.7% who have tried cocaine, and 5.8% who have tried ecstasy.[75] Although Maine's substance abuse rates in and of themselves have been declining, comparison of Maine's data to the National Household Survey reveals that the state remains above the national average for AOD abuse rates. Maine, for example, continues to be higher than the national average in not only alcohol abuse, but also youth marijuana use.[76] We are also above the national average in the effects of AOD abuse. For example, in the year 2000, 2.26 deaths per 10,000 people occurred in the United States due to alcohol abuse. That same year, Maine experienced 3.71 deaths per 10,000 people due to alcohol abuse.[77]

Gaps in Prevention

State-level and community-level stakeholders, as well as needs assessment data, have identified many gaps and areas of need in Maine's prevention efforts. Some suggestions also originate from third-party researchers in the form of recommendations for increasing the effectiveness of both implementation and infrastructure. Tables 6.2 and 6.3 present some recommendations for strengthening prevention efforts in Maine, drawing on both stakeholder input and national research.

Table 6.2
Suggestions for Improving Prevention Practices

Earlier identification and intervention for alcohol-abusing youth and young adults	**Recent efforts have increased the availability of treatment for adolescents. However, there is a major gap in the system in that there is little available for intervention services that could help decrease use in between the time that a young person begins experimenting and prior to needing treatment for a diagnosable substance abuse problem.**
Increase cultural competence and targeting of subpopulations	Competence needs to be increased in serving women, survivors of abuse/trauma, homeless youth, GLBTQ youth, racial/ethnic minorities, foster children, and other populations underserved through current prevention programs. Small sample sizes are continually problematic for needs assessments and program evaluations of these subpopulations,

[74] OSA, 2005a, 15.
[75] OSA, 2006c.
[76] OSA, 2002.
[77] Hollingworth, et al., 2006; OSA, 2004b; US Census Data

	particularly racial/ethnic subpopulations as non-white groups compose only 3% of the population in Maine. However, a 2005 federal grant funded more accurate cultural subpopulation needs assessments, the data from which will be available in the fall of 2006.
Increase communication with the public	Many members of the public are not well informed about the consequences of excessive alcohol use. There are low-risk guidelines determined by research and established in the USDA nutritional guidelines, but most people are not aware of them. Most people also are not aware of the costs related to alcohol abuse or the problems that result from underage drinking. While OSA has engaged in two parent media campaigns, more could be done to increase public understanding about substance abuse issues beyond youth.
Better geographic coverage	Geographic coverage remains an issue; many communities lack substance abuse prevention entirely, particularly those farther north in more sparsely populated regions. Currently, Maine does not have a state or even county-based prevention infrastructure or public health system. Most prevention programs are thus born out of small, isolated community-based initiatives. The result of this is a very uneven distribution of programs around the state; one in which programs are concentrated primarily in communities with strong grant-writing skills. In sparsely populated unorganized territories, plantations, and small towns, adequate prevention infrastructure is lacking.
Increased enforcement and other environmental strategies	Maine is not fully implementing recommendations of the National Academies of Science, which were put forward as effective and research-based strategies for reducing underage drinking, including: mandated training for sellers and servers of alcohol; strong efforts to prevent and detect use of false IDs by minors; work to increase the number of local enforcement agencies that actively incorporate stopping underage drinking parties into their practices; and standardization of non-criminal and administrative penalties dealt to minors for alcohol infractions.

Sources: OSA, 2004a, 2006c, 2006e; National Research Council and Institute of Medicine, 2003

Table 6.3
Suggestions for Improving Prevention Infrastructure

Increase collaboration between departments and organizations	Including other offices within Health and Human Services (such as Child Welfare), and other departments and organizations involved in public health.
Improve training for both leadership and staff of programs serving youth, young adults, and other high-risk populations	Training for all public and private school-teachers has also been suggested, given their close relationship with youth.
Improve collection, analysis, and use of data	This includes better collection and analysis of needs assessments data. Investment in stronger needs assessment results in more effective program designs. Funds for Maine's student survey are no longer provided by the Federal government, however the recent addition of a federally-funded epidemiologist to the OSA team should help. This also includes better training for prevention providers on data analysis and the benefits of data-driven practices.

Sources: OSA, 2004a, 2006c, 2006e

OSA's prevention team understands that to improve all aspects of the substance abuse prevention system will require several years of effort. In their most recent Strategic Prevention Framework plan, a document that is reviewed and approved by the federal Center for Substance Abuse Prevention, they identify a targeted list of needs that should be addressed immediately. The work at improving these areas of need in the system is necessary before other needs can be successfully addressed.

Two of the most immediate needs to be addressed in Maine's prevention system are:

- Establishing a comprehensive, state-wide, sustainable prevention system
    - This goal involves building a local/regional infrastructure to prevent substance abuse that can be sustained over the long-term rather than dependent on the ebb and flow of time-limited categorical federal grants. Establishing a permanent infrastructure at these levels would stabilize the prevention system, since currently local and regional initiatives work primarily from competitive grants that are limited in time and scope – that is, successful prevention is currently hindered not only by an application process that generates competition more than collaboration between communities, but also by a funding structure that often expires before a program's true potential can be realized.
    - Striking the ideal balance of authority for program planning between state, local, and regional levels is also important . The right balance allows communities to implement more targeted, data-driven initiatives that respond directly to the specific needs of individual communities, while still receiving guidance, support, and training and technical assistance from the State level, which is responsible for monitoring for effective implementation and outcomes.
- Targeting both population-based risk for AOD use ***and*** addressing individual risk experienced by individuals with adverse childhood experiences or genetic factors that raise their individual risk profile.
    - This will require using both environmental strategies as well as reaching high-risk individuals and subpopulations with more intensive prevention and intervention. This may necessitate a cross-systems approach, bringing together resources from

multiple organizations, departments, and/or funding sources in order to reach those individuals who are most at risk for multiple problems.

For more detail concerning the work of the SPF SIG prevention grant, see www.maine.gov/dhhs/osa/prevention/community/spfsig/.

OSA estimates that in order for the current needs within the substance abuse prevention system to be adequately met, an additional $9,600,000 would be needed.[78]

Chapter 7: Informal Needs Assessment of Maine's Treatment Programs

According to the SAMHSA State Summary, Maine's treatment programs have proven themselves effective in terms of the National Outcome Measures (NOMs). Tracking clients from admission to discharge in SFY 2004, Maine treatment programs fostered a 6 point increase in the percentage of clients reporting employment, a 38.4 point decrease in the percentage of clients arrested, and approximately a 22 point increase in both the percentages of clients abstaining from alcohol and the percentage abstaining from drugs following discharge.[79]

Despite these successes, however, there are gaps in the state's treatment programs. These gaps reflect a nationwide problem of a discrepancy between need for treatment and availability of treatment services. The Robert Wood Johnson Foundation has identified that in the U.S. over 18 million alcohol users needed treatment for their condition, yet fewer than 25 percent of them actually received it. This is due to limited access to treatment facilities and programs, as well as individual reluctance to access treatment.[80] Echoing this statistic, in 2005 Maine was able to serve 17% of those eligible for and in need of substance abuse treatment.[81] In Maine, according to the 2003 and 2004 National Survey of Drug Abuse and Health, there are a total of 34,000 individuals classified as needing—but not receiving—treatment for illicit drug use, and 81,000

[78] If provided the full $9.6 million, OSA could return half that amount to the State General Fund fill budget gaps in SFY 2008 and 2009. This is due to remaining State Incentive Grant funds during those years and the need to pilot some components of the system on a smaller scale prior to statewide implementation in SFY 2010. An itemized list of these components is available upon request.
[79] SAMHSA, 2006b.
[80] Robert Wood Johnson Foundation, 2001, 104.
[81] OSA, 2005a.

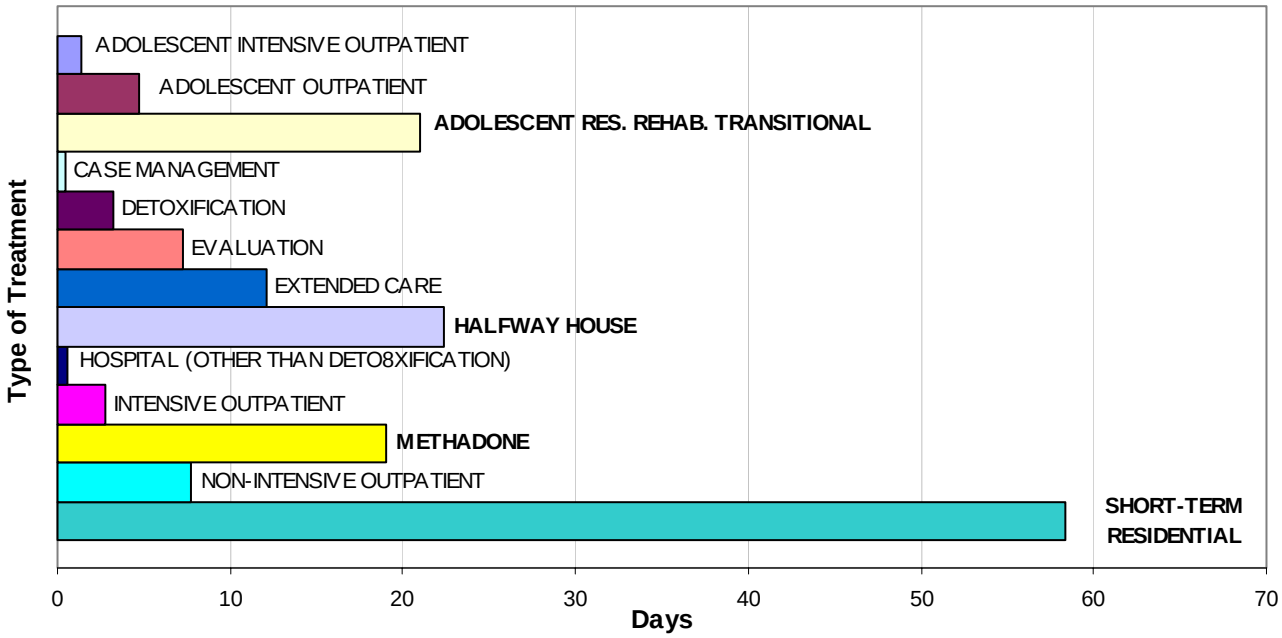
individuals classified as needing—but not receiving—treatment for alcohol abuse.[82]According to the most recent Treatment Data Systems (TDS) data, there are 413 people currently on waiting lists for treatment across the state. This, if anything, is likely to be an understatement, as many agencies do not adequately report their waiting list data. Additionally, there are several treatment facilities operating at past their capacity for non-residential services, averaging 26 clients over capacity. The most overwhelmed facility reports serving 61 clients beyond the number for which they are equipped.[83]

In addition to the number of people currently on waiting lists, the length of time the average client waits for treatment is also an indication of where the greatest need is (Figure 7.1, Appendix D).[84] Clearly, some treatment types are in greater demand than others. Among clients both with and without co-occurring mental illnesses (CMI), comparable—and quite extended—wait-times are experienced for halfway houses (22.33 days, 35.08 days CMI), methadone treatment (19.08 days, 22.81 days CMI), and adolescent residential rehabilitation (20.96 days, 29.44 days CMI). Extended wait-times are experienced for short-term residential treatment as well, but comparably more so for those not diagnosed with a co-occurring mental illness (58.33 days for non-CMI, 24.08 days for CMI). Finally, CMI clients experience an average wait-time of 25.06 days before entering extended care, a problem not experienced as severely by non-CMI clients.

