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## ROADSIDE LITTER CONTROL: A SURVEY OF PROGRAMS AND PRACTICE

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## 1. INTRODUCTION

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### 1.1 - THE SIZE OF THE PROBLEM

Surveys of state transportation agencies in all 50 states found that highway maintenance engineers and the public view roadside litter and roadside dumping as a major problem. An estimate of the costs associated with removing litter and illegal roadside dumps explains why. The Maryland State Highway Administration estimates that it spends more than \$5,000,000 each year to remove more than 4,500 truckloads of trash from 5,200 miles of state roads<sup>1</sup>. This figure does not include the efforts of local governments and others.

Nationwide over \$200 million tax dollars are spent each year to pick up litter and illegally dumped solid waste<sup>2</sup>. It is estimated that State Departments of Transportation spend nearly \$120 million per year on litter cleanup. Table 1 shows 1999 estimates reported by a number of states.

*Table 1: Estimated Annual Cleanup Costs Reported by States*

State	Annual Costs	State	Annual Costs
Arizona	\$2,000,000	Missouri	\$4,000,000
Arkansas	\$2,189,114	Nebraska	\$125,000
Colorado	\$3,000,000	Nevada	\$1,843,000
Connecticut	\$2,361,000	New Hampshire	\$1,000,000
Florida	\$9,500,000	New Jersey	\$5,000,000
Illinois	\$8,600,000	New York	\$300,000
Indiana	\$940,000	North Carolina	\$6,500,000
Kansas	\$806,000	Ohio	\$2,000,000
Kentucky	\$5,356,000	Oklahoma	\$4,000,000
Louisiana	\$5,000,000	Virginia	\$6,500,000
Maryland	\$5,000,000	Washington	\$1,800,000
Michigan	\$2,600,000	West Virginia	\$1,500,000
Minnesota	\$2,000,000	Wyoming	\$1,500,000

### 1.2 - SOURCES OF LITTER

While many people associate litter with trash thrown from the windows of passenger vehicles, there are more than seven primary sources of litter. Litter comes from homes, businesses, construction sites, and from trucks with uncovered loads. Illegal dumping, also called open dumping, midnight dumping, or fly dumping is also a significant source of trash on or near the roadways. Dumping differs from littering in the amount of material, who dumps it, and the underlying reasons for this behavior. In the broadest sense, litter can be defined as "misplaced solid waste<sup>3</sup>."

Research by Keep America Beautiful, Inc. indicates that littering is unintentional 40% of the time and intentional 60% of the time. Results from a litter study conducted by the California Department of Transportation are very similar<sup>4</sup>. People who intentionally litter do so because they

feel no sense of ownership, they believe someone else will pick up after them, and because someone else has already littered. Two-thirds of those who deliberately litter are in groups<sup>5</sup>. While it is difficult to describe a typical "dumper", they may include contractors, do-it-yourselfers, auto repair and tire shops, scrap collectors, and waste management companies. Some items may be dumped because they have been banned from landfills and are expensive or difficult to dispose of. In some cases, citizens are simply not aware that dumping is a crime<sup>6</sup>.

Studies on littering have found differences in littering behavior among males and females, and between different age groups. Researchers have, however, concluded that everyone is a potential "litter bug" in certain situations<sup>7</sup>. Research conducted by the Institute for Applied Research (IAR) suggests that 25% of the population will always litter, 25% will never litter, and 50% may be persuaded not to litter. The most effective anti-litter programs appear to be those that are targeted at the most frequent user of a particular environment, but that have "spill-over" effects with other audiences.

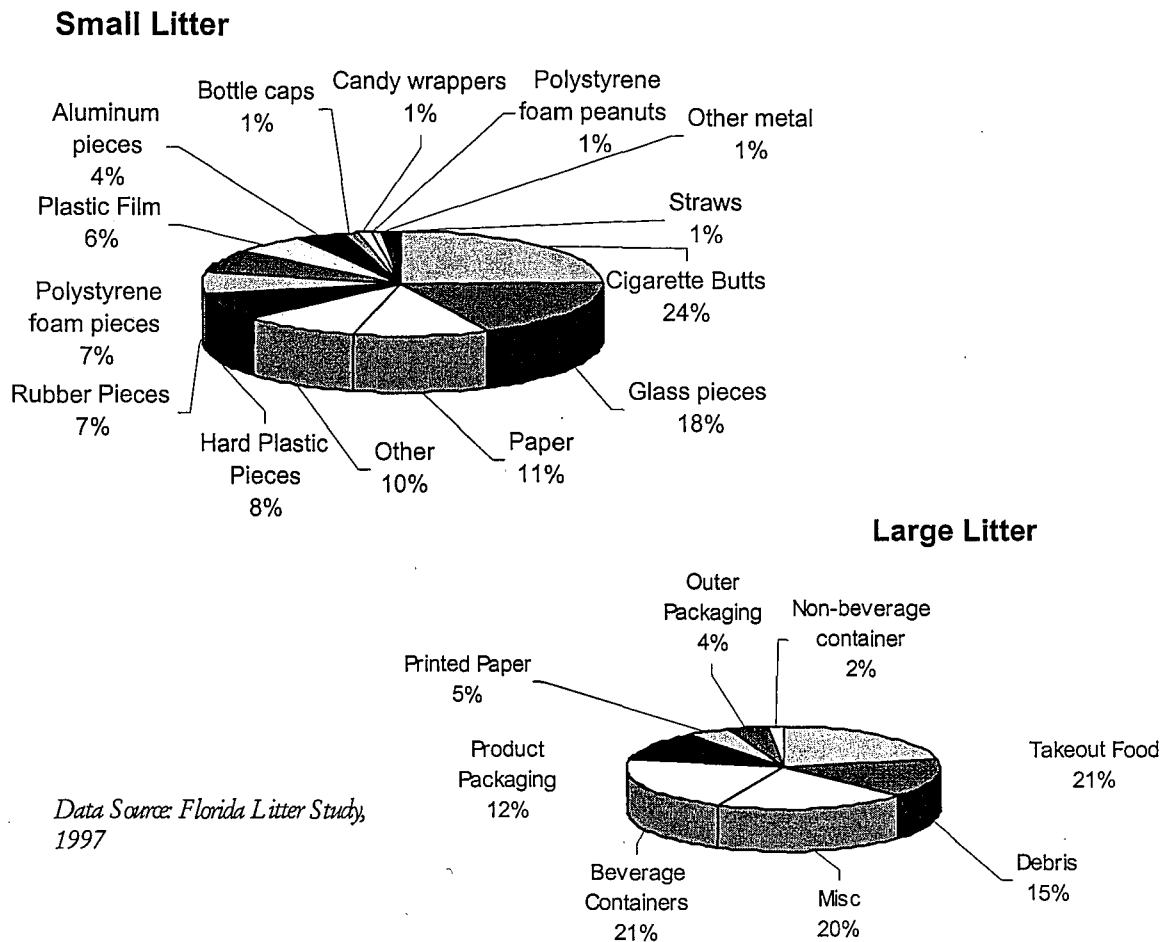
Litter is more than an eyesore or nuisance. A number of studies have demonstrated a direct link between the presence of litter and the incidence of crime in neighborhoods. This phenomenon is referred to as the "Broken Window Syndrome". In some cases, the presence of only two pieces of litter may help some people feel that it is ok to litter and there is a direct relationship between the presence of trash and graffiti and crime<sup>8</sup>. Other studies also show the relationship between the environment and behavior. For example there is a clear link between the availability and visibility of trash receptacles and appropriate disposal<sup>9</sup>.

### 1.3 - TYPES OF LITTER

An incredible variety of items end up as roadside litter. A few states have conducted formal litter studies to identify the amount and type of litter found in various locations<sup>10,11</sup>. Some states ask that volunteers report the types of litter found along the roadside, and the amount of litter they have collected.

While the types of items found by the roadside varies by location, the results of the 1997 Florida Litter Study provide a general picture of the kinds and amount of litter found along the roadway. Large litter items are those over 4" across, including beverage containers, large pieces of paper, and product packaging<sup>12</sup>. Small items include cigarette butts, bottle caps, candy wrappers and other very small items. States use the results of these studies to develop targeted programs.

Figure 1: Composition of Litter

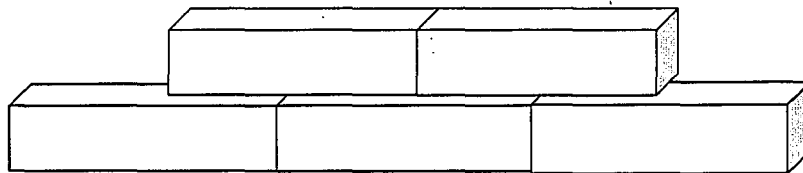


1.4 - DEFINITIONS OF LITTERING AND DUMPING

While the language used by states and local government in defining "littering" and "dumping" is generally similar, there are some important differences. Littering and dumping may be defined in separate laws and ordinances, or they may be combined in a single section. When the offences are defined separately, "littering" is usually defined as occurring only from a motor vehicle. Litter-related acts such as disposing of household garbage in a public litter receptacle or posting flyers around town may be included in the legislation. Some jurisdictions include a catch-all term or phrase in their litter laws to avoid choosing which littering acts to include or trying to construct an all-inclusive list. Littering may also be defined as an "indirect" act. For example, a person litters "indirectly" when he or she "allows," "permits," and/or "causes" a littering act to occur. While littering can be either accidental or intentional, dumping is largely defined as a deliberate act.

The Maryland law defines litter to include "all rubbish, waste matter, refuse, garbage, trash, debris, dead animals or other discarded materials of every kind and description"<sup>13</sup>. The penalties for

littering in Maryland vary according to the amount of litter. A person who dumps litter in an amount not exceeding 100 pounds in weight or 27 cubic feet in volume and not for commercial purposes is guilty of a misdemeanor and is subject to a fine of not more than \$1,000, or by imprisonment for not more than 30 days, or both. The fine increases to a maximum of \$10,000 and one year for an amount exceeding 100 pounds in weight or 27 cubic feet in volume, but not exceeding 500 pounds in weight or 216 cubic feet in volume and not for commercial purposes. Dumping over 500 pounds or 216 cubic feet of material or dumping any quantity for commercial purposes is a misdemeanor and carries a fine of not more than \$25,000 or imprisonment for not more than five years or both. The owner of the vehicle (including motor vehicles, boats, airplanes or other conveyances) or the operator if the owner is not present is presumed to be responsible for the violation. Penalties for dumping include a fine and/or suspension of the operator's license for up to seven days.



1.5 - ABOUT THE STUDY

The Maryland State Highway Administration sponsored this study. The objectives were to identify and describe litter control programs, and to highlight innovative or particularly effective approaches to this costly problem.

The information in this report was collected from a wide variety of sources, including a survey of state highway departments, literature reviews, and conversations with state and local government agency staff responsible for roadside maintenance. Prof. Emeritus, Everett Carter at the University of Maryland, conducted the Survey of State Departments of Transportation. A copy of the survey and a summary of the results are included in Appendix A.

1.6 - ELEMENTS OF LITTER CONTROL PROGRAMS

Every state in the United States and countless local governments have established litter control programs of some sort. These programs are based on strategies that include a combination of cleanup, prevention, enforcement and funding.