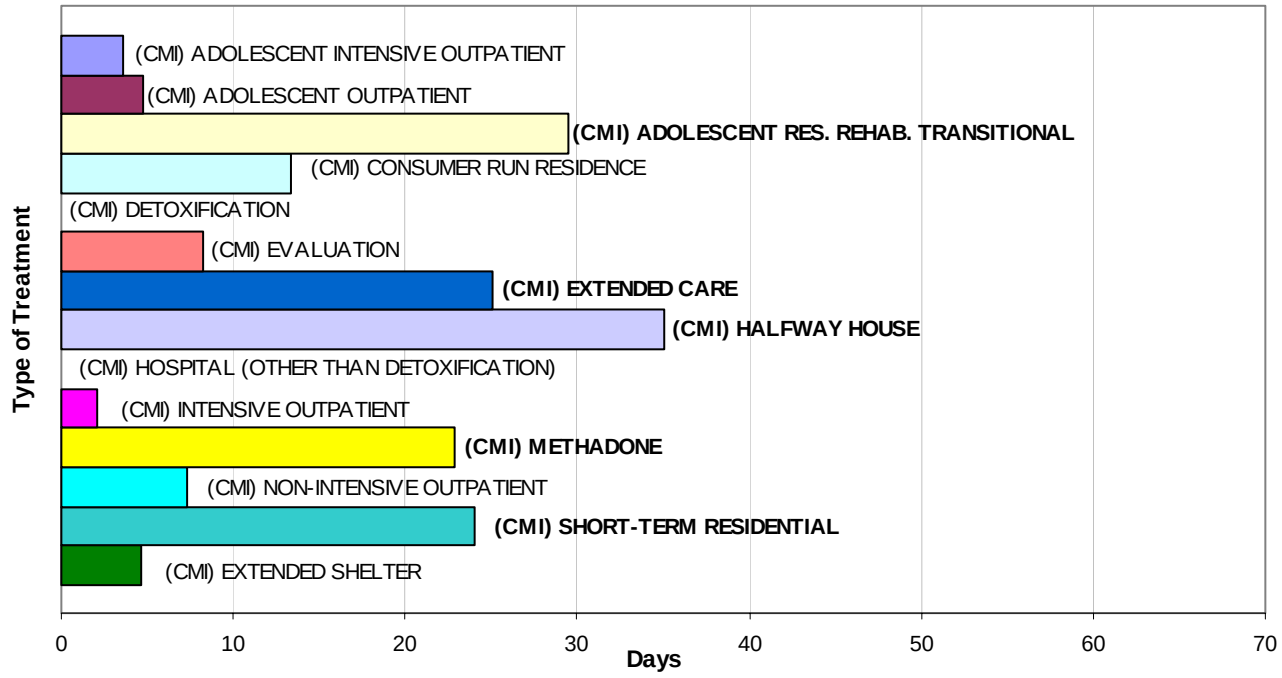
These figures are averages. Individuals can wait several months to a year for treatment. Not only are these long waiting periods in conflict with one of the guiding principles of effective treatment—that of services being readily accessible—but are potentially dangerous in cases of severe substance dependence.

[82] SAMHSA, 2006c.
[83] OSA 2006d.
[84] These figures only consider data reported to OSA through TDS. Figures may be different if an agency that has very high or low wait-times does not report this information to TDS.

Figure 7.1
Average Wait Time for Admission into Treatment by Type of Care
No Co-existing Mental Illness



Average Wait Time for Admission into Treatment by Type of Care,
Co-existing Mental Illness



Source: OSA, 2006d

Detoxification has also been identified as one of the biggest gaps in treatment for adolescents. While most adolescents do not require detoxification treatment, those that do are often denied care due to their age—since it is not seen as a prevalent issue, many detox facilities have stopped accepting adolescent patients. This presents a problem for the adolescent opiate addict, and Maine needs to increase treatment accessibility for this population. This includes providing training to providers concerning adolescent treatment in general.[85]

On the planning side, there is a need for better county-level needs assessments. As with prevention, treatment is more effective if providers know specifics concerning where and by whom certain substances are being abused more heavily. When this information is known, areas and populations can be targeted with specific programs designed to meet the needs of that particular community. The more accurately treatment services are meeting the needs of an area or population, the more effective that treatment will be.

There are geographical gaps in Maine's treatment programs just as there are with prevention programs. Treatment programs are similarly concentrated in the southern portion of the state (Figure 7.1). This makes economical sense given the higher population density; however northern areas remain underserved in the face of rising drug problems. For example, northern counties currently have a higher per capita rate of prescription drug abuse than southern counties.[86]

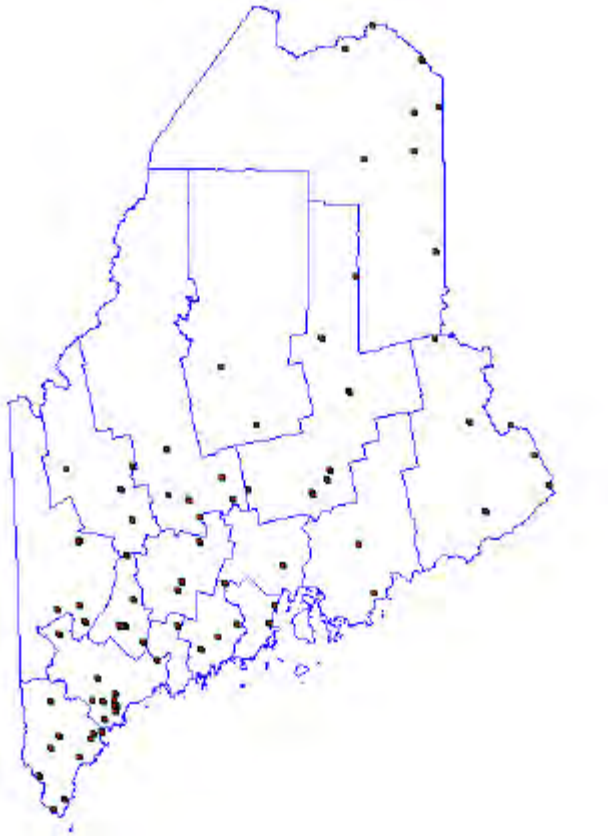


Figure 7.2: Location of Treatment Facilities, Reproduced from SAMSHA, 2004.

[85] OSA, 2003.
[86] OSA, 2006c.

Finally, as is mentioned briefly in Chapter 4, areas of need in treatment services are often created by resistance from the community or other sources. Resistance has often surfaced in regards to medication-assisted therapies, particularly in the creation of methadone clinics. This opposition persists despite the overwhelming evidence for the modality's effectiveness in treating certain types of addictions, and has at several times blocked the creation of such treatment programs.

OSA estimates that in order for all those in Maine who both need and would seek treatment to be served, $4,086,000 in additional funds would be needed. This figure was arrived at by dividing the total cost of treatment in 2000 ($19.3 million) by the total number of admissions into treatment in 2000 (16,706).[87] This figure—$1155.73—represents the cost per client admission into treatment, which is then adjusted up to $1361.77 to account for inflation since 2000.[88] This number is then multiplied by 3000, the estimated number of people who have within the past year sought treatment and have been unable to access it due to waiting lists.[89]

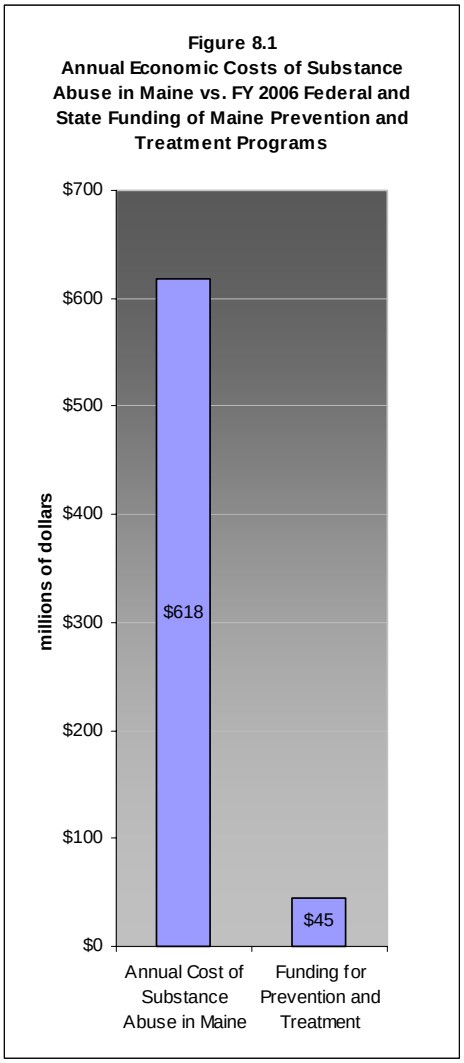
Chapter 8: Potential Sources of Additional Funding

It is clear from Chapters 6 and 7 that both treatment and prevention, while effective, could be improved. Additional substance abuse prevention and treatment to fill those areas of need would decrease the social and economic toll that abuse takes every year on the people of Maine. In a 1998 report, substance abuse costs were referred to as "the largest hidden tax" and the accuracy of this description becomes clear when one looks at the numbers.[90]

[87] OSA, 2004b
[88] BLS, 2006a
[89] OSA, Waiting List data calendar year 2005
[90] OSA, 1998.

From an analysis of the economic cost of substance abuse in Maine for 2000:

Figure 8.1
Annual Economic Costs of Substance Abuse in Maine vs. FY 2006 Federal and State Funding of Maine Prevention and Treatment Programs



Sources: OSA 2004b, 2006b

- $8.5 million estimated to cover the costs of fires associated with alcohol abuse.
- $19.3 million in substance abuse treatment costs.
- $41.7 million in non-medical costs of alcohol-related motor vehicle accidents.
- $67.7 million in child welfare costs related to AOD abuse.
- $97.4 million in economic losses attributed to decreased productivity due to AOD abuse. $69.8 million of that (72 percent) was due to alcohol abuse.
- $113 million in charges for medical care related to AOD abuse, including costs of fetal alcohol syndrome, emergency hospitalization, overdoses, etc.
- $128.4 million due to 7,625 arrests related to AOD abuse. 2,280 of those arrests (30 percent) were related to alcohol abuse, costing $49.1 million.
- $140.3 million in mortality costs due to 541 deaths related to AOD abuse. 473 of those deaths (87 percent) were due to alcohol abuse specifically, comprising $104.2 million of the total
- The total economic cost of AOD abuse in Maine, including the above figures and additional related costs, is estimated at **$618 million annually, $485 a year for every resident in Maine**. Alcohol abuse is responsible for approximately 70 percent of those costs.[91]

These figures are based on a conservative methodology. Even so, the estimated annual cost looms over the amount currently spent on prevention and treatment by federal and state sources

[91] OSA, 2004b.

combined (Figure 8.1). Even when one eliminates less direct figures such as the economic costs of lost productivity, years of life lost, and AOD-related welfare services, the combined cost of AOD-related crime, medical care, fires, and non-medical vehicle crash costs still total $286 million[92]. Alcohol accounts for 69 percent of this figure, comprising $196.2 million of the direct cost.[93]

In fact, any estimate based on figures from 2000 is likely to be an underestimate given that in 2005 a 10 percent increase in drug-related violent crime throughout Maine was documented. Michael Cantara, the state's public safety commissioner, has in response called for communities to strengthen and more effectively integrate prevention, education, enforcement, and treatment in order to ensure this spike does not become a continuing trend.[94]

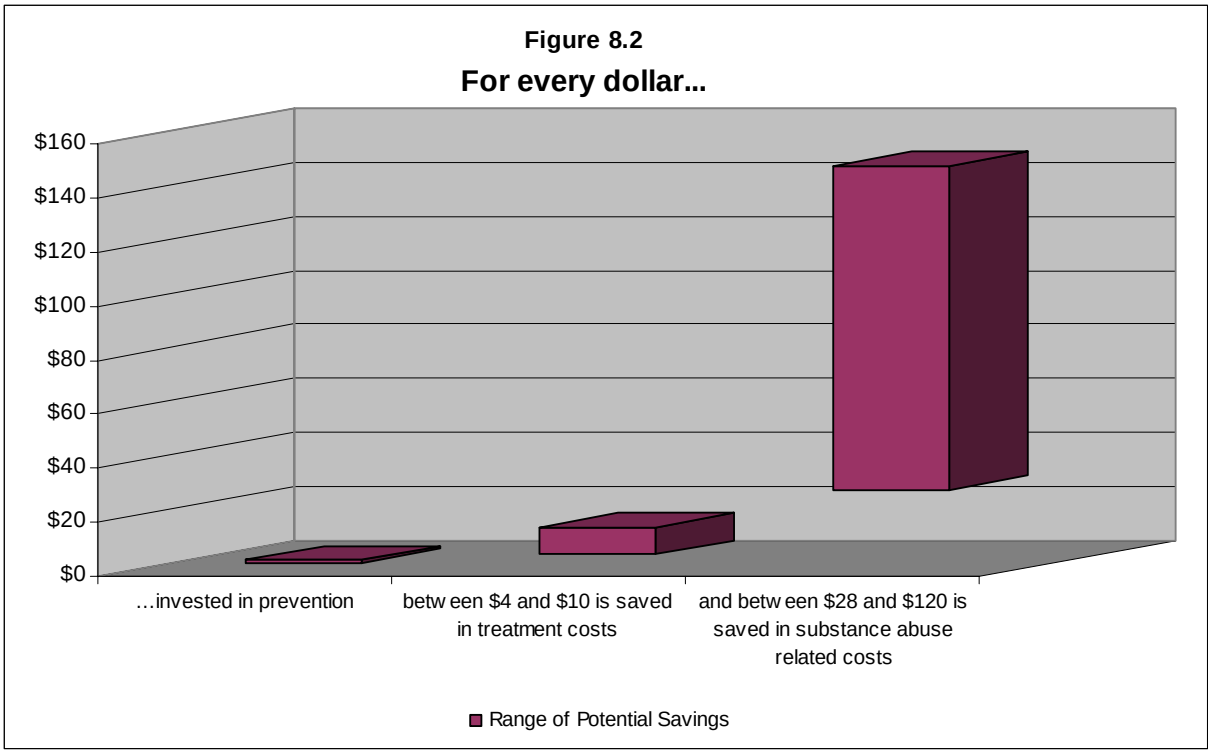
Studies have shown that prevention and treatment efforts are extremely cost-effective when looked at from this perspective. For every dollar spent on prevention, for example, it is estimated that four or five dollars are saved in treatment and counseling costs.[95] Other studies estimate up to ten dollars saved for every dollar invested in prevention.[96]

Likewise, investing in treatment is cost-effective for the state. Many states utilize cost offset studies to evaluate their programs' effectiveness, and invariably the cost of treatment is far outweighed by its estimated monetary benefit. For example, a study in California found that while the cost of treating clients for one year totaled $209 million, the savings in costs incurred during treatment and in the year following treatment were estimated at $1.5 billion, roughly a seven-to-one ratio.[97] According to NIDA, the cost-effectiveness of investing in treatment may be even greater than that. They estimate that for every dollar invested in treatment, up to twelve dollars is potentially saved in reduced drug-related crime, criminal justice, theft, and health care.[98] This does not include the increased financial benefit to society when an individual is

[92] Crime=$103.5 million, Medical=$113.0 million, Treatment=$19.3 million, Fire=$8.5 million, Non-medical vehicle crash costs = $41.7 million
[93] OSA, 2004b.
[94] Maxwell, 2006.
[95] OSA, 2004a.
[96] NIDA, 2003.
[97] NASADAD, 2001, 25.
[98] NIDA, 1999.

rehabilitated and can resume work and otherwise contribute to their community in a meaningful way.

If one combines the estimated cost-effectiveness of both prevention and treatment, one could suggest that every dollar invested in effective substance abuse prevention potentially saves the State between $28 and $120 (Figure 8.2) [99]. This is a very wide range since such an estimate is



difficult to pin down to the dollar. Nonetheless, it suggests the importance, both financially and socially, of investing in prevention and treatment rather than waiting for the expensive and destructive effects of AOD abuse to impact the state. This is consistent with the findings of the Maine Legislative Youth Advisory Council, who note that evidence-based youth-oriented prevention programs are the most cost-effective ways to reduce youth substance abuse.[100] In fact, the Washington State Institute for Public Policy recently released a study that found the chances of a state losing money from expanding evidence-based practices was less than 1 percent.[101]

[99] Assuming between $4 and $10 is saved in treatment costs for each prevention dollar, and a potential $7 to $12 savings in substance abuse costs for each of those ten dollars (since those can be thought of as "treatment dollars": 4(7)=28, 10(12)=120.
[100] LYAC, 2002.
[101] WSIPP, 2006.

Currently, alcohol abusers and their families bear 45 percent of the total cost of alcohol abuse.

The rest is distributed to governments, private insurance agencies, and the victims of alcohol-related crime.[102] As requested by LD 1838, we have examined several options for increasing funding for prevention and treatment programs that would shift more of that burden towards those who actively contribute to the costs of alcohol abuse, namely users themselves as well as retailers and wholesalers of alcohol. Among these are increasing liquor licensing fees, increasing the alcohol tax, engaging in public-private partnerships with industries, and using money from the Maine Beverage revenue-sharing agreement. Other possibilities include dedicating a portion of the fines collected from alcohol violations towards prevention and treatment.

Increasing Liquor License Fees

Liquor licenses are currently controlled by the state government, and the fee charged depends on the types of alcohol sold and the type of premise on which they are sold. Licensing fees vary between $10 and $2200 annually (See Appendix E.1). From these fees, the state generated $3,103,990 in SFY 2005[103] that was deposited into the General Fund.

Scenario A: Increase fees based on sales volume

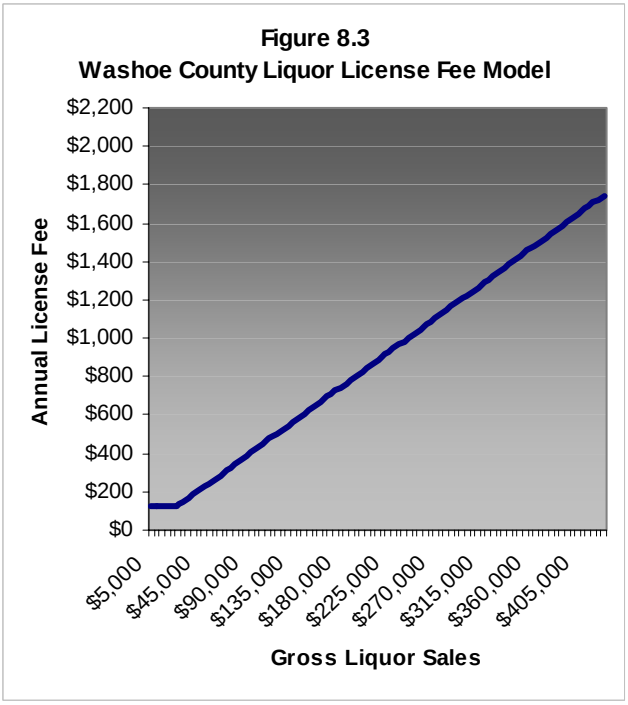
Although the resolve specifically asked for such a calculation, it is difficult to ascertain the actual economic effect of an increase in liquor license fees proportional to sales volume. The major barrier is the lack of available information about sales volume. Currently, income from liquor is not separately itemized on sellers' income tax forms. While total sales for all products is available on an outlet by outlet basis, it is not safe to assume that higher total sales or income equals higher sales volume of alcohol.[104] Additionally, gallonage reports are not based on retail sales of individual outlets, but are aggregate figures based on the amount shipped by each distributor in Maine. In order to calculate the effect of a graduated increase in fees based on sales volume, the Liquor Licensing Department would need to obtain alcohol sales volume information on all licensees.

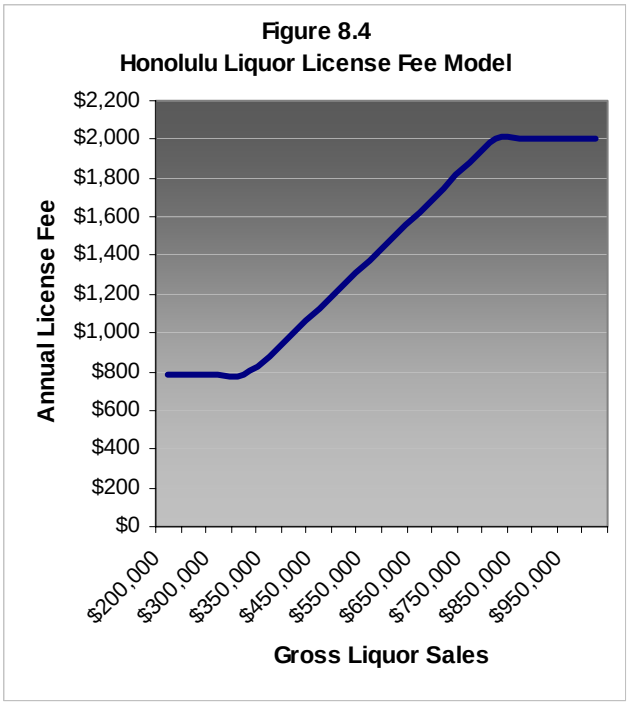
[102] NIAAA, 2001.
[103] SFY 2005 data is the most current information available concerning liquor license and alcohol tax revenue.
[104] For example, a supermarket may have higher total sales than a liquor store, but the liquor store most likely sells a higher volume of alcohol.

Volume-based models Maine could examine are provided by other states. Washoe County, NV, for example, has a graduated liquor licensing program based on sales volume. After charging a fixed quarterly license fee based on license type, an additional fee is charged at the rate of $1 per quarter for every $1,000 in gross liquor sales in excess of $25,000.[105] For example, an outlet selling $35,000 in alcohol during the fiscal year would be charged the fixed fee plus an additional $10 each fiscal quarter. No maximum fee amount is enforced (Figure 8.3).

Honolulu also has a graduated fee scale, but designed theirs slightly differently. Like Washoe County, they charge an additional license fee if sales exceed a certain amount. However, in Honolulu the fee is calculated as a percentage of total sales, with minimum and maximum fees designated. For example, a retailer serving beer and wine is charged either a flat rate of $780, or "one-quarter of one percent (0.0025) of gross sales, whichever is higher, not to exceed $2000"[106]. Honolulu thus establishes both a minimum and maximum fee, with a sliding scale based on the gross value of alcohol and liquor sold (Figure 8.4). This would mean that a beer/wine retailer selling up to $312,000 in alcohol would pay the minimum fee, a retailer selling $800,000 and over in alcohol would pay $2000, and a retailer somewhere in the middle would pay a percentage. A retailer selling $500,000 worth of alcohol, for example, would pay a license fee of $1250.

[105] DBLCE, 2006.
[106] DBFS, 1998.





Sources: DBLCE, 2006; DBFS, 1998.

Something to keep in mind, however, when considering a graduated fee scale based on sales volume, are the unintended consequences of such a change. There are three possible outcomes to such an increase. These are not mutually exclusive.

1. Fee increases provide incentive for all retailers to reduce the amount of liquor they sell, thereby potentially reducing possible community consumption.
2. Fee increases raise retail prices, potentially reducing consumption, particularly among price-sensitive youth.
3. Fee increases reduce the number of high-volume liquor stores and increase the number of small liquor stores – potentially increasing density and catering to the small-store preference of many underage drinkers.

Whereas the first two outcomes represent a positive effect on public health, the last gives reason to approach a sales volume-based increase with caution. In a 2000 study of underage OUI offenders in Maine, for example, almost a quarter of respondents reported purchasing alcohol at a convenience store or a gas station, whereas only 11 percent indicated purchasing from a

grocery store. An even smaller 6 percent reported purchasing from a liquor store.[107] This study reveals a preference by youth for purchasing their alcohol from smaller alcohol outlets as opposed to higher-volume agency stores or supermarkets. This is possibly due not only to convenience, but also to anecdotal evidence that smaller stores are more likely to have inexperienced employees that are less likely to card for alcohol.

Additionally, the potential for increased outlet density is worrisome. High density of alcohol outlets has been linked to an increase in consumption as well as an increase in violence, notably alcohol-related injury crashes, assaults, and homicides. For example, a study of Los Angeles County demonstrated a 0.54% increase in crashes for each additional outlet, and a study of New Orleans showed a 2% increase in homicides for every 10% increase in stores selling alcohol.[108] The effects of alcohol density are moderated by the characteristics of the population accessing the alcohol outlets and other societal/environmental factors that either support or discourage disorganization, but quite often similar positive correlations between density and increased violence/injury are found.[109]

In the face of missing sales volume information and the potential drawbacks to a fee scale based on sales volume, other scenarios for increasing fees are presented for consideration. There are three ways that liquor license fees could be increased. The first involves a flat increase that is applied to every level of licensing (Scenario B). The second option involves a graduated increase based on level of licensure rather than sales volume (Scenarios C and D). The final option considers the research on density and suggests additional fees for outlets in areas with higher outlet density (Scenario E)

Scenario B: Flat Rate Increase

The revenue from a flat rate increase can be easily estimated by multiplying the amount of the increase by 8,742, the current number of active liquor licenses in the state of Maine.

[107] Matusovich, 2002.
[108] Scribner, et al., 1994; Drug Strategies, 1999.
[109] Gruenewald, et al., 2006.

If Fees Are Increased by…	Revenue will increase by…	And Total Revenue will be…
$10.00	$87,420	$3,191,410
$25.00	$218,550	$3,322,540
$50.00	$437,100	$3,541,090
$75.00	$655,650	$3,759,640
$100.00	$874,200	$3,978,190

Source: DPS, 2006a

Scenario C: Percentage Increase

Given the wide range of fees it perhaps makes more sense to use a graduated fee increase. One way to do this would be to increase by percentage rather than by dollar amount. Scenario C represents this type of increase, where current fees are increased by various percentages and rounded up to the nearest dollar.