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## 2. LITTER CLEAN-UP

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State highway departments depend upon a combination of volunteer labor, inmate and public service programs, and paid crews to clean up roadside litter. A survey of 28 states shows that agency maintenance crews pick up approximately 35% of roadside litter. The remainder is picked up by volunteers (24.5%), special service crews (4%), inmate labor (13.5%), contract or maintenance providers (8%), and by other means (4%).

*Table 2: Litter Pick-up Efforts*

State	AAH Volunteers	Inmates	Maint. Force	Special Crew	Maint. Prov.	Contract	Other	Total
VA	20%	20%	40%			15%	5%	100%
CO	70%	3%	27%					100%
NE	60%		40%					100%
TX	10%					70%	20%	100%
WY	50%		40%			10%		100%
ME			100%					100%
IN	15%	5%	80%					100%
KS	15%		35%				50%	100%
MN	60%		30%				10%	100%
OR	15%	10%	5%	70%				100%
KY	10%	10%	60%				20%	100%
WV	80%	5%	15%				20%	120%
AZ	40%	40%	15%		5%			100%
ND	40%	20%	10%	30%				100%
NJ	10%	40%	50%					100%
WA	90%	5%	2%	1%	2%			100%
OH	10%	30%	20%	5%			35%	100%
OK	10%	60%	10%				20%	100%
NV	5%	14%	74%	2%		5%		100%
LA	1%	16%	33%			50%		100%
CA	35%	40%	15%	10%				100%
IL	10%	29%	60%				1%	100%
FL		12%	8%			80%		100%
CT	2%	17%	81%					100%
NH	25%		75%					100%
<b>Avg.</b>	<b>30%</b>	<b>21%</b>	<b>39%</b>	<b>20%</b>	<b>4%</b>	<b>38%</b>	<b>20%</b>	

### 2.1.1- Volunteer Programs

Volunteer programs are an important component of many litter control programs. For example, in Kansas litter is only picked up on adopted highways. Washington, West Virginia, and Colorado also depend very heavily on volunteers

#### 2.1.1.1 Adopt-a-Highway

A District Engineer in Tyler, Texas initiated the first Adopt-A-Highway (AAH) program in 1985. Today, more than 85,000 Adopt-a-Highway groups have adopted more than 215,000 miles of highway in 49 states, Puerto Rico, Canada, New Zealand and Australia<sup>14</sup>. Federal, state, and local agencies have also extended the concepts underlying the Adopt-a-Highway program to other volunteer clean-up programs, including Adopt-A-Street, Adopt-a-Ramp, Adopt-A-Spot, Adopt-a-

Park, Adopt-a-Beach, Adopt-A-Landing and Adopt-A-Wall (graffiti cleanup). Mowing can also be included in AAH Programs.

Few Adopt-a-Highway type programs have dedicated staff. Employees with other job duties usually coordinate the programs. Most state programs are organized and managed by district staff. Program funding typically comes from maintenance budgets or from a state's general fund. In some cases, AAH and other litter programs are funded through litter taxes and through a variety of environmental grant programs.



*Figure 2: Maryland SWAT Logo*

*Figure 3: Maryland Adopt-A-Highway Volunteers*



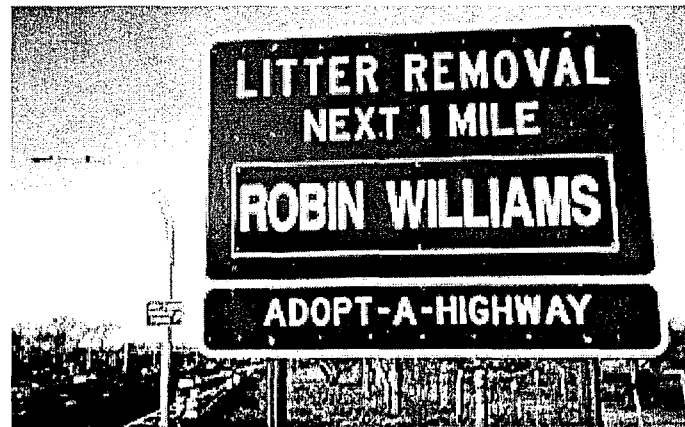
Source: <http://mcps.k12.md.us/schools/sherwoodhs/save/108/adoptahighway.htm>

Most AAH programs are very similar. Volunteers agree to pick up litter along both sides of a designated one- to three-mile section of roadway a specified number of times a year. In most states, highway cleanups take place two to four times a year; pickups on urban streets may be more frequent. In return a sign recognizing the adopting group is placed on each side of the highway. The sponsoring agency provides safety instruction and operating supplies such as litterbags, paint for graffiti removal, gloves, safety vests, and safety signs. Some agencies maintain a limited supply of equipment and tools for loan. Most agencies remove and dispose of bagged litter, however in a few cases volunteers are expected to remove trash bags from the roadside. The 1988 AASHTO report, *A Guide for Creating a Statewide Adopt-a-Highway Program*<sup>15</sup>, provides guidance on developing and managing a volunteer adoption program. Appendix B includes a list of state Adopt-A-Highway programs and their website addresses.

#### 2.1.1.2 Sponsor-A-Highway Programs

Sponsor-A-Highway programs are a variation on AAH. The primary difference is that sponsors contract with private companies to maintain a specific section(s) of roadway. California was one of the first states to include corporate sponsors into the Adopt-A-Highway Program<sup>16</sup> in this way. Sponsorship programs have also been established in New York, Arizona, New Jersey, Connecticut, Washington State and New Hampshire, as well as in the cities of Seattle and Boston, and on Long Island. Sponsors include celebrities, sports teams, and businesses. The monthly investment ranges between \$200 and \$1200, depending on the level of service mandated by the agency and frequency that the services are provided. The maintenance contractors must be approved by the state and must obtain permission to maintain specific sections of roadway.

Figure 4: Sponsor-A-Highway



(Source: <http://www.adoptahighway.com/faq.cfm>)

#### 2.1.1.3 Litter Cleanup Events

At least twenty-one states sponsor annual cleanup events<sup>14</sup>. Like Adopt-A-Highway Programs, cleanup events are usually an integral part of litter control and beautification programs, and are often a primary component of anti-litter campaigns. Clean-up events are also used to highlight AAH programs and to coordinate cleanup among AAH volunteer groups. Figure 5 shows an example of how Texas has tied a litter cleanup event with the Don't Mess With Texas anti-litter campaign.

Cleanup events are also sponsored by a variety of other public agencies and non-profit organizations. On a national scale, Keep America Beautiful (KAB), a non-profit organization with local affiliates in 39 states, organizes the "Great American Cleanup" every spring. KAB estimates that more than 1 million volunteers in over 10,000 local communities participate in a range of cleanup events, including litter and dumpsite cleanup, and community improvement projects<sup>17</sup>. Private companies and industry or trade associations support this effort through donations of cash, cleanup equipment and products (such as trash bags), and by promoting the program among their employees.

Figure 5: Texas Trash Off Poster



Source: [www.dontmesswithtexas.org](http://www.dontmesswithtexas.org)

#### 2.1.1.4 Bounty Programs

Bounty programs combine aspects of both volunteer and paid programs. One example of a bounty program is the fugitive tire programs implemented by a local chapter of Pennsylvania CleanWays. Youth groups were paid a bounty of 50-cents-per-tire. The objectives were to get the tires picked up, to educate youth about litter, and to provide kids with an incentive by giving them a bounty for the tires.

In 1999, a similar program was launched in Indiana<sup>18</sup>. During the first year of Indiana's program, 1,023 volunteers participating in 76 fugitive tire youth groups collected 17,844 tires. Similar bounty programs have been established for abandoned vehicles. The Virginia Department of Motor Vehicles has an Abandoned Vehicle Program, which pays localities \$50 for each car that is recycled.

### 2.1.2 - Maintenance Crews and Maintenance Contractors

The use of State Highway Department maintenance crews and contractors for litter cleanup varies significantly from state to state. In states that depend heavily on volunteer programs state maintenance crews focus on cleanup of hazardous materials and cleanup in hazardous locations. In most Adopt-a-Highway programs, volunteers are not allowed to pick up litter in medians; and particularly hazardous locations are not eligible for adoption.

### 2.1.3 - Special Service Crews

Special service crews are a component of cleanup programs for many state and local governments. Special service crews include paid Youth Corps and Litter Patrols, inmate labor, those serving public service sentences, and disadvantaged worker and work rehabilitation programs.

#### 2.1.3.1 *Litter Patrols and Youth Corps*

California, Florida, Louisiana, Alaska, Montana and Washington<sup>19</sup> have legislation that provides for the creation or use of Youth Corps or other youth service programs to pick up litter. Youth corps employees are typically paid minimum wage or a little more during the summer months and work in supervised crews. Many of these state programs receive funding from federal and state sources or state litter funds.

Washington State's Ecology Youth Corps hires teenagers during the spring, summer, and early fall months. Adult supervisors, who are usually teachers participating in the project as a summer job, accompany teens. Workers 18 years of age and over are hired to cleanup in more hazardous areas such as near cliffs or rocky areas. In 1997, the Corps had four fulltime employees (regional coordinators, four part-time crew checkers, 32 part time crew supervisors and approximately 350 – 400 crewmembers<sup>20</sup>. An annual budget of \$3.5 million comes from the state's litter tax.

#### 2.1.3.2 *Youth Offender, Community Service Programs and Inmate Work Programs*

At least 29 states employ inmate work crews or include a community service litter cleanup program for non-violent offenders. Some of the states that have established Youth Offender Programs and community service sentences include: Colorado, Georgia, Hawaii, Iowa, Louisiana, Maryland, Minnesota, Nevada, New Jersey, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, South Dakota, Vermont, Washington<sup>21</sup>.



Figure 6: *Adult Community Service Work Crew Allegany County*

Source: <http://www.acso.allconet.org/photographs.html>

Several counties in Maryland have incorporated Community Service Work Crews into Alternative Community Services programs (ACS). For example, special work crews created by the Montgomery County Department of Correction and Rehabilitation are composed of adult and juvenile offenders who have been court ordered to perform community service as a condition of probation or as an alternative to juvenile adjudication<sup>22, 23</sup>. The work crews have performed services for a number of organizations including the Montgomery County Department of Public Works and Transportation, The County Police Department, and the City of Tacoma Park Maryland Police Department.

#### 2.1.3.3 *Rehabilitation & Disadvantaged Worker Programs*

Worker rehabilitation and training programs also provide litter pickup services in some places, however their contribution seems to be relatively small.

#### 2.1.4 - Issues Related to Volunteer Programs

Volunteer Programs provide an essential component of litter-control and cleanup programs. Adopt-a-highway and other volunteer cleanup programs are clearly effective, and provide significant benefits. In Maryland, the State Highway Administration estimates that Adopt-a-Highway volunteers saved the state over \$1.8 million dollars between 1989 and 1999. Nationwide, it is estimated that volunteer programs provide nearly \$120 million in savings annually. All of the organizations surveyed believe that Adopt-A-Highway programs provide significant benefits and are well worth the effort, but there are also several important issues that must be addressed by state and local agencies that are related to volunteer programs.

Motivating volunteers is an ongoing challenge. While groups that fail to meet their commitment are removed from AAH and other volunteer programs, it is, of course, more desirable to keep them interested. Many litter cleanup and prevention programs use a number of approaches to get the attention of volunteers, and to keep them interested and involved.

A number of states have been concerned about the adoption of highway segments by controversial groups. The Klu-Klux-Klan has attempted to participate in Adopt-a-Highway programs in several states, including Arkansas, Missouri, Florida, Texas and Maryland. The courts have ruled that the Klan can participate in Adopt-a-Highway programs in Arkansas, Missouri, and Florida. After a five-year battle, a federal judge recently ruled that the state of Missouri could not keep the Klan from participating in the litter-control program. Missouri is appealing the ruling<sup>24</sup>. In Florida and Arkansas, signs recognizing the Klan's participation were quickly and repeatedly vandalized. In Pasco County, Florida, the signs were torn down so often, the state refused to keep paying to replace them and the Klan gave up. In Arkansas, motorists went out of their way to dump trash on that section of road. The Klan threatened legal action in Maryland and Texas. In Maryland, Anne Arundel County (MD) abolished its volunteer roadside cleanup program rather than face a court challenge<sup>25</sup>. Texas took a more aggressive stand when a Klan affiliate applied to participate in a cleanup program near Fort Worth. The state attorney general filed a federal lawsuit claiming the Klan intended to intimidate minorities by raising signs, and the Klan withdrew its application.

The safety of volunteers working along the road is another primary concern. While traffic hazards are the most obvious danger faced by AAH volunteers, concerns have been raised about the possibility of injury from litter and hazardous materials dumped along the roadside. AAH



volunteers may encounter sharp objects, medical wastes, vegetation, objects in the right-of-way (drainage wells, culverts, erosion holes, intake covers), and animals or insects (rodents, snakes, dead animals, ticks, yellow jackets, bees), drug paraphernalia (needles, methamphetamine lab materials) and other hazardous materials<sup>26</sup>. A study of the dangers posed to AAH volunteers conducted by the Iowa State Department of Transportation found that chances are 23 percent or less that an Adopt-A-Highway program sponsor doing litter pick-up on the right-of-way of a non-interstate road will encounter debris or features they *consider* hazardous. Respondents in this survey were asked to list any injuries to themselves or someone in their group that had occurred while picking up litter. Only 26 of 1,180 responses returned by AAH sponsors indicated some type of injury had occurred. The most serious injuries reported were a sprain, cuts requiring stitches, and a snakebite. The most common injuries were small cuts, scratches and rashes.

No published information was found on the incidence of traffic accidents involving AAH volunteers. Anecdotal information suggests that there have been somewhere between 5 and 10 fatalities associated with volunteer work along the roadside, however this has not been substantiated. All AAH materials reviewed stressed safety for volunteers. Safety training is often delivered by State Highway Department staff, and supplemented by videos and safety pamphlets. Safety training is extremely important. No formal studies or surveys were identified that discuss the level of volunteer's knowledge of safe practices and behavior. When respondents to the survey were asked to list any suggestions they had to help ensure the safety of volunteers and garage employees while removing litter; the two most frequently mentioned were that the DOT should provide gloves to volunteers, and more frequent mowing of the right-of-way.



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### 3. LITTER PREVENTION

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There are two general approaches to litter prevention; public awareness and education programs that target the potential litterer, and programs designed to reduce the likelihood that an item will end up as litter. Programs that target the litterer include public awareness and marketing campaigns, educational programs and enforcement programs. Programs that reduce the likelihood that an item will end up as litter include recycling programs and bottle deposit and refund programs.

#### 3.1 - PUBLIC AWARENESS & MARKETING CAMPAIGNS

Public awareness and marketing campaigns have been developed and implemented to some extent by all states. These programs are often used to tie a number of anti-litter and beautification efforts together under a unifying theme. While the magnitude and sophistication of these programs vary widely from state to state, most have a number of common elements, including: a recognizable image and a clear message, community involvement and support, and public outreach and communications programs.

##### 3.1.1.1 *Image and Message*

Most (if not all) programs are built around a slogan and logo that is “catchy”, easy to recognize and that sends a clear message. Ideally, the slogan and logo are developed to appeal to a target audience, but still appeal to a wider audience.

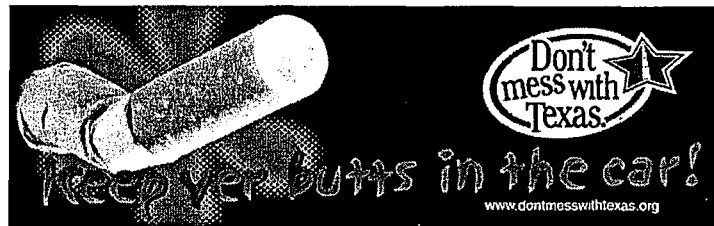
*Figure 7: North Carolina Slogan*

**Litter  
Trashes  
Everyone.**  
*Don't Do It.*

The “Don’t Mess with Texas” anti-litter campaign is a well-known and widely praised example. The slogan is used to identify a number of anti-litter and recycling efforts, and is used on a wide variety of promotional items including bumper stickers, coffee cups, and other items, which are sold in gift shops throughout the state. The campaign is designed to appeal to young males, but has caught the imagination of people of all ages around the world. The Texas Department of Transportation (TX DOT) found that nearly 90% of the population in Texas was familiar with the slogan and associated it with an anti-litter campaign. George W. Bush used it in several speeches delivered just prior the 2000 Presidential Primary elections.



Figure 8: Targeted Anti-littering message

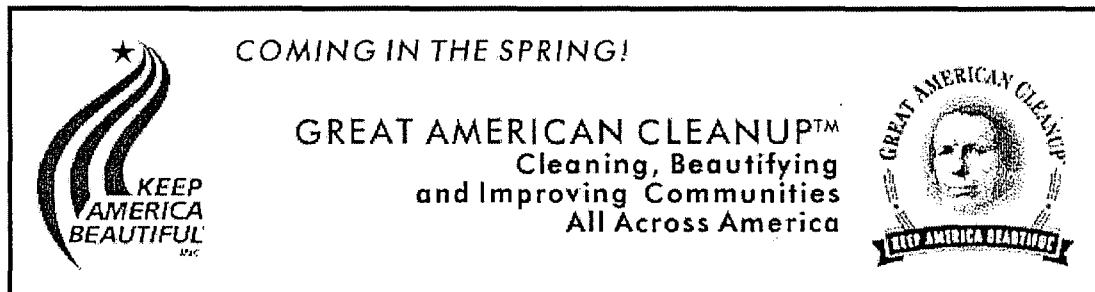


Source: Texas Department of Transportation, <http://www.dontmesswithtexas.com>

The actor, Iron-eyes Cody is perhaps one of the oldest and best known anti-littering and anti-dumping images. Keep America Beautiful launched their now famous public service message on Earth Day in 1971. In 1998, it was resurrected as part of a new campaign "Back by Popular Neglect." Since 1988, KAB has sponsored an annual service award for volunteer men who have demonstrated lifelong leadership in raising public awareness about litter prevention, roadway and community beautification, the solid waste issue, and the need for citizens to participate in activities that preserve and enhance natural resources and public lands (27).

Several states have developed logos and slogans designed to appeal to school age children. Some, including Maryland, have developed "Litterbug" campaigns that include poster design competitions and other contests. The same logos and slogans are used in educational and promotional materials for children. "Keep Maryland Beautiful Month, launched in 1999, includes Maryland State Highway Administration's (SHA) Anti-Litter Poster Contest for students ages 5 to 14 (28). Further discussions on educational programs are included in Section 3.2.

Figure 9: Keep America Beautiful & Iron Eyes Cody



### 3.1.2 - Community Support and Public Involvement

The success of anti-litter campaigns depends on support from decision makers and citizens, alike. Active involvement in programs increases public awareness of littering and the problems associated with it, and it helps to motivate the volunteers who are an essential part of most anti-litter programs. A variety of interesting approaches have been used to involve the public in anti-litter activities and to motivate volunteers.



- **K-12 Contests.** Many organizations sponsor annual poster contests or contests where students are asked to name a "mascot" or character, such as a litterbug.
- **Contests for Adults.** Contests are often used as part of cleanup events. Recognition may be given to AAH groups that collect the most litter, the most sites clean, the most trees planted, or the most unusual item found <sup>29</sup>.
- **Special Events.** AAH programs incorporate a number of innovative special activities to correspond with AAH pickup days. These include special picnics, barbecues and parties following litter pickup, and organizing novelty events such as Trash Parades or a "Trash Band."
- **Recognition.** Certificates or promotional items, such as hat and coffee cups are often provided to individual participants as well as sponsoring organizations. In addition to Adopt-A-Highway signs, corporate sponsors may be given the right to display a logo and may be noted in newsletters and on websites.
- **Awards.** Many programs present awards to outstanding groups and recognition of sponsoring groups beyond placement of the Adopt-A-Highway Signs. For example, each California Department of Transportation District Office selects an outstanding group in their district. These groups are presented with a plaque, their picture is posted on an "Honored Volunteers" web page, and news releases are provided locally<sup>29</sup>.
- **Anti-litter Pledges.** Anti-litter pledges for adults and for children are another means of raising awareness of the causes and problems associated with roadside littering, as well as littering and dumping laws and the penalties. The Great Louisiana's People's Pledge is a voluntary pledge stating that the person will prevent litter from blowing onto highways, into streams or waterways, and practice proper waste disposal of trash and debris generated from their homes, business, vehicle, or water vessel.

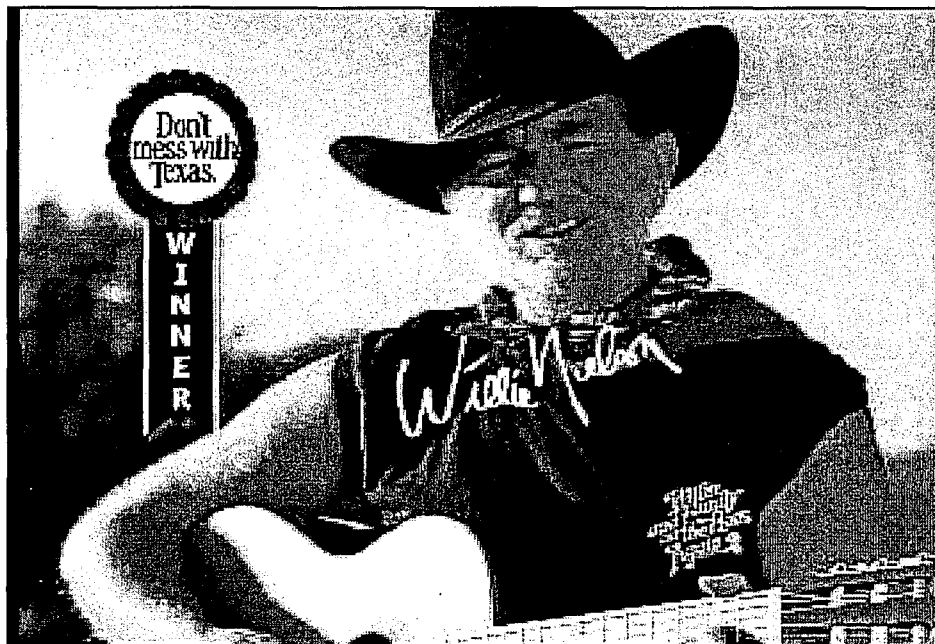
Several states and a number of non-profit organizations provide information to potential volunteers on how to organize events and how to attract additional volunteers. The Oklahoma Department of Transportation has published a list of innovative "How-To" ideas<sup>30</sup>. Organizations like Pennsylvania CleanWays and Keep America Beautiful also publish information and suggestions for volunteers.