If Fees Are Increased by…	Revenue will increase by…	And Total Revenue will be…
1%	$33,128	$3,137,118
5%	$156,264	$3,260,254
10%	$310,433	$3,414,423
20%	$620,798	$3,724,788
25%	$777,062	$3,881,052

Source: DPS, 2006a
See Appendix E.2 for Effect on Individual License Levels

Scenario D: Percentage Increase Rounded Up to Tens Place

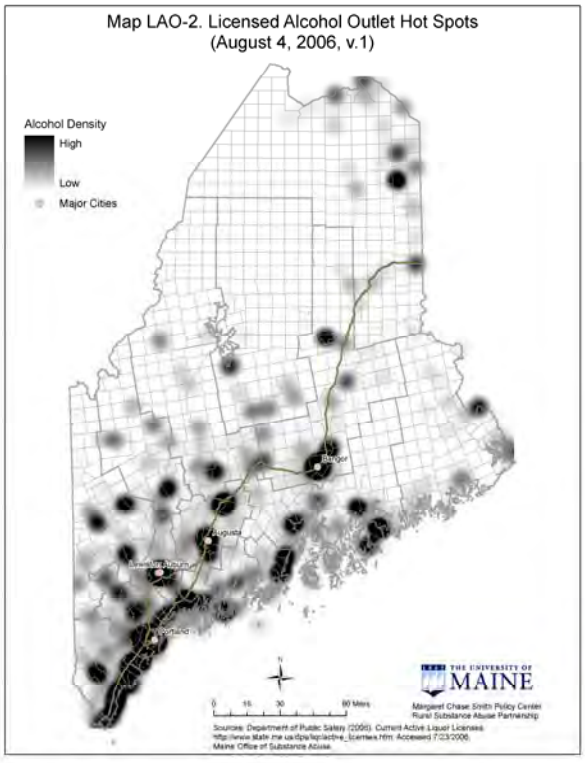
While Scenario C may be more equitable, it does complicate the license fee structure by producing unusual numbers for license fees. For example, under a 10% increase a $10 license fee becomes $11, and a $220 fee becomes $242 (See Appendix E.2). Scenario C thus represents a percentage increase that is rounded up to the nearest tens place for ease of use. This rounding also significantly increases revenue without significantly increasing the burden on any one kind of outlet versus another.

If Fees Are Increased by…	Revenue will increase by…	And Total Revenue will be…
1% and rounded up to tens place	$92,922	$3,196,912
5% and rounded up to tens place	$190,730	$3,294,720
10% and rounded up to tens place	$331,620	$3,435,610
20% and rounded up to tens place	$634,320	$3,738,310
25% and rounded up to tens place	$803,670	$3,907,660

Source: DPS, 2006a
See Appendix E.3 for Effect on Individual License Levels

Scenario E: Increasing License Fees for Outlets in High-Density Areas

Given the research illustrating higher crime rates in areas with higher densities of alcohol outlets (see page 49), it perhaps makes sense to propose an altered fee structure that centers on density. By imposing higher license fees on outlets in high-density areas, one not only raises additional revenue, but also discourages outlets from locating too close together. Additionally, the decreased competition between outlets would arguably allow prices to remain higher, potentially decreasing consumption (or at least discouraging increased consumption). Based on active liquor license data as of July 23, 2006, there are 1,723 outlets located in minor civil divisions with a density equal to or greater than 1 outlet per square mile.[110] Imposing an additional fee of $20 on each of these outlets would potentially raise an additional $34,480 in revenue. To further discourage outlets from locating too close to each other, a two-tiered fee structure could be created. For example, if in addition to the $20 fee, outlets located in towns with densities greater than 2 outlets per square mile were charged an additional $30 (totaling $50), all fees combined would total $63,190.[111]



Another way to think about outlet density is to consider the number of outlets per 1000 people. While the impact of high outlet-to-population ratios on alcohol-related problems has not been gauged, it is logical that—in general— the greater the availability, the greater the consumption and its related problems. If an additional fee structure was created based on this kind of density, imposing an additional fee of $20 on all outlets located in towns with a ratio greater than 5 outlets per 1000 people, an additional $19,780 in revenue could potentially be raised. If two

[110] As the research does not indicate a particular density level as the catalyst for increased alcohol-related problems, 1 outlet/mi.^{2} is proposed as a reasonable cutoff line.
[111] See Appendix F for alcohol outlet geographical density by town

additional tiers were added to this structure to further discourage high outlet-to-population ratios—for example, $20 for outlets located in towns with ratios between 5 and 10 outlets per 1000 people, $50 for those in towns with 11-20 outlets per 1000 people, and $75 for those in towns with 21 or more outlets per 1000 people—a potential $31,605 in new revenue could be raised.[112]

Fines

Currently, all fines for civil, criminal, and administrative violations of Maine's liquor laws are deposited into the General Fund. Instead, this money could be channeled into grants or funds dedicated to substance abuse prevention, enforcement, and/or treatment programs. there is precedent for this process. Recently enacted by PL 2005, c. 223, money from tobacco administrative fines is currently split between DHHS (to help to defray the costs of administering tobacco licenses) and the Attorney General's Office (to support enforcement and responsible retailing programs)[113]. Additionally, fines from some traffic infractions are dedicated to the Highway Fund to help maintain Maine's transportation system.

In SFY 2006, the State of Maine ordered the collection of $4,450,935 in alcohol-related fines under Titles 12, 28-A, and 29-A, and as of August 11, 2006 had collected $3,672,098 (82.5 percent).[114] These titles consider the fines imposed on OUI offenders (traffic criminal, ATV, snowmobile, watercraft, and hunting) as well on those furnishing to minors, minors in possession of alcohol, and those convicted of transport and license violations. While a number of factors can make it difficult to predict how much revenue will be collected in fines in the coming years – such as fluctuations in criminal activity rates and number of convictions, and the nature of the defendants' payment plans – the Administrative Office of the Courts estimate that a total of $2,911,213 in fines would be ordered and governed under any proposed changes in SFY 2007, and that by the end of the fiscal year $1,930,182 (66.3 percent) would have been paid to the State.[115] These figures represent conservative estimates that assume pre-existing fines not yet

[112] See Appendix F for town-level ratios of alcohol outlets per 1000 people.
[113] To be enacted as 22 M.R.S.A. §1558, sub-§ 8
[114] In addition to this fine revenue are various surcharges and fees that are not included in this analysis in the interest of clarity.
[115] Maine Judicial Branch, 2006.

paid in full would not be governed by any new revenue distribution plans – it is thus safe to assume this figure would increase in the fiscal years following 2007.

If 50 percent of the revenue collected from fines alone (excluding related fees and surcharges) were somehow dedicated to substance abuse this would generate at least $1,455,606 from all fines ordered in SFY 2007, reaping at least $965,091 of that potential revenue within the fiscal year itself. Other percentages of alcohol-related fine revenue could be implemented to generate more or less revenue dedicated to substance abuse.

A second way of dedicating this revenue would be to add stipulations to each fine outlined in Titles 12, 28-A, and 29-A dedicating a certain portion of that particular fine to a substance abuse-related fund or department, or impose an additional fee to that fine payable to a related fund or department. While the potential revenue from this model is much more difficult to accurately predict, it has proven itself effective in other states. For example, in addition to mandatory fines, New Jersey adds a $100 fee to all DUI convictions payable to their Alcohol Education and Rehabilitation Fund.[116]

Increasing Liquor Taxes

The most common way that price increases are implemented as a prevention strategy are through state control of alcoholic sales or pricing or increases in alcohol taxation. Maine could increase the prices set by the Bureau of Alcohol Beverages and Lottery Operations, however this would not affect other types of alcohol as they are not under state control. The most consistent way to implement this strategy, therefore, would be to raise the premium tax on alcohol as this tax is levied on all types of alcohol beverages.

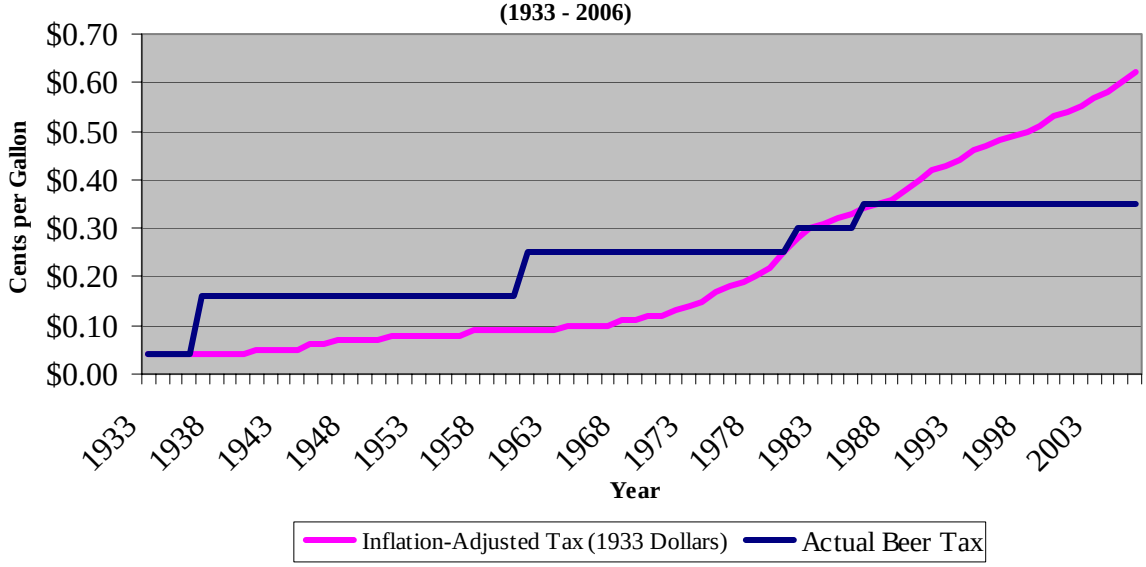
The Center for Science in the Public Interest has referred to raising alcohol taxes as "an efficient social policy with multiple benefits."[117] Maine has not raised its alcohol taxes for twenty years, when in 1986, the premium tax was raised by a nickel per gallon. Since alcohol excise and premium taxes are waged based on gallonage, and not on price like most product taxes are, these taxes have been significantly eroded by inflation over the last twenty years. Information on tax

[116] New Jersey Motor Vehicle Commission, 2006.
[117] CSPI, 2003, 12.

rates of wine and spirits over time has proven inaccessible, however records of beer taxes illustrate how since 1987 actual taxes have fallen far below where they would be had inflation continued to be considered.

Thus, to have kept pace with inflation since 1986 as most taxes do, our current beer taxes would need to be closer to 62 cents per gallon as opposed to the current rate of 35 cents per gallon (Figure 8.5). Inflation has similarly eroded the value of both wine and spirits taxes. This deflation of the alcohol tax has caused the real price of alcohol to erode over time. Considering that lower prices encourage greater use and abuse, policies that allow alcohol taxes to be continually eroded by inflation are detrimental to the public health.

Figure 8.5
Comparison of Actual Maine State Beer Taxes and Appropriate Tax Rate if Adjusted for Inflation (1933 - 2006)



Source: Beer Institute, 2006b; BLS, 2006a

Taxes currently levied on alcohol are based on gallonage and comprise a few cents per drink (Table 8.1). Assuming that the annual cost of alcohol abuse to the state has not changed since 2000 when it was estimated at $431.9 million[118], every alcoholic drink sold in 2005 cost the

[118] OSA, 2004b

people of Maine 73 cents.[119] Compare these figures to the pennies currently collected per drink by the State in excise and premium taxes (Table 8.1).

Table 8.1
State Alcohol Taxes by Gallon and by Drink

Type	*Tax per Gallon*	*Tax per Drink*[120]
Beer & Hard Cider	$0.35	3.28 cents
Flavored Malt	$1.24[121]	11.63 cents
Table Wine	$0.60	2.34 cents
Sparkling & Fortified Wine	$1.24	4.84 cents
Distilled Spirits[122]	$1.25	0.98 cents

Sources: 28-A M.R.S.A §1651, §1652, and §1703

Currently, premium taxes are dedicated to prevention and treatment funding in an indirect way—an amount equivalent to premium taxes collected must be dedicated to the OSA budget, which in turn is dedicated to prevention and treatment.[123] Many states choose to use alcohol tax to directly fund prevention and treatment programs such as was previously done with Maine's Alcoholism Prevention, Education, Treatment and Research Fund. Utah considered raising their beer tax in 1997, earmarking the profits from such an increase to go towards enforcing anti-abuse laws as well as prevention and treatment programs. "The philosophy behind the bill is the people who [generate the] need [for] prevention and treatment should pay for it," said Representative Nora Stevens.[124] They estimated a tax increase of $5.00 on each 31-gallon barrel would raise an extra $4.2 million a year, and would require a ten-cent increase on the price of a six-pack.[125] Many other states have established accounts to provide financial support to prevention and treatment services. For example, Arizona has the Drug and Alcohol Treatment Fund, New Jersey has the Alcohol Education, Rehabilitation, and Enforcement Fund, and Oregon has the Mental Health,

[119] $431.9 million divided by 595,192,863, the total alcohol drinks sold in 2005. (See Appendix B.2).
[120] A drink is defined as 12 ounces of beer, hard cider, and flavored malts, 5 ounces of wine, and 1 ounce of 100 proof liquor. See Appendix B.1
[121] Excludes the $0.30/gallon "Certificate of Approval" product tax on flavored malts.
[122] There is currently no excise tax on distilled spirits, only premium tax.
[123] Through 1989, premium taxes were dedicated to the Alcoholism Prevention, Education, Treatment and Research Fund. The following year OSA was established. The premium monies at this point became "undedicated" and began to be deposited into the general fund. However, a provision was added requiring that funding for OSA not be less than the amounts generated by the premium tax (28-A M.R.S.A. §1702).
[124] "Utah considers," 1997.
[125] "Utah considers," 1997.