### 3.1.3 - Celebrity Endorsements

California and Texas have enlisted the help of celebrities to promote litter prevention and litter cleanup programs<sup>29</sup>. In addition to the sponsorship programs mentioned above, some states have been particularly successful in gaining the support of well-known performers, politicians, and other celebrities for public-service announcements used widely on billboards, television, and in the printed media. Initially, Texas recruited celebrities popular with the target audience to participate in the program. After the first of these public service announcements was released featuring Stevie Ray Vaughan, the popularity of the campaign increased exponentially and many other celebrities offered their time.



*Figure 10: Winner of the 1999 Don't Mess With Texas Election*



In 1999, TX DOT developed a novel program that captured the attention of the public. Texas residents were asked to vote on their favorite anti-litter advertisement from approximately 50 messages that had been used over the previous few years. Willie Nelson, a well-known country western performer, was the clear winner. Other celebrity spots featured Lyle Lovett, George Forman, the Cowboy Poet, and the “talking long-horn.” California has also been proactively incorporating celebrities into public service messages. In addition to performers Bette Midler and Fess Parker, California messages have also featured US Senators from Barbara Boxer and Diane Feinstein.

#### 3.1.4 - Outreach and Communications

Outreach and communications are a central component of anti-littering campaigns. Outreach and communications is traditionally accomplished through the print and broadcast media, and by displaying the campaign logo and tagline.

Public service announcements and paid advertising time on television and the radio are the most commonly used means of reaching large numbers of people. While some campaigns depend exclusively on free airtime, some agencies, like TXDOT, also purchase airtime. A number of states also use billboard advertising as well. TXDOT estimates that they receive an average of \$8.9 million a year in public service airtime, which translates to \$116 million over the 13-year life of the program.



Figure 11: Bette Midler Celebrity Endorsement

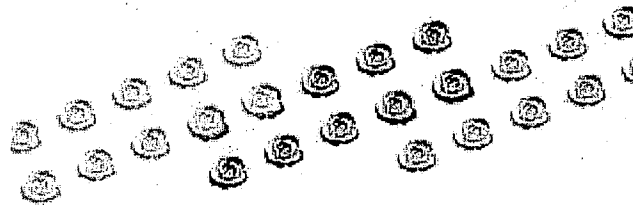
Look who's talking about

# Adopt-A-Highway



"You know what I say... Get the truck off the highways and back on stage where it belongs."

Bette Midler  
Actress, Singer, Philanthropist



Like California, New and Midwestern States, Grants Covered.  
Find out how you can help.  
Call: 1-800-253-2122



Endorsements have been sought from well known performers and politicians.  
<http://adopt-a-highway.dot.ca.gov/celebs.htm>

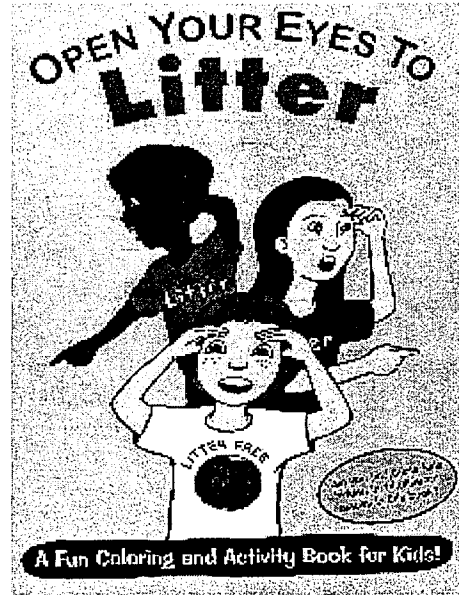
Internet websites are aggressively used by some state and local agencies to promote Adopt-A-Highway programs and special events. About 1/2 of the states with Adopt-a-Highway programs use the Internet to disseminate information about the program and to post application forms, safety rules, and other information. Several of these sites use the Internet to collect information from volunteer groups on their cleanup activities. A smaller number of states use the Internet to provide recognition to their volunteers and sponsoring agencies, and to disseminate.

### 3.2 - EDUCATION PROGRAMS

Research has shown that littering values are learned at a fairly young age<sup>2</sup>, and that education programs reinforce anti-litter behavior. Many states now require the development of litter education programs. Several states, as well as environmental educators, public interest organizations, and trade associations have produced educational materials and information for K-12 teachers, including lesson and activity plans and links to other resources<sup>31</sup>.



Figure 12: Litter Coloring Book -PA Cleanways



Industry associations and the private sector have also developed public educational materials. One example, titled "Waste in Place" is an elementary school-level curriculum guide that provides educators and students with information about litter prevention and responsible solid waste management practices -- including waste reduction, recycling, composting, and waste-to-energy and landfills<sup>32</sup>. A number of websites have also been developed specifically to appeal to children, that provide coloring books, crossword puzzles and other activities<sup>2,33,34</sup>.

Figure 13: Maryland's Litter Critter





A retired teacher invented Auntie Litter (anti-litter) to "do for the environment what Uncle Sam has done for patriotism." A particularly innovative element of this program is the Pollution Patrol, a chorus of children to travel and sing Auntie Litter songs at special events. This group has been quite popular, and has a program airing on Alabama Public Television and a 30-second musical public service announcement, Team Up to Clean up America, airing on national cable television. The same organization is developing a musical comedy for the environment, Auntie Litter's Recycling Rescue, which has run twice in the Birmingham Alabama area<sup>35</sup>.

### 3.3 - CONFERENCES & LITTER SUMMITS

Awareness campaigns may also be directed at agencies, and have been organized by some State Departments of Transportation. These conferences typically focus on the elements of existing litter awareness campaigns including: the message, public service announcements, and educational materials, and provide a forum for agencies and elected officials to address the impacts and share solutions. Urban Litter Forums sponsored by the US Conference of Mayors, held in Fort Lauderdale Florida and Denver Colorado, resulted in the development of a "Best Practices" guide for urban litter prevention programs<sup>36</sup>.



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#### 4. CONTAINER DEPOSITS AND BOTTLE BILLS

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The objective of container deposit and recycling programs is to prevent or make it less likely that specific items will become litter. Beverage container refund laws eliminate or reduce litter by providing a monetary incentive for the purchaser (or someone else) to return the empty container and to collect the deposit from the retailer. A number of states with bottle bills have reported significant decreases in beverage container litter following implementation of these systems. High recycling rates are also reported for states where beverage containers are covered by a deposit. While the scavenge value of these containers has an impact on roadside litter, scavengers do not fully resolve the litter problem because they do not collect litter with no cash value.

The first U.S. bottle bill was passed in Oregon in 1971. Since that time ten states, one U.S. city and eight provinces have passed legislation requiring deposits on beverage containers. These laws impose \$0.04 to \$0.05 deposit fee on beverage containers sold within a state. The deposit is refunded when the containers are returned to the distributor. In some states, beverage retailers are required to pay consumers a specified refund value for returning empty containers, and in turn, wholesale distributors of the beverages are required to pay refunds to retailers. Containers for imported beverages need not be returned to the country or State of origin, but only to the local distributor. In general, the laws do not require the recycling or reuse of the empty containers, however except in rare instances, the returned containers are recycled or reused. Table 3 presents a summary of key features of these beverage container refund laws<sup>37</sup>.

Bottle bills, often controversial, face significant opposition from special interest groups. Industry groups, such as the Can Manufacturers Institute and the Container Recycling Institute, actively debate the costs and benefits of these programs<sup>38</sup>. Strong public support is reported for bottle bills by state and national opinion polls<sup>39</sup>. While all attempts to repeal existing bills have failed, groups with a special interest against bottle bills, such as the beer and soft-drink companies, container manufacturers, and grocery stores, have engaged in successful lobbying campaigns in a number of states. Consequently, since 1984, no state legislature has passed a deposit/refund bill. Kentucky is currently the only state considering a beverage container bill. Recent reports in the media, however, indicate that the champion for the legislation in the state house has ended his fight to pass this legislation<sup>40</sup>.



Table 3: Container Deposit and Refund Programs

State/City	Containers Covered	Deposit Amount	Redemption	Rate
California	beer, malt, soft drinks, wine coolers, mineral water & soda water	2.5 cents < 24 oz 5 cents > 24 oz	Aluminum	80%
			Glass	67%
			Plastic	58%
			Overall	76%
Columbia Missouri	beer, malt, soft drinks, carbonated mineral water	5 cents	Overall	85%
Connecticut	beer, malt, soft drinks, mineral water	Minimum 5 cents	Cans	88%
			Glass	n/a
			Plastic	70-90%
Delaware	Non-aluminum Beer, malt soft drinks, mineral water	5 cents	n/a	
Iowa	beer, soft drinks, soda water mineral water, wine cooler, wine, liquor	5 cents	Cans (soda)	74%
			Pet (soda)	80%
			Glass (soda)	100%
			Beer	90%
			Wine/Liquor	56%
Maine	all beverages except dairy products and unprocessed cider	wine/liquor 15 cents all others, 5 cents	Beer/soft drinks	96%
			non-carbonated	97%
			Spirits	87%
			Wine	83%
			Overall	96%
Massachusetts	beer, soft drinks carbonated water	5 cents	Overall	81%
Michigan	beer soft drinks, wine coolers canned cocktails, carbonated mineral water	refill 5 cents non-refill 10 cents	Overall	98%
New York State	beer, soft drinks, wine coolers carbonated mineral water soda water	5 cents	Overall	76%
Oregon	beer, malt, soft drinks, carbonated mineral water mixed wine drinks	5 cents standard Refill 2 cents	Overall	90%
Vermont	beer, malt, soft drinks, mineral water, mixed wine drinks, liquor	liquor 15 cents all others, 5 cents	Beer	97%
			Soft drinks	90%
			Liquor	72%





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## 5. LEGISLATION AND ENFORCEMENT

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Enforcement programs are also an essential component of a comprehensive litter control program. Priorities, penalties, law-enforcement training, enabling legislation, citizen awareness, and the support of local decision-makers and elected officials are all components of an effective enforcement effort.

### 5.1.1- Legislation

States and local governments have legislation that defines littering and dumping, and proscribes the penalties for different acts. While the language used by states and local government in defining "littering" and "dumping" is generally similar, there are some important differences.

- Littering and dumping may be defined in separate laws and ordinances, or they may be combined in a single section. When the offences are defined separately, "littering" is usually defined as occurring only from a motor vehicle.
- Litter-related acts such as disposing of household garbage in a public litter receptacle or posting flyers around town may be included in the legislation. Some jurisdictions include a catch-all term or phrase in their litter laws to avoid choosing which littering acts to include or trying to construct an all-inclusive list.
- Littering may also be defined as an "indirect" act. For example, a person litters "indirectly" when he or she "allows," "permits," and/or "causes" a littering act to occur.
- While littering can be either accidental or intentional, dumping is largely defined as a deliberate act.

States and local governments have taken a number of approaches to developing penalties that may be levied on litterer's and dumpers. Internationally, anti-littering laws and penalties in Singapore are among the most severe. In the United States, as in the rest of the world, penalties are much more lenient. Most states and jurisdictions have legislation that allows the assessment of fines and/or jail sentences for littering and dumping. Maximum penalties for littering commonly range from \$250 to \$1,000 for first offenders. In some instances, the law allows first offenders to receive a sentence of up to one year in prison. One state recently reduced the fine for littering from \$500 to \$250, but added the requirement for public service (litter pickup).