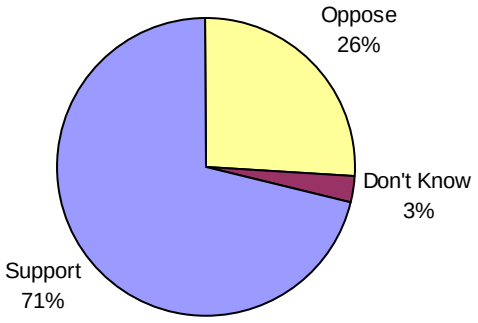
Alcoholism, and Drug Services Account.[126] Channeling extra tax revenue towards such a fund has potential, as it combines the drop in consumption that often accompanies tax increases with an increase in money to enhance the state's existing substance abuse prevention and treatment framework.

Support

Despite the general unpopularity of tax increases, raising alcohol taxes invariably have majority support. A May 1993 Gallup Poll discovered that among a list of possible tax increases, alcohol tax increases were the most popular, garnering 75% approval.[127] Additionally, a 1998 survey, by the Robert Johnson Wood Foundation discovered that "82 percent [were] willing to pay an extra five cents per drink to fund prevention and treatment programs."[128] Local support has also been demonstrated: a June 2006 survey illustrated that seven in ten Maine residents supported an increase in the alcohol tax if it were used to fund substance abuse prevention, enforcement, and/or treatment programs (Figure 8.6).

Figure 8.6
Maine Support for a Dedicated Alcohol Tax Increase

"Would you support an increase in the alcohol tax that would be used to fund substance abuse prevention, enforcement and/or treatment programs?



Source: June 2006 Critical Insights on Maine Tracking Survey, Portland, ME

Even those normally against taxes express support for the alcohol tax. For example, economist N. Gregory Mankiw, in a recent opinion piece printed in the Wall Street Journal, supports a raise on alcohol and cigarette taxes despite his vehement opposition to most other tax hikes. Such taxes, he asserts, "aim to protect people from themselves," he notes, citing that "to the extent that people have problems with self-control, [alcohol and tobacco] taxes can be welfare-enhancing . . . Maybe we

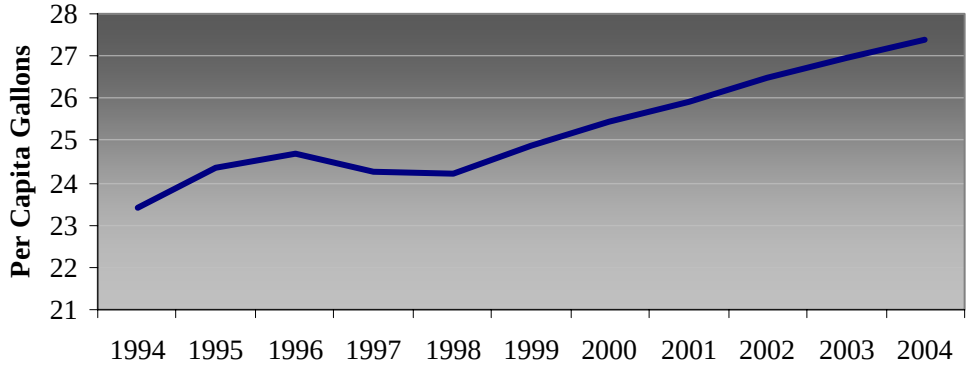
[126] ESAP, 2003; Other states currently dedicating tax revenue to prevention and treatment are Idaho, Kansas, Mississippi, Montana, Nevada, and Tennessee.
[127] CSPI, 1996b.
[128] Schultz, 1998, 82.

should consider higher taxes on smoking, drinking, gambling, and other activities about which people lack self-control."[129]

Opposition

The alcohol industry has a long history of opposing alcohol tax hikes. Often, industry websites frame their opposition to alcohol taxes by arguing that they penalize responsible drinkers and do nothing to deter pathological drinkers. However, given the marginal increase that would be made (a few cents per drink), the impact would be felt primarily by bingers and frequent drinkers. Nationally, 76 percent of the alcohol is consumed by 23 percent of the population, the remaining 77 percent of the population being only light drinkers or non-drinkers. Almost half (46 percent) of the population report being non-drinkers.[130] An increased tax would have no impact on this 46 percent and would only minimally impact responsible drinkers. If taxes for beer were adjusted for inflation, for example, a moderate male beer drinker (often defined as 14 drinks per week) would pay an extra $18.44 per year in alcohol taxes. A heavy drinker or frequent binge drinker, however, would end up paying a greater proportion of the tax. Under this framework, a tax on alcohol that is dedicated to prevention and treatment can be seen as a "user fee" or "insurance premium" in which the burden of funding such programs is shifted towards those creating the most social and economic costs to the state from alcohol use and abuse.

Figure 8.7
Trend in Maine's Per Capita Alcohol Consumption
1994-2004



Source: The Beer Institute, 2006b

[129] Mankiw, 2006.
[130] OJJDP, 2002.

In SFY 2005, Maine collected a total of $14,278,662 in alcohol excise and premium taxes, generated from 35,768,188 total gallons of alcohol consumed. Given, the steady increase in Maine's per capita alcohol consumption over the past decade (Figure 8.7), the state stands to generate a significant amount of extra revenue from an increased alcohol tax if this trend continues. The state would also benefit economically if the increased tax helped to reduce alcohol consumption rates, as it would avoid the costly effects of increased alcohol abuse. As illustrated in Table 8.2 below, it is quite possible for both benefits to happen simultaneously.

Using a formula provided by the Center for Science in the Public Interest (Appendix A.1), one can estimate both the increase in revenue and the decrease in consumption resulting from a specific increase in alcohol taxes. This formula accounts for the complicated translation from wholesale taxpayer to retail consumer, positing a 7.5% markup on price, and uses the Leung and Phelps price elasticity rates (see page 18). To illustrate how a relatively small increase can have a considerable impact on both figures, the following table (Table 8.2) looks at taxes on a "per drink" level and demonstrates the impact of an increase of between 1 and 10 cents per drink.[131]

[131] Current tax rates represent excise and premium taxes combined. Low-alcohol sprits (a k.a. flavored malts) have an additional "Certificate of Approval" product tax of $0.30. Liquor is not included in this table as the formula is only appropriate for alcohol sold under a "license state" system. While all malt beverages and wine are sold as such, distilled spirits are sold under a control system operated by the Bureau of Alcoholic Beverages and Lottery Operations (BABLO).

Table 8.2
Estimated Social and Economic Impact of Five Possible Alcohol Tax Increases

Premium Tax Increase[132]	Product	Current Tax Rate (per gallon)	New Tax Rate (per gallon)	Projected Revenue Increase	Projected Revenue	Consumption Decrease (gallons)	Percent Consumption Decrease[133]
Penny Per Drink	Beer	.35	.46	**$3,229,083**	$13,653,819	-101,204	**-0.34%**
	Low-Alcohol Spirits	1.24	1.35	**$100,984**	$1,288,887	-3255	**-0.34%**
	Table Wine	.60	.86	**$871,601**	$2,924,169	-33,252	**-0.97%**
	Spark. Wine	1.24	1.50	**$58,868**	$356,258	-2,323	**-0.97%**
	Totals			**$4,260,536**	**$18,223,133**	**-140,033**	**-0.41%**
Adjust for Inflation[134]	Beer	.35	.62	**$7,886,970**	$18,311,706	-248,409	**-0.83%**
	Low-Alcohol Spirits	1.24	1.84	**$542,121**	$1,730,025	-17,756	**-1.85%**
	Table Wine	.60	1.66	**$3,421,919**	$5,474,486	-135,565	**-3.95%**
	Spark. Wine	1.24	1.40	**$36,368**	$333,758	-1,429	**-0.6%**
	Totals			**$11,887,378**	**$25,849,975**	**-403,160**	**-1.17%**
Nickel per Drink	Beer	.35	.88	**$15,355,569**	$25,780,304	-487,618	**-1.64%**
	Low-alcohol Spirits	1.24	1.77	**$479,971**	$1,667,875	-15,684	**-1.64%**
	Table Wine	.60	1.88	**$4,094,557**	$6,147,125	-163,702	**-4.77%**
	Spark. Wine	1.24	2.52	**$278,161**	$575,551	-11,435	**-4.77%**
	Totals			**$20,208,258**	**$34,170,855**	**-678,438**	**-1.97%**
Dime per Drink	Beer	.35	1.42	**$30,469,819**	$40,894,555	-984,436	**-3.31%**
	Low-alcohol spirits	1.24	2.31	**$951,901**	$2,139,804	-31,665	**-3.31%**
	Table Wine	.60	3.16	**$7,762,537**	$9,815,105	-327,403	**-9.54%**
	Spark. Wine	1.24	3.80	**$527,053**	$824,443	-22,869	**-9.54%**
	Totals			**$39,711,310**	**$53,673,907**	**-1,366,373**	**-3.97%**

Revenue and gallon amounts are estimates only. Many variables could affect the actual impact. All figures rounded to the nearest dollar.

See Appendices A.1 through D for figures, formulas, and methodology used in the creation of this table.

Sources: DPS, 2005; CSPI, 2006; MAPP, 2006.

The State, therefore, stands to gain substantial revenue from even relatively small increases in alcohol taxes. While support for the "dime per drink" option has not been gauged, all other options fall within an acceptable range according to a national survey indicating a willingness to

[132] The following proposals are in addition to the existing tax; that is, increasing beer taxes by a nickel per drink would mean raising the tax from 3.28 cents per drink to 8.28 cents per drink.
[133] "Total" consumption decrease is determined by subtracting the projected consumption from the current consumption (34,414,683 gallons), and dividing the product by the current consumption.
[134] BLS, 2006; (See Appendix A.2 for methodology)

pay up to five cents more per drink in taxes.[135] Despite the anticipated decrease in consumption, tax revenue increases under all scenarios.

As discussed in Chapter 3, decreased alcohol consumption rates have been linked to decreases in alcohol-related problems such as liver cirrhosis, vehicle crashes, high drop-out rates, and underage drinking and other criminal acts. Thus, in addition to increasing revenue, an increase in the state alcohol tax has the potential to reduce the impact of many of the costly alcohol-related problems outlined at the beginning of this chapter, lessening the need for state expenditures in those areas. While such a savings would be difficult to accurately predict, the two are logically correlated.

Distilled spirits in the state of Maine are governed under a different taxation system. The selling prices of all liquors are controlled by the Bureau of Alcoholic Beverages and Lottery Operations (BABLO), and are set to produce a state liquor "tax" sufficient to fund the liquor-related expenses of that Bureau.[136] In addition to this state-regulated mark-up, a premium tax of $1.25 is imposed on every proof gallon sold in the state. It is not possible to use the CSPI calculator to determine the effects of a liquor tax increase on consumption and revenue, as this calculator was designed for alcohol sales not regulated by the state. In addition to this, price elasticity equations require one to know the average price per gallon, and given the wide range of both prices and proof values (and the need to convert gallons to proof gallons in such an equation), we have chosen to ignore the role of elasticity for spirits and instead provide a more simplistic straight line estimate of revenue increase due to tax increase. Please keep in mind that the actual revenue increase will be slightly less than that estimated in Table 8.3 due to the possible decrease in spirits consumption that may result from an increase in price.

[135] Schultz, 1998.
[136] 28-A M.R.S.A. §1651

Table 8.3
Estimated Revenue Generated from Five Possible Liquor Premium Tax Increases

Premium Tax Increase Proposal	Current Tax Rate (per gallon)	New Tax Rate (per gallon)	Projected Revenue Increase	Projected Total Revenue
Penny Per Drink	$1.25	$2.53	**$1,732,487**	**$3,424,368**
Adjust for Inflation[137]	$1.25	$1.38	**$175,956**	**$1,867,837**
Nickel per Drink	$1.25	$7.65	**$8,662,432**	**$10,354,313**
Dime per Drink	$1.25	$14.05	**$17,324,864**	**$19,016,745**

Figures calculated by assuming liquor sales remain comparable to those in 2005. In 2005, taxes were collected on 1,353,505 proof gallons of distilled spirits, generating $1,691,881 in premium tax revenue. All figures are rounded to the nearest dollar.

See Appendix A.1

Revenue-Sharing Agreement

Beginning in SFY 2004, the State of Maine initiated a contract with Maine Beverage. This contract leased Maine Beverage the rights to distribute distilled spirits in the State of Maine for ten years, subject to price regulation by BABLO mentioned above. These rights were sold in exchange for $125 million dollars combined with a profit-sharing agreement. Through this agreement, Maine Beverage is guaranteed a gross profit margin of 36.8% (the "Gross Profit Guaranty"), calculated on a calendar year. That is, if, after subtracting the cost of goods sold (which includes the cost of merchandise and the premium tax levied), Maine Beverages' profits are less than 36.8% of total sales, the State would have to pay them the difference. However, If Maine Beverage's profits exceeded 36.8% of total sales in a calendar year, 50 percent of the profit overage is deposited into the State General Fund (Table 8.4).

[137] BLS, 2006.

Table 8.4 Revenue-Sharing Agreement: Examples				
	If Yearly Sales Total…	**And ME Bev.'s Profit Is…**	**State Pays**	**State Receives**
Example 1	$90 million	$30 million (33.3%)	$3.12 million	
Example 2	$100 million	$40 million (40%)		$ 1.6 million

The State has already received the $125 million lease fee in two lump sum payments of $75 million (SFY 2004) and $50 million (SFY 2005). In SFY 2006, the revenue-sharing began, Maine Beverage depositing $2.5 million dollars in into the State General Fund. Dan Gwadosky, Director of BABLO, reports that the Revenue Forecasting Commission anticipates $3.5 million dollars to be returned to the General Fund from Maine Beverage in SFY 2007.[138]

The State-share of annual liquor revenue could potentially be used to fund substance abuse prevention and treatment. This could be calculated as a percentage of the share that would be channeled in the same ways as described for liquor licenses and alcohol taxes. For example, if it were stipulated that 25 percent of the revenue-share was dedicated towards prevention and treatment, that would generate an estimated $875,000 in SFY 2007.

The only concern with using money from the revenue-sharing agreement is that this is an unreliable funding source. It is theoretically possible that some years that State could receive no money from Maine Beverage, in fact possibly have to pay them. This unreliability would arguably only add to the current instability of substance abuse prevention and treatment funding. Additionally, as this agreement is in effect for a term of only ten years—set to end on June 30, 2014— any funding drawn from it represents a relatively short-term solution in comparison to the other options outlined above and below.

Partnerships with the Alcohol Industry

As mentioned in Chapter 5, while many criticisms have been voiced concerning alcohol industry funded prevention programs, they have made a substantial financial contribution to substance

[138] BABLO, 2006.

abuse prevention. As Orley and Logan argue, "partnership is the way forward in dealing with the issues concerning social aspects of alcohol."[139]

The key word is partnership. More often than not traditional prevention providers and the alcohol industry are disconnected, operating independently of one another. A way to overcome many of the criticisms of industry-funded programming would be to increase the involvement of experienced prevention and treatment practitioners in developing the programming. Many accuse industry prevention efforts of being ineffective, yet if the actual programming was designed by those experienced within the field and uninfluenced by potential industry profit motives, this would no longer be a problem. Such reasoning suggests that money currently spent by industry on their own programs would be better spent by funding non-affiliated, experienced prevention and treatment groups. Funds directed in this way would be much more cost-effective, as money would more likely be allocated towards evidence-based while also supporting the infrastructure of Maine's prevention system.

Additional public-private partnerships could be established other than those with the alcohol industry. Perhaps money could be sought from prescription medicine companies to help fund the new Prescription Monitoring Program, or the Drug Take-Back program in development.

Chapter 9: Conclusions

There are certain principles, generally agreed-upon, that characterize a best practice in both the prevention and treatment fields. The Substance Abuse and Mental Health Services Administration (SAMHSA) has summarized many of them well in their evidence-based practices criteria, currently under revision. While treatment is more individualized, certain principles and types of practices are still correlated with more effective results. OSA and the majority of prevention and treatment agencies are familiar with these principles.

[139] Orley & Logan, 2005, 51

The beer and spirits industry has a long history of involvement with substance abuse prevention, both funding external programs and creating their own. Industry-created programs more often than not focus on drinking and driving initiatives, usually incorporating brief responsibility messages into their existing advertising. Some companies go a step further, initiating more action-oriented programs such as hosting speakers and distributing information to retailers. However, there has been much criticism regarding the effectiveness of industry-funded programs, given their economic interest in underage and excessive drinkers.

Although currently Maine's prevention and treatment systems have generated some impressive results, both systems do not currently meet the needs of all Maine citizens. Both systems need a greater presence in the northern part of the state, and more work needs to be done to improve service to cultural subpopulations. Current treatment services are able to meet the needs of 17 percent of those in need of treatment, and although such a percentage is impossible to determine in prevention, one can see the need for expansion by looking at our high youth substance abuse rates. To provide a comprehensive prevention effort in the state of Maine would cost an additional $9,600,000 annually. To meet the treatment demand (defined as treating all people that would seek treatment, not all people that need treatment) of Maine's population would require $4,086,000 in additional annual funding. In order to fully meet the need for substance abuse prevention and treatment in Maine an additional $13,686,000 in annual funding would be necessary.

There are a number of different avenues the legislature could consider to raise additional funding for prevention and treatment, including changing the liquor license fee structure, raising alcohol taxes, creating partnerships with the alcohol industry, using money from the revenue-sharing agreement, and dedicating a portion of alcohol-related fines. These suggestions as stated could generate anywhere from $33,128 to $57 million more revenue annually, perhaps more if multiple revenue sources are utilized.

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APPENDICES

Appendix A.1
Calculating the Effect of a Price Increase on Consumption/Revenue

Formula for calculating the effect of tax increase on annual alcohol consumption:
$V_1 = (V_0)\ (1 + PE\ (^{PI}/_{CP}))$[140]

Where:
V_1 is the new volume consumed

V_0 is the current volume consumed

PE is the price elasticity chosen[141]

PI is the proposed price increase (assuming an average markup of 7.5%)

CP is the current price per gallon

Formula for calculating increase in revenue:
$RI = T(V_1) - R_0$

Where:
RI is the revenue increase

T is the new tax rate

V_1 is the new volume consumed

R_0 is the current revenue collected from taxes

Fixed Values Used in Equations:

Type of Alcohol	Current Volume Consumed	Current Price per Gallon	Current Revenue from Taxes
Beer	29,783,419 gallons	$10.44/gallon	$10,424,735.88
Low-Alcohol Sprits	957,987 gallons	$10.44/gallon	$1,187,903.88
Table Wine	3,433,449 gallons	$28.86/gallon	$2,052,567.64
Sparkling Wine	239,828 gallons	$28.86/gallon	$297,390.01
Liquor	1,353,505 gallons		$1,691,881.00
Totals	**35,768,188 gallons**		**$15,654,478.41**

Sources: BLS, 2006b, 2006c; MAPP, 2006; DPS, 2005; OFPR, 2006.

[140] CSPI, 2006.
[141] This study used Leung and Phelps conservative elasticity rate of -0.3 for beer, -1 for wine and -1.5 for spirits (Leung and Phelps, 1993).

Appendix A.2
Calculating Tax Values Adjusted to Inflation for 2006

Inflation figures calculated using the CPI inflation calculator and by entering initial tax rates and years as follows:

Type of Alcohol	Year first taxed	Initial Tax Rate	Scaled to Inflation for 2006
Beer	1933	$0.04/gallon	$0.62/gallon
Low-Alcohol Spirits	1991	$1.24/gallon	$1.84/gallon
Wine	1969	$0.30/gallon	$1.66/gallon
Sparkling Wine	1993	$1.00/gallon	$1.40/gallon
Distilled Spirits	1981	$0.625/gallon	$1.38/gallon

Sources: OFPR, 2006, BLS, 2006a.

Appendix B.1
Formulas for Determining Amount of Tax Levied per Drink

Beer, Low-Alcohol Spirits,, and Wines

$T_D = S(T_G/128)$

Where:

T_D is the tax per drink

T_G is the tax per gallon

S serving size in ounces[142]

Spirits

$T_D = S(T_G /(128 * .01p))$

Where:

T_D is the premium tax per drink

T_G is the premium tax per gallon

S is the serving size in ounces (standard=1 oz. < S < 1.5 oz.)

p is the proof value of the liquor (40% alcohol = 80 proof)

The formula for spirits is different because taxes are charged by the *proof gallon*, a term used to denote one gallon of 100 proof alcohol. A gallon of 80 proof alcohol, therefore, would only be equal to .8 proof gallons.

[142] Serving Sizes: Beer, Flavored Malts, and Hard Cider=12 oz., Wine=5 oz., and Spirits=1 oz. of 100 proof liquor.

Appendix B.2
Formula for Calculating the Social Cost of a Drink

$$\frac{AC}{(G_x(128))/S_x}$$

Where:

AC is the annual estimated cost of alcohol abuse[143]

G_x is the gallonage of alcohol X (e.g. beer, wine, etc.) sold in a year (Appendix A.1)

S is the serving size in ounces[144]

[143] See Chapter 8 for estimates. Fore greater detail, see OSA, 2004b.
[144] Serving Sizes: Beer, Flavored Malts, and Hard Cider=12 oz., Wine=5 oz., and Spirits=1 oz. of 100 proof liquor.

Appendix C
Detailed Current Alcohol Tax Rates

Excise Taxes	
Malt liquor manufacturer or importing wholesale licensee	$0.25/gallon
Low-alcohol sprits and fortified wine manufacturer or importing wholesale licensee	$1.00/gallon
Wine and hard cider manufacturer or importing wholesale licensee	(non-sparkling) $0.30/gallon (sparkling) $1.00/gallon (hard cider) $0.25/gallon

Source: 28-A M.R.S.A. §1652

Premium Taxes	
Malt beverages and hard cider sold	$0.10/gallon
Non-sparkling wine sold	$0.30/gallon
Sparkling and fortified wine and low-alcohol spirits sold	$0.24/gallon
Spirits sold	$1.25/proof gallon

Source: 28-A M.R.S.A. §1703

Certificate of Approval Product Tax	
Low-alcohol spirits	$0.30/gallon

Source: 28-A M.R.S.A. §1365

Appendix D

Average Wait-Time for Admission into Treatment by Level of Care, 2004-2006.

Type of Treatment	Average Wait in Days[145]
Clients with Co-Occurring Mental Illnesses	
(CMI) ADOLESCENT INTENSIVE OUTPATIENT	3.57
(CMI) ADOLESCENT OUTPATIENT	4.76
(CMI) ADOLESCENT RES. REHAB. TRANS.	29.45
(CMI) CONSUMER RUN RESIDENCE	13.41
(CMI) DETOXIFICATION	0.00
(CMI) EVALUATION	8.25
(CMI) EXTENDED CARE	25.06
(CMI) EXTENDED SHELTER	4.64
(CMI) HALFWAY HOUSE	35.06
(CMI) HOSPITAL (OTHER THAN DETOX)	0.00
(CMI) INTENSIVE OUTPATIENT	2.13
(CMI) METHADONE	22.81
(CMI) NON-INTENSIVE OUTPATIENT	7.36
(CMI) SHORT-TERM RESIDENTIAL	24.08
Clients Without Co-Occurring Mental Illnesses	
ADOLESCENT INTENSIVE OUTPATIENT	1.44
ADOLESCENT OUTPATIENT	4.77
ADOLESCENT RES. REHAB. TRANSITIONAL	20.96
CASE MANAGEMENT	0.43
DETOXIFICATION	3.22
EVALUATION	7.24
EXTENDED CARE	12.08
EXTENDED SHELTER	6.61
HALFWAY HOUSE	22.33
HOSPITAL (OTHER THAN DETOXIFICATION)	0.63
INTENSIVE OUTPATIENT	2.72
METHADONE	19.08
NON-INTENSIVE OUTPATIENT	7.78
SHORT-TERM RESIDENTIAL	58.33
OVERALL AVERAGE WAIT-TIME	**9.25**

Source: OSA, 2006d.

[145] Numbers rounded to nearest tenth place.