States also apply penalties associated with vehicle registrations or drivers licenses, however more severe punishments are generally reserved for those who dump large quantities of material or hazardous materials. Some of the options include:

- Record Points with State Department of Motor Vehicles
- Revoke/Suspend Vehicle Registration
- Suspend driver's license
- Forfeiture of Motor Vehicle or Other Personal Property



Singapore has strict laws against littering of any kind. First-time offenders face a fine of up to S\$1,000. Repeat offenders may be fined up to S\$2,000 and may receive a Corrective Work Order (CWO). The CWO requires litterbugs to spend a few hours cleaning a public place, for example, picking up litter in a park. The litterbugs wear bright jackets, and sometimes, the local media are invited to cover the public spectacle.

<http://www.expatsingapore.com/general/law.htm>

Figure 14: Litter Enforcement in Singapore

Litterers and dumpers may also be required to pay other costs. For example, those convicted may be required to pay removal and disposal costs, attorney's fees and other administrative costs associated with their conviction, or they may pay restitution to a landowner if material is dumped on private property.

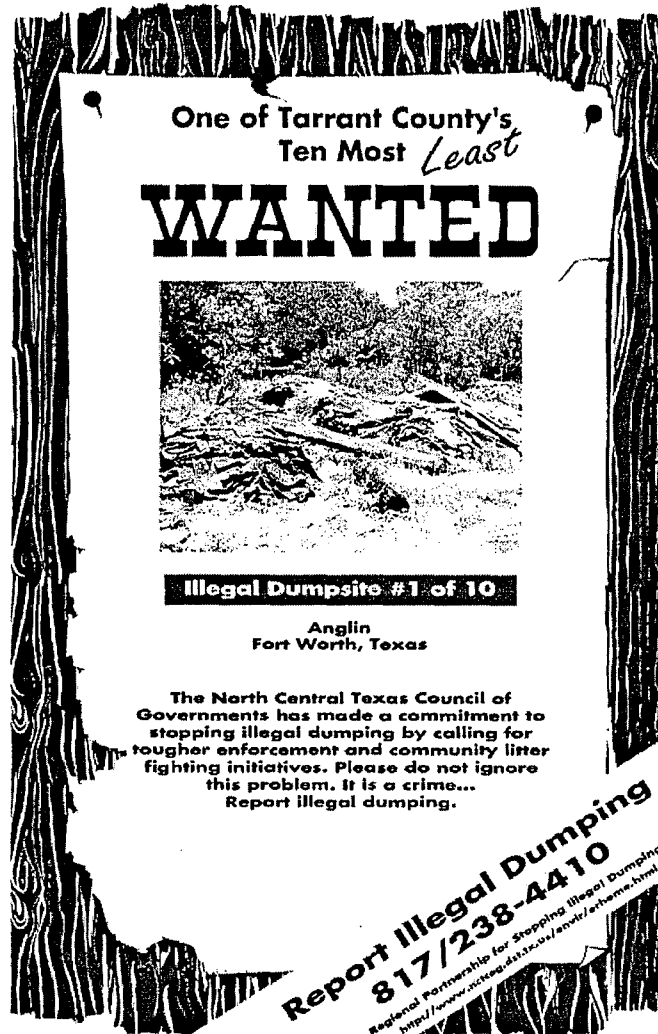
### 5.1.2 - Catching Litterers

Catching litterers in the act so they can be prosecuted is a problem. Littering takes place in a very short period of time and may not be repeated. Some agencies sort through roadside litter to find items such as receipts and bills that may identify the litterer or dumper.

Some states have developed aggressive programs that actively encourage citizens to report litterers and illegal dumpers. In most cases, citizens are asked to provide a license number, and information on when and where the littering or dumping took place. A few programs provide rewards for information leading to a conviction or a share of the fine<sup>41</sup>. Most programs maintain a toll-free "hotline." Pennsylvania's REPORT-A-Vehicle Program (RAV)<sup>42</sup> provides citizens with a pre-printed reporting card. The registered owner of the vehicle is identified and notified by mail of the location, date, time and circumstances of the reported violation, and describes the negative impacts of littering and the legal ramifications of such behavior. Most programs include items such as a car litterbag and a brochure or booklet on littering and/or dumping. Knoxville Tennessee and several other state and local agencies allow litter and dumping violations to be reported via the Internet<sup>43, 44, 45</sup>. North Carolina reports that in 1999, more than 8000 litterbugs were reported through their "Bag-a-bug" program<sup>46</sup>. Tarrant County, Texas developed a "Ten Most Wanted series of posters featuring a picture of one of the county's illegal dump sites that encourage witnesses to report illegal dumping activities (See Figure 15).



Figure 15: Tarrant County "Wanted" Poster



### 5.1.3 - Enforcing the Law

Enforcing the law requires the support of law enforcement, the courts, local politicians and the public. Law enforcement officers need a high level of support and training if they are to play an effective role in reducing littering and dumping. Some of the training officers may need includes a review of criminal littering or illegal dumping amendments and any changes to the violations, procedures, and penalties<sup>2,47</sup>.

Judicial support is also essential. If the violators that are criminally prosecuted receive "soft" court treatment, this sends a signal that enforcement of these laws is a low priority. As part of their training, local enforcement personnel must be aware of the enforcement and judicial support available to them. Many locations have launched public awareness campaigns to make sure that the public is aware of the litter and illegal dumping laws.



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## 6. FUNDING

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Funding for litter control programs comes from a variety of sources, including maintenance funds, litter taxes, grants, gas-taxes, un-claimed container deposits, and industry or private sector support.

### 6.1.1 - Litter Taxes

While litter taxes do little to prevent litter, they provide an important source of funds for litter cleanup and prevention programs. Some the types of litter taxes that have been implemented in the United States are summarized in Table 4. Like beverage container deposit bills, litter taxes receive considerable opposition by industry groups such as the Food Packaging Institute<sup>48</sup>. A few jurisdictions, primarily at the local level, have gone a step beyond taxes to ban foodservice disposables. Most of those laws were passed in the early 1990's. A number of those laws have been repealed or are not being actively enforced.

Litter taxes provide an important source of revenue to support highway beautification and litter control programs. For example, Virginia collected \$1,752,000 in litter taxes in 1997. Tax funds were distributed as follows: 75 % to localities for both litter and recycling activities, 20 % for competitive environmental education grants, 5% to the Department of Environmental Quality to administer the grant program and provide support for the Litter Control and Recycling Fund Advisory Board, which sets policy for both litter and recycling in the Commonwealth<sup>49</sup>.

### 6.1.2 - Grants

Many local litter control programs were initiated with community improvement or other grants and a good share of these programs continue to receive grant funds. Some of these grant programs are funded directly by litter taxes or "left over" bottle deposits or refunds.

The Litter Control Program in Spokane County Washington began in 1987, funded by a matching grant from Washington State Department of Ecology. Funding is now provided through the Spokane Regional Solid Waste System. Approximately \$1.00 from each ton of disposed waste is allocated to the program<sup>50</sup>. In South Carolina, the Governor established a litter task force that provides grants through the State Department of Education and the Commission on National and Community Service for litter education programs in high schools and middle schools in South Carolina. This is a competitive grant designed to provide education and activities about litter reduction in an effort to improve the environment of schools and communities in the state of South Carolina.

### 6.1.3 - Donations and Private Sector Funding

The private sector and industry associations provide support for a number of anti-littering efforts. The type of support they provide includes cash, staff time, and many different kinds of in-kind contributions. The participation of these organizations is discussed in more detail in Section 3.



Table 4: Types of Litter Taxes

Type of TAX	Description	States
Litter Generating Industry	<p>Taxes may be levied on industries whose products are reasonable related to the creation of litter. Taxes may on selected packages, wrappings, and product containers apply to either the manufacturers' value of the products or to wholesalers' and retailers' gross proceeds of sales. Alternatively, the amount of the tax imposed may be based on the percentage of total sales for a particular type of business if approximately equal to the taxable activity.</p> <p>Manufacturers pay 1% of sales within new Jersey. Retailers with annual in-state sales of more than \$250,000 are exempt. Not applicable to wholesalers or cooperatives that distribute to independent retailers.</p> <p>Tax applies to every person engaged in business as a manufacturer, wholesaler, distributor or retailer of produces where either the package, wrapping or container contributes to litter. Revenues go to the state's Litter Control and Recycling Fund.</p>	<p>Washington</p> <p>New Jersey</p> <p>Virginia (51)</p>
Advance Disposal Fees (ADF)	Advanced Disposal Taxes/Fees (ADT's) are levied on consumer products and/or packaging either at the point of sale or at the distribution level to raise revenue for the handling and disposal of the product/packaging after use.	Florida (repealed)
Soft Drink Excise Taxes	An excise tax is levied on soft drinks. The state must be circled of the can end to visibly indicate that the tax has been paid by the distributor (52). Although can manufacturers are not responsible for the payment of excise taxes levied on products packaged in cans, can makers must provide the necessary labeling that soft drink distributors need to remain in compliance with the soft drink excise tax laws.	<p>West Virginia</p> <p>Virginia</p> <p>Louisiana repealed 3/97</p>
Hard-to-Dispose of Materials.	A state tax on "hard to dispose materials." The tax is imposed on every person selling or offering for retail sale food or beverages for immediate consumption and/or packaged for sale on a take out basis regardless of whether or not it is eaten on or off the vendor's premises. An annual application for a litter control participation permit is required for such businesses. A four-cent tax per case of beverage containers sold is imposed on Rhode Island's beverage wholesalers.	Rhode Island (53)
Tipping Fees	A tax levied on materials deposited in landfills. Usually collected from owners or operators of sanitary landfills.	Spokane, WA Illinois
Litter Tax on Beer & Soft drink industries	Tax generated by a portion of the taxes paid by beer and soft drink industries and designated retail stores in the state.	Virginia (51)
Corporate Taxes	This tax added to the corporate franchise tax rate. The second tier is an additional tax, on businesses manufacturing or selling products that might become litter. The limit of each tax tier is \$5,000. Corporations are allowed tax credits for cash donations made to local recycling and litter prevention efforts. Funds the State's Division of Recycling and Litter	Ohio



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## 7. ORGANIZATIONS INVOLVED IN ANTI-LITTER EFFORTS

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Formal Adopt-a-Highway Programs on state-controlled roadways are coordinated or "sponsored" by state or local agencies with transportation responsibilities, a significant number of other anti-littering programs sponsored or coordinated by a number of different public agencies and not-for-profit groups. Many corporations have also assumed roles that go well beyond adoption of roadway sections and sponsorship of individual events. The number of different agencies and groups involved in related and at times, over-lapping efforts clearly shows the benefits that can come from coordinated efforts and a well-defined, cohesive program.

### 7.1 - STATE AND LOCAL AGENCIES

In most cases, Adopt-a-Highway and Adopt-a-Road programs are generally organized by state and local agencies, including State Departments of Transportation, Environmental Departments, and Parks and Recreation Departments. Public Affairs or Communications Departments of State agencies often take the lead in public-information programs. The type and level of support provided by these agencies varies significantly from state to state. In many states, responsibility for coordinating Adopt-a-Highway Programs and other clean-up efforts rests with district-level employees. In some instances, this task might be assigned to a dedicated staff member, more often; it is assigned as an "extra" duty.