Appendix E.1
Current License Fees and 2005 Fee Revenues by License Level/Type

Annual License Fee	License Type/Class	# in ME	Revenue 2005 (Calendar Year)
$10	B.Y.O.B. FUNCTIONS	102	$1,020
$10	SPECIAL CATERING PERMITS	965	$9,650
$50	INCORPORATED CIVIC ORGANIZATION	550	$27,500
$50	RESALE AGENCY	153	$7,650
$50	SMALL MAINE BREWER	21	$1,050
$50	MAINE FARM WINERY	9	$450
$50	BOTTLE CLUBS	40	$2,000
$50	SALESMAN LICENSE	250	$12,500
$100	AUXILIARY LICENSE	10	$1,000
$100	CERT. OF APPROVAL, 120 GAL. MAX	19	$1,900
$200	CLASS VI - OFF PREM. RETAILER - MALT	1963	$392,600
$200	CLASS VII - OFF PREM. RETAILER - WINE	1723	$344,600
$220	CLASS III RESTAURANT (WINE ONLY)	324	$71,280
$220	CLASS IV RESTAURANT (MALT ONLY)	439	$96,580
$300	AGENCY	289	$86,700
$495	CLASS V (CLUB-NO CATERING)	68	$33,660
$550	CLASS II RESTAURANT (SPIRITS ONLY)	5	$2,750
$600	CERTIFICATE OF APPROVAL - SPIRITUOUS	3	$1,800
$600	WHOLESALE - WINE	12	$7,200
$600	CERTIFICATE OF APPROVAL - MALT	55	$33,000
$600	CERTIFICATE OF APPROVAL - WINE	195	$117,000
$600	WHOLESALE - MALT	9	$5,400
$900	CLASS A RESTAURANT	932	$838,800
$1000	DISTILLERS & BREWERS	14	$14,000
$1000	RECTIFIERS & BOTTLERS	3	$3,000
$1100	CLASS I-A HOTEL	120	$132,000
$1500	CLASS XI RESTAURANT/LOUNGE	247	$370,500
$2200	CLASS X LOUNGE	222	$488,400
	Totals:	**8742**	**$3,103,990.00**

Source: DPS, 2006.

Appendix E.2
Effect of "Scenario C" on Individual Alcohol License Levels/Types

Current Fee	License Type/Class	New Fee if Increased by….					
		1%	5%	10%	15%	20%	25%
$10	B.Y.O.B. FUNCTIONS	$11	$11	$11	$12	$12	$13
$10	SPECIAL CATERING PERMITS	$11	$11	$11	$12	$12	$13
$50	INCORPORATED CIVIC ORGANIZATION	$51	$53	$55	$58	$60	$63
$50	RESALE AGENCY	$51	$53	$55	$58	$60	$63
$50	SMALL MAINE BREWER	$51	$53	$55	$58	$60	$63
$50	MAINE FARM WINERY	$51	$53	$55	$58	$60	$63
$50	BOTTLE CLUBS	$51	$53	$55	$58	$60	$63
$50	SALESMAN LICENSE	$51	$53	$55	$58	$60	$63
$100	AUXILIARY LICENSE	$101	$105	$110	$115	$120	$125
$100	CERT. OF APPROVAL, 120 GAL. MAX	$101	$105	$110	$115	$120	$125
$200	CLASS VI - OFF PREM. RETAILER - MALT	$202	$210	$220	$230	$240	$250
$200	CLASS VII - OFF PREM. RETAILER - WINE	$202	$210	$220	$230	$240	$250
$220	CLASS III RESTAURANT (WINE ONLY)	$223	$231	$242	$253	$264	$275
$220	CLASS IV RESTAURANT (MALT ONLY)	$223	$231	$242	$253	$264	$275
$300	AGENCY	$303	$315	$330	$345	$360	$375
$495	CLASS V (CLUB-NO CATERING)	$500	$520	$545	$570	$594	$619
$550	CLASS II RESTAURANT (SPIRITS ONLY)	$556	$578	$605	$633	$660	$688
$600	CERTIFICATE OF APPROVAL - SPIRITS	$606	$630	$660	$690	$720	$750
$600	WHOLESALE - WINE	$606	$630	$660	$690	$720	$750
$600	CERTIFICATE OF APPROVAL - MALT	$606	$630	$660	$690	$720	$750
$600	CERTIFICATE OF APPROVAL - WINE	$606	$630	$660	$690	$720	$750
$600	WHOLESALE - MALT	$606	$630	$660	$690	$720	$750
$900	CLASS A RESTAURANT	$909	$945	$990	$1,035	$1,080	$1,125
$1,000	DISTILLERS & BREWERS	$1,010	$1,050	$1,100	$1,150	$1,200	$1,250
$1,000	RECTIFIERS & BOTTLERS	$1,010	$1,050	$1,100	$1,150	$1,200	$1,250
$1,100	CLASS I-A HOTEL	$1,111	$1,155	$1,210	$1,265	$1,320	$1,375
$1,500	CLASS XI RESTAURANT/LOUNGE	$1,515	$1,575	$1,650	$1,725	$1,800	$1,875
$2,200	CLASS X LOUNGE	$2,222	$2,310	$2,420	$2,530	$2,640	$2,750

Source: DPS, 2006.

Appendix E.3
Effect of "Scenario D" on Individual License Levels/Types

Current Fee	License Type/Class	New Fee if Increased by …. and Rounded Up to Tens Place					
		1%	5%	10%	15%	20%	25%
$10	B.Y.O.B. FUNCTIONS	$20	$20	$20	$20	$20	$20
$10	SPECIAL CATERING PERMITS	$20	$20	$20	$20	$20	$20
$50	INCORPORATED CIVIC ORGANIZATION	$60	$60	$60	$60	$60	$70
$50	RESALE AGENCY	$60	$60	$60	$60	$60	$70
$50	SMALL MAINE BREWER	$60	$60	$60	$60	$60	$70
$50	MAINE FARM WINERY	$60	$60	$60	$60	$60	$70
$50	BOTTLE CLUBS	$60	$60	$60	$60	$60	$70
$50	SALESMAN LICENSE	$60	$60	$60	$60	$60	$70
$100	AUXILIARY LICENSE	$110	$110	$110	$120	$120	$130
$100	CERT. OF APPROVAL, 120 GAL. MAX	$110	$110	$110	$120	$120	$130
$200	CLASS VI - OFF PREM. RETAILER - MALT	$210	$210	$220	$230	$240	$250
$200	CLASS VII - OFF PREM. RETAILER - WINE	$210	$210	$220	$230	$240	$250
$220	CLASS III RESTAURANT (WINE ONLY)	$230	$240	$250	$260	$270	$280
$220	CLASS IV RESTAURANT (MALT ONLY)	$230	$240	$250	$260	$270	$280
$300	AGENCY	$310	$320	$330	$350	$360	$380
$495	CLASS V (CLUB-NO CATERING)	$500	$520	$550	$570	$600	$620
$550	CLASS II RESTAURANT (SPIRITS ONLY)	$560	$580	$610	$640	$660	$690
$600	CERTIFICATE OF APPROVAL - SPIRITS	$610	$630	$660	$690	$720	$750
$600	WHOLESALE - WINE	$610	$630	$660	$690	$720	$750
$600	CERTIFICATE OF APPROVAL - MALT	$610	$630	$660	$690	$720	$750
$600	CERTIFICATE OF APPROVAL - WINE	$610	$630	$660	$690	$720	$750
$600	WHOLESALE - MALT	$610	$630	$660	$690	$720	$750
$900	CLASS A RESTAURANT	$910	$950	$990	$1,040	$1,080	$1,130
$1,000	DISTILLERS & BREWERS	$1,010	$1,050	$1,100	$1,150	$1,200	$1,250
$1,000	RECTIFIERS & BOTTLERS	$1,010	$1,050	$1,100	$1,150	$1,200	$1,250
$1,100	CLASS I-A HOTEL	$1,120	$1,160	$1,210	$1,270	$1,320	$1,380
$1,500	CLASS XI RESTAURANT/LOUNGE	$1,520	$1,580	$1,650	$1,730	$1,800	$1,880
$2,200	CLASS X LOUNGE	$2,230	$2,310	$2,420	$2,530	$2,640	$2,750

Source: DPS, 2006.

Appendix F

Alcohol Outlet Density and Population Ratio by Town

Town	Outlet Count	Square Mileage	density (outlets/sq. mi.)	Ratio (outlets/1000 ppl)	Town	Outlet Count	Square Mileage	density (outlets/sq. mi.)	Ratio (outlets/1000 ppl)
Abbot	2	36	0.06	3.2	Canton	3	30	0.10	2.7
Acton	5	41	0.12	2.3	Cape Elizabeth	8	15	0.53	0.9
Albion	2	39	0.05	1	Caribou	24	80	0.30	2.9
Alexander	2	46	0.04	3.9	Carmel	3	37	0.08	1.2
Alfred	3	28	0.11	1.2	Carrabassett Valley	16	78	0.21	40.1
Allagash	2	131	0.02	7.2	Carthage	1	33	0.03	1.9
Alna	1	21	0.05	1.5	Casco	9	38	0.24	2.6
Alton	1	43	0.02	1.2	Castine	11	8	1.38	8.2
Amherst	1	40	0.03	4.3	Caswell	2	42	0.05	6.1
Andover	2	57	0.04	2.3	Chelsea	4	20	0.20	1.6
Anson	4	48	0.08	1.5	Cherryfield	2	45	0.04	1.7
Appleton	1	33	0.03	0.8	Chesterville	1	38	0.03	0.9
Arundel	7	24	0.29	2	China	7	57	0.12	1.7
Ashland	8	81	0.10	5.4	Clifton	1	36	0.03	1.3
Athens	2	44	0.05	2.4	Clinton	4	45	0.09	1.2
Auburn	72	66	1.09	3.1	Columbia	3	37	0.08	6.5
Augusta	70	58	1.21	3.8	Columbia Falls	1	25	0.04	1.7
Avon	3	42	0.07	6	Cooper	1	33	0.03	6.9
Baileyville	7	42	0.17	4.2	Corinna	3	39	0.08	1.4
Baldwin	2	36	0.06	1.6	Cornish	9	22	0.41	7.1
Bangor	108	34	3.18	3.4	Cranberry Isles	3	3	1.00	23.4
Bar Harbor	75	43	1.74	15.6	Crawford	1	38	0.03	9.3
Bath	28	9	3.11	3	Cumberland	9	26	0.35	1.3
Belfast	35	34	1.03	5.5	Cutler	1	47	0.02	1.6
Belgrade	6	58	0.10	2	Damariscotta	18	14	1.29	8.8
Belmont	2	14	0.14	2.4	Danforth	2	60	0.03	3.2
Benton	2	29	0.07	0.8	Dayton	1	18	0.06	0.6
Berwick	2	38	0.05	0.3	Dedham	1	44	0.02	0.7
Bethel	26	66	0.39	10.8	Deer Isle	6	30	0.20	3.2
Biddeford	54	30	1.80	2.6	Denmark	1	50	0.02	1
Bingham	10	35	0.29	10.1	Detroit	1	20	0.05	1.2
Blue Hill	11	64	0.17	4.6	Dexter	12	37	0.32	3.1
Boothbay	8	22	0.36	2.7	Dixfield	4	42	0.10	1.6
Boothbay Harbor	45	6	7.50	19.3	Dixmont	3	36	0.08	2.8
Bowdoin	1	44	0.02	0.4	Dover-Foxcroft	15	71	0.21	3.6
Bowdoinham	2	34	0.06	0.8	Dresden	2	30	0.07	1.2
Bowerbank	1	47	0.02	8.1	Durham	1	39	0.03	0.3
Bradford	1	41	0.02	0.8	Eagle Lake	5	39	0.13	6.1
Bradley	1	51	0.02	0.8	East Machias	3	39	0.08	2.3
Brewer	40	15	2.67	4.5	East Millinocket	6	8	0.75	3.3
Bridgewater	2	39	0.05	3.3	Eastbrook	1	38	0.03	2.7
Bridgton	21	67	0.31	4.3	Easton	2	39	0.05	1.6
Bristol	10	36	0.28	3.8	Eastport	13	4	3.25	7.9
Brooklin	4	18	0.22	4.8	Eddington	4	26	0.15	1.9
Brooks	2	25	0.08	2	Edgecomb	1	18	0.06	0.9
Brooksville	3	33	0.09	3.3	Eliot	6	20	0.30	1
Brownfield	1	45	0.02	0.8	Ellsworth	33	93	0.35	5.1
Brownville	5	45	0.11	4	Enfield	4	34	0.12	2.5
Brunswick	66	47	1.40	3.1	Etna	1	25	0.04	1
Buckfield	4	38	0.11	2.3	Eustis	8	41	0.20	11.7
Bucksport	12	54	0.22	2.4	Fairfield	16	55	0.29	2.4
Burlington	1	56	0.02	2.8	Falmouth	20	30	0.67	1.9
Burnham	2	41	0.05	1.8	Farmingdale	2	11	0.18	0.7
Buxton	12	41	0.29	1.6	Farmington	31	56	0.55	4.2
Calais	26	36	0.72	7.5	Fayette	1	31	0.03	1