Some states have formed boards, councils, and task forces to address litter control, dumping, and recycling programs. Their roles, responsibilities and organization vary considerably from location to location. In Virginia, the Litter Control and Recycling Fund Advisory Board sets policy for both litter and recycling in the Commonwealth, and is one of the activities funded by Virginia's litter taxes<sup>51</sup>.

In South Carolina, the Governor established a Task Force on Litter to serve as an advisory group to the Governor's Offices. In this case, the Task Force incorporated as a nonprofit 501c(3) corporation and is funded primarily through corporate and private contributions. The membership includes volunteers, state agency representatives, business and industry, and interested citizens. It is dedicated to working with and enlisting the involvement of state agencies, citizens, schools, civic and volunteer groups, and corporations to meet our goals. The Task Force also serves as an advisory board for the Palmetto Pride litter Educational Initiative, funded through increased litter fees in the State budget.

### 7.2 - NON-PROFIT LITTER CONTROL ORGANIZATIONS

Non-profit environmentally oriented groups also play an important role in litter prevention and litter cleanup programs.



### 7.2.1- National Organizations

The best known of these is Keep America Beautiful, Inc. KAB local affiliates or chapters in 38 states (including Maryland) participate in KAB's national programs and organize local events. The scope of their activities varies considerably from state to state.

Keep America Beautiful coordinates and promotes a number of events at the national level, and serves as a clearinghouse and resource for local chapters<sup>17</sup>. KAB sponsors a number of awards including the Iron Eyes Cody award to outstanding volunteers, the FHWA/KAB awards program that honors state departments of transportation, and a series of other litter prevention awards. They also sponsor an annual conference held every December in Washington DC that is attended by KAB's state and local affiliate leaders, professionals in the fields of solid waste management, recycling, beautification and community improvement. KAB also sponsors the "Great American Cleanup" every year, conducts an active public-awareness campaign "Back by Popular Neglect" that builds upon their well-known campaign initiated in the 1970's that featured Iron Eyes Cody.

Corporate and industry sponsors provide an important source of funding for KAB. Some of their members include trade and industry associations such as the American Forest and Paper Association, the American Plastics Council, and the Food Marketing Institute. Private-sector industry sponsors include large corporations such as McDonalds, Anheuser-Busch, Brown and Williamson Tobacco Company, Coca Cola, and the Rechargeable Battery Recycling Company. KAB provides a complete list of their corporate sponsors on their website<sup>54</sup>.

### 7.2.2 - State or Regional Non-Profit Organizations

Non-profit organizations have been organized in a number of states. Pennsylvania CleanWays is one example of a non-profit organization that consists of a state board and local chapters. The Board oversees and provides assistance to existing chapters and helps develop new chapters. It sponsors an adopt-a-road program for locally maintained roads and creates and distributes educational tools to the chapters and the general public. Boards of volunteers run chapters, which in turn build community teams, set local priorities, and take on projects including litter cleanups, public education programs, and beautification programs. Local chapters may also adopt non-state maintained pathways, waterways, and other public and private areas<sup>55</sup>.

Keep Oklahoma Beautiful (KOB) is similar to Pennsylvania CleanWays in that its mission is to "encourage, educate and assist those who strive to improve, beautify and preserve Oklahoma's environment<sup>56</sup>". There are, however, significant differences in the way these organizations are funded and managed. KOB's operating budget comes strictly from membership dues, contributions, and a small public education contract with the Oklahoma Department of Environmental Quality as well as occasional grants for special projects. KOB does not support a headquarters office or a staff, association management firm under contract to the organization carries out board directives. Some of KOB's projects include: public education campaigns and advertisements, a newsletter, community visitations, awards and recognition programs, and an annual environmental conference. It also maintains an active K-12 education program<sup>56</sup>.



### 7.3 - INDUSTRY-SPONSORED COALITIONS AND PROGRAMS

A number of trade and industry associations maintain a high level of involvement in anti-litter campaigns, and other environmental programs that address roadside-litter as part of a larger program, or as a primary focus.

There are many examples of organizations that are supported primarily through membership dues and donations from trade associations and corporations. In Virginia, a non-profit organization, V.O.I.C.E., helps trade associations and corporations coordinate their own litter and recycling programs. VOICE receives 100% of its funding from donations from trade associations and corporations. Likewise, the Pennsylvania Resources Council, which receives its \$500,000 annual budget from member contributions and corporate sponsors, maintains a litter hotline and supports a variety of anti-litter, recycling, and beautification programs.

The Urban Litter Partnership is a joint effort of Keep America Beautiful (KAB), the U.S. Conference of Mayors, and a number of trade associations and industry sponsors<sup>57</sup>. This program focuses on gathering data on the causes and effects of littering in urban settings, and provides information on the best practices being employed to prevent it. The initial two-year project culminated in a National Litter Summit Conference in October 1999, hosted by the Florida Center for Solid and Hazardous Waste Management of the University of Florida. This level of involvement ensures the program gets the necessary visibility and momentum for neighborhood cleanup and community improvement programs. Sponsors of the Urban Litter Partnership include: the American Plastics Council, Grocery Manufacturers of America, Anheuser Busch Companies, McDonald's Corporation, EIA Foundation, National Soft Drink Association, Florida Center for Solid and Hazardous Waste Management, Philip Morris U.S.A, and Procter & Gamble.

The National Model Communities Program targeted six beach communities in the United States and Puerto Rico that were faced with particular kinds of marine debris problem. Pinellas County, Fla.; Pinones, Puerto Rico; Honolulu, Hawaii; San Francisco, California; Lake Charles, Louisiana; and Beaumont, Texas developed programs tailored to their specific problems. The primary sponsors of this effort were the American Plastics Council (APC), a trade association, and Center for Marine Conservation, a non-profit organization that is researching ways to identify effective methods to reduce marine litter through education and improved waste handling.





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## 8. SUMMARY

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Earlier sections of this report described a variety of tools that can be used to prevent or to clean up litter and illegally dumped material. A comprehensive approach to litter control and anti-dumping programs may combine several of the strategies described in the previous sections of this report. Successful programs are based on a solid understanding of the issues and problem including:

- 1) **Motivation or possible causes for littering or dumping.** Understand the profiles or characteristics of litterers and dumpers, and the possible forces behind littering and illegal dumping, such as lack of waste receptacles, landfill user fees, restrictions on curbside trash pickup, lack of effective recycling programs, and the locations of the most persistent littering or dumping problems.
- 2) **The players involved.** Identify the departments or agencies responsible for enforcing laws, ordinances, or regulations; other organizations involved, such as community groups or local industry; the level of coordination and communication among involved organizations; and the amount of information-sharing with other geographic areas
- 3) **Laws and ordinances.** Review the laws, ordinances, and regulations that address littering and illegal dumping, as well as issues related to adjudicating the subsequent cases. Identify barriers to enforcement, and to the prosecution of offenders.
- 4) **Past and on-going efforts.** Learn about existing programs or previous efforts to prevent illegal dumping, methods used to monitor or measure illegal dumping and any trends observed, previous or ongoing cleanup efforts, such as community volunteer cleanup days, and communication of antilittering and illegal dumping prevention efforts to the community
- 5) **Available resources.** Study sources of funding for previous or existing efforts to address littering and illegal dumping and additional resources needed to adequately address the problems

Successful anti-litter campaigns have reported anywhere from a 40% (Oklahoma) to 72% (Texas) reduction in litter during campaigns. The more successful litter control efforts seem to have a number of things in common, including:

- **Targeted Audiences.** The most successful litter control programs are those that focus on the most frequent users of a particular environment<sup>2</sup>; target a specific audience, but have a carryover effect to other audiences; and where practical, address the most prevalent types of litter.



- **A Simple Message.** Programs should be built around a clear, simple message to which the target audience can relate. The logo and tagline provide an identity for a program and communicate a simple, straightforward message— Don't Litter.
- **Public Education and Information.** The message communicated by the logo and tagline should be supported by information that will convince the audience to comply. These programs are only effective when the behavior of a target audience changes and that change is sustained over time. Effective programs follow that up with clear, relevant, and accurate information on the costs and consequences of littering and dumping.
- **Effective Outreach and Communication.** To be effective, the message must be communicated to the target audience. While most (if not all) campaigns continue to use traditional communications media (newspapers, TV and radio), several states aggressively use the Internet for outreach and education. Other media that can be used also include magazines, flyers, billboards, posters, wallet cards, and refrigerator magnets. Use of more than one media to disseminate information will ensure that the target audience receives the message.
- **Leadership and support by local officials.** Strong leadership and clear support by officials provide a clear message to the public, and to the agency staff who must implement litter control and anti-dumping programs.
- **Coordinated, Cooperative Efforts.** At any one time, complementary litter-control and recycling efforts may be underway by a number of agencies and organizations. Cooperation and coordination strengthens the message, and extends resources.
- **On-going Evaluation and Feedback.** Soliciting feedback on outreach and education efforts assists in continuation of current programs and development of future efforts. For example, callers to a 24-hour hotline can be asked how they heard about the system. The responses can be documented and evaluated to determine which advertising methods are reaching residents.



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APPENDIX A: LITTER SURVEY

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## UNIVERSITY OF MARYLAND

GLENN L. MARTIN INSTITUTE OF TECHNOLOGY • A. JAMES CLARK SCHOOL OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

March 26, 1999

Dear Maintenance Professional:

The Maryland State Highway Administration has requested that the University of Maryland conduct a state-of-practice study of "Highway Litter Control". We are concerned with the increasing cost of litter collection and disposal, which I understand is a trend, nationally. Attached is a very short survey form. Please take a few minutes to complete the form. We are particularly interested in what methods you have tried for litter collection/control; also what works for you and would you recommend it for others?

Please return the survey form as soon as possible (by April 30). The summarized data will be provided to all who respond to the survey. You may mail, fax or email your complete survey.

Sincerely yours,

A handwritten signature in cursive script that reads "Everett C. Carter".

Everett C. Carter  
Professor Emeritus  
Phone: 301-405-1950  
Fax: 301-405-2585  
Email: [ecarter@eng.umd.edu](mailto:ecarter@eng.umd.edu)

Enclosure

Name: \_\_\_\_\_

Tel: \_\_\_\_\_

Agency: \_\_\_\_\_

1. List types of forces used in roadside refuse cleaning programs and an estimated percent of total refuse picked up by each program:

	%	Satisfaction Level *				
Regular Maintenance forces	_____	1	2	3	4	5
Special temporary crews (Youth)	_____	1	2	3	4	5
Inmate Labor	_____	1	2	3	4	5
Adopt-a-Highway (Volunteer)	_____	1	2	3	4	5
Maintenance Provider Program	_____	1	2	3	4	5
Other Volunteer	_____	1	2	3	4	5
Contract	_____	1	2	3	4	5
Other (Explain) _____	_____	1	2	3	4	5

2. As a routine Maintenance activity, how would you describe litter and roadside debris as an activity for your Maintenance forces? It is:

A Major Work generator                       No Problem  
 A Planned Activity                                       Handled as Required  
 Infrequent, requires little attention

3. What is the estimated annual cost for the removal of roadside litter and debris by your Maintenance forces?

\$ \_\_\_\_\_ Annually                      \_\_\_\_\_ % of Total Maintenance Budget

4. Do you have dedicated maintenance staff for litter/debris pickup?  Yes  No

5. How many Maintenance staff are involved in your program on an average day for collection and disposal of roadside debris? \_\_\_\_\_

What percentage is this of your Maintenance force? \_\_\_\_\_

6. Considering Roadside Litter Removal as a routine maintenance activity, does your Maintenance Unit have problems associated with the following tasks:

Control of Amount of Debris along roads?                       Yes                       No  
 Collection and Removal of Debris?                                       Yes                       No  
 Disposal of Roadside Debris     Yes                       No

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

7. Have you initiated any programs to reduce litter? Please explain on back.

Please return to: Everett C. Carter  
 Dept. of Civil Engineering  
 University of Maryland  
 College Park, MD. 20742  
 Tel: 301-405-1950, Fax: 301-405-2585

\*1 = Very satisfied  
 2 = Satisfied  
 3 = Neutral  
 4 = Not satisfied  
 5 = Very dissatisfied

Name: \_\_\_\_\_  
Agency: \_\_\_\_\_

Tel: \_\_\_\_\_

1. List types of forces used in roadside refuse cleaning programs and an estimated percent of total refuse picked up by each program:

	%	Satisfaction Level *				
Regular Maintenance forces	_____	1	2	3	4	5
Special temporary crews (Youth)	_____	1	2	3	4	5
Inmate Labor	_____	1	2	3	4	5
Adopt-a-Highway (Volunteer)	_____	1	2	3	4	5
Maintenance Provider Program	_____	1	2	3	4	5
Other Volunteer	_____	1	2	3	4	5
Contract	_____	1	2	3	4	5
Other (Explain) _____	_____	1	2	3	4	5

2. As a routine Maintenance activity, how would you describe litter and roadside debris as an activity for your Maintenance forces? It is:

\_\_\_\_\_ A Major Work generator                      \_\_\_\_\_ No Problem  
\_\_\_\_\_ A Planned Activity                                      \_\_\_\_\_ Handled as Required  
\_\_\_\_\_ Infrequent, requires little attention

3. What is the estimated annual cost for the removal of roadside litter and debris by your Maintenance forces?

\$ \_\_\_\_\_ Annually                      \_\_\_\_\_ % of Total Maintenance Budget

4. Do you have dedicated maintenance staff for litter/debris pickup?    \_\_\_ Yes    \_\_\_ No

5. How many Maintenance staff are involved in your program on an average day for collection and disposal of roadside debris? \_\_\_\_\_

What percentage is this of your Maintenance force? \_\_\_\_\_

6. Considering Roadside Litter Removal as a routine maintenance activity, does your Maintenance Unit have problems associated with the following tasks:

Control of Amount of Debris along roads?    \_\_\_\_\_ Yes    \_\_\_\_\_ No  
Collection and Removal of Debris?            \_\_\_\_\_ Yes    \_\_\_\_\_ No  
Disposal of Roadside Debris                    \_\_\_\_\_ Yes    \_\_\_\_\_ No

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Have you initiated any programs to reduce litter? Please explain on back.

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5 = Very dissatisfied

Name: \_\_\_\_\_

Tel: \_\_\_\_\_

Agency: \_\_\_\_\_

- List types of forces used in roadside refuse cleaning programs and an estimated percent of total refuse picked up by each program:

	%	<u>Satisfaction Level *</u>				
		1	2	3	4	5
Regular Maintenance forces	_____	1	2	3	4	5
Special temporary crews (Youth)	_____	1	2	3	4	5
Inmate Labor	_____	1	2	3	4	5
Adopt-a-Highway (Volunteer)	_____	1	2	3	4	5
Maintenance Provider Program	_____	1	2	3	4	5
Other Volunteer	_____	1	2	3	4	5
Contract	_____	1	2	3	4	5
Other (Explain) _____	_____	1	2	3	4	5

- As a routine Maintenance activity, how would you describe litter and roadside debris as an activity for your Maintenance forces? It is:

A Major Work generator                       No Problem  
 A Planned Activity                                 Handled as Required  
 Infrequent, requires little attention

- What is the estimated annual cost for the removal of roadside litter and debris by your Maintenance forces?

\$ \_\_\_\_\_ Annually                      \_\_\_\_\_ % of Total Maintenance Budget

- Do you have dedicated maintenance staff for litter/debris pickup?  Yes  No

- How many Maintenance staff are involved in your program on an average day for collection and disposal of roadside debris? \_\_\_\_\_

What percentage is this of your Maintenance force? \_\_\_\_\_

- Considering Roadside Litter Removal as a routine maintenance activity, does your Maintenance Unit have problems associated with the following tasks:

Control of Amount of Debris along roads?     Yes     No  
 Collection and Removal of Debris?             Yes     No  
 Disposal of Roadside Debris                     Yes     No

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- Have you initiated any programs to reduce litter? Please explain on back.

Please return to: Everett C. Carter  
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- \*1 = Very satisfied
- 2 = Satisfied
- 3 = Neutral
- 4 = Not satisfied
- 5 = Very dissatisfied

Summary of Questionnaires for Litter Control

No.	State	1. Type of Forces														Comments		
		1) Maintenance Force	Satisfaction Level (S.L.)	2) Special Crew	S.L.	3) Inmate	S.L.	4) Adopt-a-Highway (Volunteer)	S.L.	5) Maintenance Provider Program	S.L.	6) Other Volunteer	S.L.	7) Contract	S.L.		Other	S.L.
1	Virginia	40	4			20	3	20	4					15	4	5	3	Local Jails (Community Service)
2	Colorado	27	2			3	2	70	3							0		
3	Nebraska	40	2					60	2									
4	Texas							10	2					70	2	20	2	Set Aside Agreement
5	Wyoming	40	2					50	2					10	2			
6	Maine	100	1															
7	Indiana	80	1			5	1	15	2									
8	Kansas	35	1					15	2							50	4	Litters not picked up on non-adopted HW
9	Minnesota	30	1					60	1							10	1	Sentence to Serve-Non-violent offenders to
10	Arkansas	?	2			?	2	?	2					?	2			
11	Oregon	5		70		10		15										
12	New York	unknown	3					unknown	3	unknown	3							
13	Kentucky	60	4			10	4	10	3									
14	WV	15	3			5	2	80	2									
15	Arizona	15	2			40	2	40	2	5	2							
16	North D	10	1	30	1	20	1	40	1									some doesn't get picked up
17	New J	50	2			40	3	10	2									
18	WA	2	2	1	2	5	2	90	3	2	3							
19	Ohio	20	3	5	2	30	1	10	2			5	2					
20	Oklahoma	60	3	5	3	5	2	5	3									
21	OK	10	2			60	2	10	4							20	2	workshops (Disadvantaged work program)
22	Nevada	74	2	2	2	14	1	5	2					5	2			
23	LA	33	2			16	1	1	2					50	2			
24	CA	15	4	10	4	40	4	35	5									
25	IL	60	4			29	4	10	4			1	4					
26	Florida	8	1	developing)		12	1							80	1			
27	CT	81	4			17	4	2	3									
28	NH	75	3					25	2									
		26/27		6/27		19/27		25/27		3/27		2/27		7/27		5/27		

Average	35.18		4.39		13.61		24.57		0.25		0.21		8.21		3.75			
	Maine 100%(1)		Oregon 70%		Ok 60%(2)		WA 90%(3)		Arizona 5%(2)		Ohio 5%(2)		Florida 80%(1)		Kansas 50%(4)		Litters on Non-Ad. H.W.	
	CT 81%(4)		CA 10%(4)		Arizona 40%(2)		WV 80%(2)		WA 2%(3)		IL 1%(4)		Texas 70%(2)		Texas 20%(2)		Set Aside Agree.	
	Indiana 80%(1)		Florida - Devel.		NJ 40%(3)		Colorado 70%(3)		New York 7%(3)				LA 50%(2)		OK 20%(2)		Sheltered Workshops	
	No: Texas				CA 40%(4)		Arkansas - ?					VA 15%(4)		MN 10%(1)		Community Service		
	Unknown - Arkansas						New York - ?					WY 10%(2)		VA 5%(3)		Community Service		
	- New York											Nevada 5%(2)						
												Arkansas 7%(2)						



Summary of Questionnaire for Litter Control

No.	State	2. Description of Routine Activities					3. Estimated Annual Cost by Maintenance Forces		4. Dedicated Maintenance Staff		5. Maintenance Staff	
		1) Major Work Generator	2) A Planned Activity	3) Handled as Required	4) No Problem	5) Infrequent, little attention	1) Annual Cost	2) Percentage of Total Maint. Budget	1) Yes	2) No	1) Number	2) Percentage of the force
1	Virginia	1	1	1			6,500,000	1		1	2	11
2	Colorado			1			3,000,000	2.7		1	20	1.3
3	Nebraska			1		1	125,000	5		1	only as needed	
4	Texas						0	0		1		
5	Wyoming			1			1,500,000	4		1	10	2
6	Maine		1				Don't compute this year			1	20-50	4
7	Indiana		1	1			940,000	1		1	35	2
8	Kansas			1			805,225	0.6		1	120	10
9	Minnesota			1			2,000,000			1	unknown	
10	Arkansas		1				2,189,114	2	1		49	2.5
11	Oregon			1			Not separated budget			1	80	6
12	New York	1					3,000,000	4		1	40(160000 hr/yr)	4
13	Kentucky		1				5,356,000	3.6		1	350	15
14	WV		1	1			1,500,000	1		1	35	1
15	Arizona		1	1			2,000,000	not answered		1	20	2
16	North D				1	1	Not tracking cost			1	minimal	
17	New J	1					5,000,000	7		1	10 ~ 50	4.5
18	WA	1					1,800,000	0.05		1	12	1
19	Ohio			1			2,000,000	not included		1	88	4
20	Oklahoma		1				125,000	3		1	4	4
21	OK			1			400,000	5		1	11	7
22	Nevada		1				1,843,000	4.3		1	27	6.3
23	LA	1					5,000,000	1	1		75	4.4
24	CA			1			25K?	3		1	various	no standard
25	IL	1	1	1	in urban area		8,600,000	6.5		1	100	8
26	Florida		1				9,500,000	3.5		1	n/a	n/a
27	CT			1			2,361,000	2.6		1	75	5
28	NH	1 (but in requ					1,000,000	2		1	?	?
	Average	6	12	15	2	2			2	26		
		21.4%	42.9%	53.6%	7.1%	7.1%			7.1%	92.9%	46.8	3.8