Town	Outlet Count	Square Mileage	density (outlets/sq. mi.)	Ratio (outlets/1000 ppl)
Cambridge	1	19	0.05	2
Camden	37	19	1.95	7
Franklin	2	38	0.05	1.5
Freedom	1	22	0.05	1.6
Freeport	30	35	0.86	3.8
Frenchville	3	29	0.10	2.4
Fryeburg	13	66	0.20	4.2
Gardiner	25	16	1.56	4
Garland	1	38	0.03	1
Georgetown	5	19	0.26	4.9
Glenburn	3	29	0.10	0.8
Gorham	20	51	0.39	1.4
Gouldsboro	6	48	0.13	3.1
Grand Isle	3	35	0.09	5.8
Grand Lake	2	48	0.04	13.3
Gray	15	46	0.33	2.2
Greenbush	3	47	0.06	2.1
Greene	4	35	0.11	1
Greenville	22	46	0.48	13.6
Greenwood	3	43	0.07	3.7
Guilford	10	36	0.28	6.5
Hallowell	11	6	1.83	4.5
Hampden	14	38	0.37	2.2
Hancock	8	30	0.27	3.7
Hanover	1	8	0.13	4
Harmony	2	40	0.05	2.1
Harpswell	9	24	0.38	1.7
Harrington	1	21	0.05	1.1
Harrison	4	34	0.12	1.7
Hartland	5	43	0.12	2.8
Hebron	1	23	0.04	0.9
Hermon	5	37	0.14	1.1
Highland Plt	1	42	0.02	19.2
Hiram	1	39	0.03	0.7
Hodgdon	2	40	0.05	1.6
Holden	5	32	0.16	1.8
Hollis	5	33	0.15	1.2
Hope	2	24	0.08	1.5
Houlton	19	37	0.51	2.9
Howland	5	36	0.14	3.7
Hudson	1	40	0.03	0.7
Industry	1	31	0.03	1.3
Island Falls	8	41	0.20	10.1
Isle au Haut	1	13	0.08	12.7
Islesboro	5	14	0.36	8.3
Jackman	12	42	0.29	16.7
Jay	11	49	0.22	2.2
Jefferson	2	59	0.03	0.8
Jonesboro	3	37	0.08	5.1
Jonesport	3	29	0.10	2.1
Kenduskeag	4	17	0.24	3.4
Kennebunk	27	35	0.77	2.6
Kennebunkport	24	21	1.14	6.5
Kingfield	9	43	0.21	8.2
Kingman Twp	1	25	0.04	4.7
Kittery	23	18	1.28	2.4
Knox	1	29	0.03	1.3
Lagrange	2	49	0.04	2.7
Lamoine	1	18	0.06	0.7
Lebanon	2	56	0.04	0.4
Lee	1	40	0.03	1.2
Leeds	4	43	0.09	2
Fort Fairfield	11	78	0.14	3.1
Fort Kent	17	55	0.31	4
Liberty	2	28	0.07	2.2
Limerick	6	28	0.21	2.7
Limestone	4	41	0.10	1.7
Limington	3	43	0.07	0.9
Lincoln	19	76	0.25	3.6
Lincolnville	10	39	0.26	4.9
Lisbon	18	24	0.75	2
Litchfield	4	40	0.10	1.3
Livermore	6	39	0.15	2.8
Livermore Falls	9	20	0.45	2.8
Long Island	3	1	3.00	14.9
Lovell	10	48	0.21	10.3
Lubec	12	33	0.36	7.3
Lyman	5	40	0.13	1.3
Machias	12	14	0.86	5.1
Madawaska	21	56	0.38	4.6
Madison	13	55	0.24	2.9
Magalloway Plt	1	54	0.02	27
Manchester	6	23	0.26	2.4
Mapleton	1	34	0.03	0.5
Mars Hill	4	35	0.11	2.7
Masardis	1	40	0.03	3.9
Mattawamkeag	2	38	0.05	2.4
Mechanic Falls	6	11	0.55	1.9
Medway	8	43	0.19	5.4
Mercer	2	27	0.07	3.1
Mexico	10	24	0.42	3.4
Milbridge	5	24	0.21	3.9
Milford	2	46	0.04	0.7
Millinocket	32	18	1.78	6.2
Milo	9	34	0.26	3.8
Minot	2	30	0.07	0.9
Monhegan Island Plt	4	1	4.00	53.3
Monmouth	6	39	0.15	1.6
Monson	3	49	0.06	4.5
Monticello	3	38	0.08	3.8
Moose River	1	41	0.02	4.6
Morrill	1	17	0.06	1.3
Mount Chase	2	38	0.05	8.1
Mount Desert	16	39	0.41	7.6
Mount Vernon	3	43	0.07	2
Naples	22	37	0.59	6.7
New Canada	2	36	0.06	6.5
New Gloucester	8	48	0.17	1.7
New Limerick	2	20	0.10	3.8
New Portland	2	44	0.05	2.5
New Sharon	1	47	0.02	0.8
New Sweden	1	35	0.03	1.6
New Vineyard	1	36	0.03	1.4
Newburgh	2	31	0.06	1.4
Newcastle	3	30	0.10	1.7
Newfield	2	33	0.06	1.5
Newport	18	37	0.49	6
Newry	13	62	0.21	37.8
Nobleboro	2	23	0.09	1.2
Norridgewock	6	51	0.12	1.8
North Berwick	3	38	0.08	0.7
North Haven	3	12	0.25	7.9
North Yarmouth	2	21	0.10	0.6
Northport	8	24	0.33	6

Town	Outlet Count	Square Mileage	density (outlets/sq. mi.)	Ratio (outlets/1000 ppl)
Levant	2	30	0.07	0.9
Lewiston	105	36	2.92	2.9
Oakland	12	28	0.43	2
Ogunquit	49	4	12.25	40
Old Orchard	54	8	6.75	6.1
Old Town	24	45	0.53	3
Orient	1	38	0.03	6.9
Orland	7	51	0.14	3.3
Orono	20	20	1.00	2.2
Orrington	3	26	0.12	0.9
Otis	1	29	0.03	1.8
Otisfield	1	44	0.02	0.6
Owls Head	1	9	0.11	0.6
Oxford	9	42	0.21	2.3
Palmyra	5	41	0.12	2.6
Paris	16	41	0.39	3.3
Parkman	1	46	0.02	1.2
Parsonsfield	3	60	0.05	1.9
Passadumkeag	1	24	0.04	2.3
Patten	7	38	0.18	6.3
Pembroke	4	28	0.14	4.6
Penobscot	1	41	0.02	0.7
Perry	6	32	0.19	7.1
Peru	2	48	0.04	1.3
Phillips	3	51	0.06	3
Phippsburg	10	29	0.34	4.7
Pittsfield	11	49	0.22	2.6
Pittston	1	32	0.03	0.4
Plymouth	1	31	0.03	0.8
Poland	11	47	0.23	2.3
Portage Lake	3	35	0.09	7.7
Porter	2	33	0.06	1.4
Portland	276	21	13.14	4.3
Pownal	1	23	0.04	0.7
Presque Isle	36	78	0.46	3.8
Princeton	4	42	0.10	4.5
Randolph	4	2	2.00	2.1
Rangeley	20	56	0.36	19
Raymond	10	45	0.22	2.3
Readfield	3	31	0.10	1.3
Reed Plt	1	59	0.02	4.8
Richmond	9	31	0.29	2.7
Robbinston	1	29	0.03	1.9
Rockland	50	13	3.85	6.6
Rockport	17	23	0.74	5.3
Rome	1	32	0.03	1
Roxbury	1	44	0.02	2.6
Rumford	25	70	0.36	3.9
Sabattus	7	27	0.26	1.6
Saco	47	39	1.21	2.8
Saint Agatha	5	35	0.14	6.2
Saint Albans	2	47	0.04	1.1
Saint Francis	3	30	0.10	5.2
Saint George	10	25	0.40	3.9
Saint John Plt	1	51	0.02	3.5
Sandy River Plt	1	35	0.03	10.8
Sanford	49	49	1.00	2.4
Sangerville	2	40	0.05	1.6
Scarborough	48	48	1.00	2.8
Searsmont	1	39	0.03	0.9
Searsport	11	29	0.38	4.2
Sebago	4	49	0.08	2.8
Norway	14	47	0.30	3
Oakfield	3	36	0.08	4.1
Sedgwick	2	27	0.07	1.8
Shapleigh	4	41	0.10	1.7
Sherman	3	40	0.08	3.2
Shirley	1	54	0.02	5.5
Sidney	2	45	0.04	0.6
Skowhegan	28	60	0.47	3.2
Smithfield	2	25	0.08	2.2
Solon	5	41	0.12	5.3
South Berwick	5	32	0.16	0.7
South Bristol	4	13	0.31	4.5
South Portland	82	12	6.83	3.5
South Thomaston	2	11	0.18	1.4
Southport	4	5	0.80	5.8
Southwest Harbor	24	14	1.71	12.2
Springfield	3	38	0.08	7.9
Standish	15	81	0.19	1.6
Starks	1	32	0.03	1.7
Stetson	1	37	0.03	1
Steuben	3	43	0.07	2.7
Stockholm	4	34	0.12	14.8
Stockton Springs	4	20	0.20	2.7
Stoneham	1	35	0.03	3.9
Stonington	7	10	0.70	6.1
Stow	1	24	0.04	3.5
Strong	2	29	0.07	1.6
Sullivan	3	28	0.11	2.5
Sumner	1	45	0.02	1.2
Surry	2	39	0.05	1.5
Swanville	1	22	0.05	0.7
The Forks Plt	4	41	0.10	114.3
Thomaston	6	11	0.55	1.6
Topsfield	2	55	0.04	8.9
Topsham	17	33	0.52	1.9
Tremont	6	17	0.35	3.9
Trenton	6	18	0.33	4.4
Troy	1	36	0.03	1
Turner	14	63	0.22	2.8
Union	5	34	0.15	2.3
Unity	5	41	0.12	2.6
Upton	1	42	0.02	16.1
Van Buren	11	35	0.31	4.2
Vanceboro	2	22	0.09	13.6
Vassalboro	5	48	0.10	1.2
Veazie	2	3	0.67	1.1
Verona	4	6	0.67	7.5
Vinalhaven	6	24	0.25	4.9
Waite	1	44	0.02	9.5
Waldo	1	19	0.05	1.4
Waldoboro	17	73	0.23	3.5
Wales	1	17	0.06	0.8
Wallagrass	1	41	0.02	1.8
Warren	4	48	0.08	1.1
Washburn	2	35	0.06	1.2
Washington	1	39	0.03	0.7
Waterboro	13	57	0.23	2.1
Waterford	5	53	0.09	3.4
Waterville	60	14	4.29	3.8
Wayne	2	26	0.08	1.8
Weld	1	63	0.02	2.5
Wells	49	57	0.86	5.2

Sebec	1	38	0.03	1.6	West Bath	1	12	0.08	0.6
Town	**Outlet Count**	**Square Mileage**	**density (outlets/sq. mi.)**	**Ratio (outlets/1000 ppl)**	**Town**	**Outlet Count**	**Square Mileage**	**density (outlets/sq. mi.)**	**Ratio (outlets/1000 ppl)**
West Forks Plt	5	49	0.10	106.4	Winslow	12	39	0.31	1.5
West Gardiner	2	27	0.07	0.7	Winter Harbor	4	14	0.29	4
West Paris	5	24	0.21	2.9	Winterport	3	36	0.08	0.8
Westbrook	36	17	2.12	2.2	Winthrop	11	38	0.29	1.8
Weston	1	41	0.02	4.9	Wiscasset	14	25	0.56	3.9
Westport	2	9	0.22	2.7	Woodland	2	35	0.06	1.4
Whitefield	4	47	0.09	1.8	Woodstock	2	47	0.04	1.5
Wilton	11	43	0.26	2.7	Woolwich	5	36	0.14	1.8
Windham	31	50	0.62	2.1	Yarmouth	23	14	1.64	2.8
Windsor	2	35	0.06	0.9	York	54	56	0.96	4.2
Winn	1	44	0.02	2.4					

Source: DPS, 2006b, MEGIS, 2003[146].

[146] This table was consulted to find square mileage of each Maine Minor Civil Division (MCD).