Summary of Questionnaires for Litter Control

No.	State	6. Problems with the tasks										7. Any Initiated Program	
		1) Control of Amount of Debris		2) Collection and Removal of Debris		3) Disposal of Roadside Debris		4) Comments		1) Program	2) Comments		
		Yes	No	Yes	No	Yes	No	Yes	No			Contents	
1	Virginia	1		1			1	1		proliferating in urban Area	Litter Initiatives		
2	Colorado	1			1		1		1		Adopt-a-Highway only		
3	Nebraska		1		1		1		1			off	
4	Texas		1		1		1	1		Contract & Agreement with disabilities		Sign Ads & T.V. Ad. By Celebrities	
5	Wyoming	1		1		1		1		Landfill & Transportation costs		Public Awareness through PSA's, billboards and bumper stickers	
6	Maine		1		1		1	1		Dump Site Difficulties			
7	Indiana	1		1		1		1		Intensive Trash Removal each spring for two weeks - "Trash Bash"			
8	Kansas	1		1			1		1	20% of routes are adopted		only adopted Highway	
9	Minnesota	1			1		1		1				
10	Arkansas	1		1		1			1			Occasional T.V. ad.	
11	Oregon	1			1		1		1		Stop Oregon Litter and Vandalism(SOLV)	Agreement with non-profit organization for it. (Campaign, develop & distribute material)	
12	New York	1				1			1				
13	Kentucky	1		1		1		1		Increasing cost at sanitary landfill	Signage stipulating a fine of \$500	Not effective	
14	WV	1		1		1		1		Resources/ Highway and Broadcasters Asso.			
15	Arizona	1		1		1			1				
16	North D							1		problem - motorists' discard		tried to increase fine to \$250 but failed	
17	New Jr	1		1			1	1		510 out of 600 are contracted out to FHWA	Adopt-A-Sponsor:5/99		
18	WA	1			1	1		1		Dump fees are very high; bring compactor trucks or trailers/ more travel time		Hot Spot Crews, Litter Study for Litter Generation Source	
19	Ohio	1		1			1	1		Litter Collection - by county forces during rain, dawn time; not very high priority			
20	Oklahoma	1		1		1		1		Money & Time for proper disposal			
21	OK	1		1		1		1		Dump fees are expensive. Scheduling to collect adopt-a-highway.		Participating in the ongoing statewide program, "Keep our land grand."	
22	Nevada	1		1		1		1		Time consuming, dumps only in selected areas			
23	LA	1		1		1		1		Limited landfill capacity, collecting large items(furniture and tires)		Work with state DEQ on a litter reduction educational program	
24	CA	1		1			1		1			KAB affiliate.	
25	IL	1		?	?		1	1		Deposited debris in urban area is problem. Short of manpower		Adopt-a-highway; mandatory Governing of Trash Hauling Trucks	
26	Florida	1		1		1		1		concentrating on flying projectiles			
27	CT		1		1	1			1		advertising and fines.		
28	NH	1		1		1			1			Interstates through Maintenance Campaignes and Sponsors - expect to begin June 1999	
Total # of State		23	4	17	8	15	12	17	11				
Average		82.1		60.7		53.6		60.7					



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APPENDIX B: STATE ADOPT-A-HIGHWAY PROGRAMS

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**State Adopt A-Highway Programs**

Adopt-A-Highway Programs	Slogan	Budget	Funding Source	AAH State Miles	Value from Adopt-a-highway	Volunteers	Website Address
<b>Arizona</b>							
California		6,000,000	CalTrans road maintenance fund		25,000,000		
Connecticut							<a href="http://www.dot.state.ct.us/adopt/aahp.html">http://www.dot.state.ct.us/adopt/aahp.html</a>
Florida							<a href="http://www.dot.state.fl.us/moreDOT/adopt.htm">http://www.dot.state.fl.us/moreDOT/adopt.htm</a>
Kentucky							<a href="http://www.kytc.state.ky.us/Education/Adopt/adopt_a_highway.htm">http://www.kytc.state.ky.us/Education/Adopt/adopt_a_highway.htm</a>
New Jersey		Not tracked separately.	NJ DOT no separate budget	985 miles (50% of state roads)		600 groups	<a href="http://www.state.nj.us/transportation/">http://www.state.nj.us/transportation/</a>
New York		Not tracked separately.	Funds from NY general fund admin by NYDOT	5,800 miles	\$980,000	2,200 groups	
North Carolina		250,000	Maint. Funds	12,337 of 78000		160,000 vol.	<a href="http://www.dot.state.nc.us/adopt-a-highway">www.dot.state.nc.us/adopt-a-highway</a>
Maryland	SWAT						<a href="http://www.sha.state.md.us/oc/adopt.htm">http://www.sha.state.md.us/oc/adopt.htm</a>
Michigan							<a href="http://www.mdot.state.mi.us/programs/adopt/">http://www.mdot.state.mi.us/programs/adopt/</a>
Missouri							<a href="http://www.modot.state.mo.us/">http://www.modot.state.mo.us/</a>
Mississippi							<a href="http://www.mdot.state.ms.us/works/envirom/aah_form.htm">http://www.mdot.state.ms.us/works/envirom/aah_form.htm</a>
Pennsylvania		\$300,000	License fees & gas tax	16,000 of 40,000			
Oklahoma	Oklahoma Trash-Off						<a href="http://www.mdot.state.mi.us/programs/adopt/">http://www.mdot.state.mi.us/programs/adopt/</a>
Ohio							<a href="http://www.dot.state.oh.us/dist11/adopt.htm">http://www.dot.state.oh.us/dist11/adopt.htm</a>
Texas	Don't Mess with Texas			9,000 miles	3.8 million	4,300 groups	<a href="http://www.txserve.org/cnctpts/state/a_hwy.html">http://www.txserve.org/cnctpts/state/a_hwy.html</a>
Utah	Don't Waste Utah						<a href="http://utah.citysearch.com/EV/SLCUT/0003/92/04...">http://utah.citysearch.com/EV/SLCUT/0003/92/04...</a>
West Virginia							
Washington		2,000,000	Gas tax			1,650 groups of 10	
Wisconsin	Treasure Wisconsin, Don't Trash It	1,000,000		97 % of state highways		39,315 vol in groups of 10 - 15.	<a href="http://www.dot.state.wi.us/dtid/bho/aahhome.html">http://www.dot.state.wi.us/dtid/bho/aahhome.html</a>
Wyoming	Spring Clean Fling						
Virginia							

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APPENDIX C: MARYLAND'S LITTER LAWS

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Md.Code Ann., Crim. Law (art. 27) Section 468(d) Litter Control Law

This section shall be known and may be cited as the "Litter Control Law".

(b) It is the intention of the legislature by this section to provide for uniform prohibition throughout the State of Maryland of any and all littering on public or private property, and to curb thereby the desecration of the beauty of the State and harm to the health, welfare and safety of its citizens caused by individuals who litter. However, to permit more active enforcement of littering prohibitions within a municipality, the legislative body of a municipality may prohibit littering, as does this section, and classify littering as a municipal infraction under Article 23A, § 3(b) of the Code.

(c) As used in this section the following words or phrases shall have the following meanings:

(1) The word "litter" means all rubbish, waste matter, refuse, garbage, trash, debris, dead animals or other discarded materials of every kind and description.

(2) The phrase "public or private property" means the right-of-way of any road or highway; any body of water or watercourse or the shores or beaches thereof; any park, parking facility, playground, public service company property or transmission line right-of-way, building, refuge or conservation or recreation area, any residential or farm properties, timberlands or forest.

(3) The word "person" means an individual, firm, sole proprietorship, partnership, corporation, limited liability company, or unincorporated association.

(4) The phrase "commercial purpose" means for the purpose of economic gain.

(5) "Bi-county agency" means:

(i) The Maryland-National Capital Park and Planning Commission; or

(ii) The Washington Suburban Sanitary Commission.

(d) (1) It shall be unlawful for any person or persons to dump, deposit, throw or leave, or to cause or permit the dumping, depositing, placing, throwing or leaving of litter on any public or private property in this State, or any waters in this State, unless:

(i) Such property is designated by the State or by any of its agencies or political subdivisions for the disposal of such litter, and such person is authorized by the proper public authority to use such property; or

(ii) Such litter is placed into a litter receptacle or container installed on such property.

(2) It shall be unlawful for any person or persons to throw, dump, or deposit any trash, junk, or other refuse upon any highway, or to perform any act which constitutes a violation of the State of Maryland's Vehicle Laws relative to putting trash, glass and other prohibited substances on highways.

(e) Any person violating the provisions of subsection (d) of this section shall be punished as follows:

(1) A person who dumps litter in violation of subsection (d) of this section in an amount not exceeding 100 pounds in weight or 27 cubic feet in volume and not for commercial purposes is guilty of a misdemeanor and is subject to a fine of not more than \$1,000, or

by imprisonment for not more than 30 days, or both.

(2) A person who dumps litter in violation of subsection (d) of this section in an amount exceeding 100 pounds in weight or 27 cubic feet in volume, but not exceeding 500 pounds in weight or 216 cubic feet in volume and not for commercial purposes is guilty of a misdemeanor and subject to a fine of not more than \$10,000 or imprisonment for not more than 1 year or both.

(3) A person who dumps litter in violation of subsection (d) of this section in an amount exceeding 500 pounds in weight or 216 cubic feet in volume or in any quantity for commercial purposes is guilty of a misdemeanor and subject to a fine of not more than \$25,000 or imprisonment for not more than 5 years or both.

(4) In addition to the sentences provided by this subsection, a court may order the violator to:

- (i) Remove or render harmless the litter dumped in violation of this section;
- (ii) Repair or restore property damaged by, or pay damages for, any damage arising out of dumping the litter in violation of this section;
- (iii) Perform public service relating to the removal of litter dumped in violation of this section or to the restoration of an area polluted by litter dumped in violation of subsection (d) of this section; or
- (iv) Reimburse the State, county, municipal corporation, or bi-county agency for any costs incurred by the State, county, municipal corporation, or bi-county agency in the removal of litter dumped in violation of subsection (d) of this section.

(f) Whenever litter is thrown, deposited, dropped or dumped from any motor vehicle, boat, airplane or other conveyance in violation of subsection (d) of this section, and if the vehicle, boat, airplane or other conveyance has two or more occupants and it cannot be determined which occupant is the violator, the owner of the vehicle, boat, airplane or other conveyance, if present, shall be presumed to be responsible for the violation; in the absence of the owner of the vehicle, boat, airplane or other conveyance, the operator shall be presumed to be responsible for the violation. Furthermore, licenses to operate such conveyances may be suspended for a period not to exceed seven days together with, or in lieu of, penalties provided in subsection (e) of this section.

(g) Notwithstanding any other provision of law, if the facts of any case in which a person is charged with violating this section are sufficient to prove that the person is responsible for the violation, it is not necessary that the owner of the property on which the violation allegedly occurred be present at any court proceeding regarding that case.

(h) All law-enforcement agencies, officers and officials of this State or any political subdivision thereof, or any enforcement agency, officer or any official of any commission of this State or any political subdivision thereof, are hereby authorized, empowered, and directed to enforce compliance with this section.

(i) All public authorities and agencies having supervision of properties of this State are authorized, empowered and instructed to establish and maintain receptacles for the deposit of litter at appropriate locations where such property is frequented by the public, and to post signs directing persons to such receptacles and serving notice of the provisions of this section, and to otherwise publicize the availability of litter receptacles and requirements of this section.

(j) (1) Fines collected for violations of this section shall be disbursed to:

(i) The county or city where the violation occurred; or

(ii) The bi-county agency, if the bi-county agency is the enforcement agency and the violations occurred on property over which the bi-county agency exercises jurisdiction.

(2) Fines collected shall be used to defray the expense of establishment and maintenance of receptacles and posting of signs as provided in subsection (i) of this section and for any other purposes relating to the removal or control of litter.

(k) (1) The Washington County Board of County Commissioners, by ordinance, may regulate recycling in the County.

(2) The ordinance authorized in paragraph (1) of this subsection may provide penalties for persons who place materials that are not recyclable into recycling bins.



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## APPENDIX D: REFERENCES AND RESOURCES

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- 20 Florida Center for Solid and Hazardous Waste Management, 1998 Florida Litter Survey, Florida Department of Environmental Protection, July 1998. (pg. 39). Report # 98-9. Available at:  
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