



The Florida Litter Study: 1998

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Conducted by

**FLORIDA CENTER FOR SOLID
AND HAZARDOUS WASTE MANAGEMENT**

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Gainesville, FL 32609

for

THE FLORIDA LEGISLATURE

and

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1. INTRODUCTION

Roadside litter surveys conducted in Florida between 1994 and 1997 showed that roadside litter is increasing statewide. A 1995 survey found that Florida boaters and anglers consider litter to be a major problem for Florida's waterways. Concern is rising about the negative consequences of unsightly litter in a state that depends heavily on the beauty of its natural environment to attract more than 43 million visitors each year from all over the world.

Florida is one of many states that recognize that resources expended to clean up litter could be better spent on more important services. Litter is especially undesirable in a state whose economy is heavily dependent upon tourism. Many Floridians live on or around the water, and the state's beaches, rivers and lakes attract many of the state's visitors. Litter on the ground often washes into nearby surface waters. The speed with which Florida's population is growing also lends urgency to the need for ongoing efforts to reduce and prevent littering throughout the state.

How can litter be reduced in Florida? How does litter affect Florida's economy and quality of life? What strategies have been successful in other states? These and other questions were the focus of a study conducted in 1997-98 by the Florida Center for Solid and Hazardous Waste Management. This report presents the findings of the study.

1.1 The Florida Litter Study

The importance of litter management in Florida was recognized in the 1980s after several other states reported success in reducing litter with volunteer cleanup programs and mass media campaigns. In 1993, the Florida Legislature established a goal of reducing litter by 50% statewide between 1994 and 1997. The Legislature directed the Florida Center for Solid and Hazardous Waste Management (the Center) to conduct annual litter surveys that could be used to measure progress toward that goal. The Legislature designated Keep Florida Beautiful, Inc. (KFB), a working public/private partnership, as the organization to coordinate Florida's efforts to reduce litter and marine debris.

The Legislature directed the Center to design a methodology that could be used to measure progress toward the litter reduction goal. The legislation required that a seven-member Advisory Committee be established to advise the Center on the design and implementation of the methodology. Members of the Advisory Committee represented business, industry, local government, and environmental interest groups. They met periodically with Center staff to provide input on the development and implementation of the methodology and to review the results of the annual studies.

Litter accumulates in many places, including residential neighborhoods, loading docks, areas around waste receptacles, construction sites, parking lots, vacant lots, roadsides and shorelines. Motorists, boaters, pedestrians and trucks carrying uncovered materials all contribute to the accumulation of litter. The Center chose to measure litter along roadsides because roadsides are a good collection point. The litter on roadsides is generally considered to be an

indicator of litter in the environment. Roadsides are relatively standard on a statewide basis and a statistically valid sampling program for roadsides was relatively easy to develop.

The Center conducted a baseline roadside litter survey in 1994. Surveys conducted in 1995 and 1996 indicated that the amount of litter on Florida's roadsides was not decreasing but was remaining fairly stable. In 1997, the survey indicated a statistically significant increase in the amount of large litter items found on Florida's roadsides. The estimated increase for 1994-1997 was 17% based on litter density, and 18% based on the total number of items.

After reviewing the results of the 1994-97 studies, the Florida Department of Environmental Protection (FDEP) recognized the need to expand the scope of the Center's survey research to include a survey of the economic impacts of litter. The Center developed a multi-pronged research project to examine:

- the costs of managing litter;
- the economic and social benefits associated with preventing litter;
- the importance of tourism and ecotourism to the state's economy; and
- successful litter prevention programs in other states

The Center anticipates that the results of this study will provide the FDEP and the Florida Legislature with needed information on successful, cost-effective litter prevention measures that would help to preserve and enhance Florida's economic and environmental well-being.

1.2 How This Report Is Organized

Chapter 2 presents background information on the litter issue, including national concerns and Florida concerns. A brief review of research on the psychological and social aspects of litter is also presented.

Chapter 3 examines the relationship between litter and neighborhood decline

Chapter 4 is a review of the economic impact of the tourism industry in Florida. Research on litter impacts associated with other industries is also presented.

Chapter 5 presents an overview of existing litter management programs in Florida. The chapter includes a summary of the results of a survey on litter management in Florida's counties. The complete results of the survey are presented in Appendix A.

Chapter 6 presents highlights of successful litter management strategies in other states.

Chapter 7 summarizes the findings and presents conclusions suggested by the findings.

Chapter 8 lists references cited within the report, as well as the names and contact

information for many of the individuals who provided assistance to the Center by telephone, fax, mail and e-mail.

Appendix A presents the results of the county survey and includes a copy of the survey form that was sent to each of the 67 counties in the state.

2. LITTER: DEFINING THE PROBLEM

Since the 1970s, litter has been considered a social behavior problem and an educational problem that needs to be solved (Andres, 1993). For at least the past three decades, researchers have sought answers to the questions of who litters and why, and what can be done to change littering behavior. Many studies have focused on the factors leading to behavioral change, while others have focused on attitudinal changes.

Litter has been defined as "misplaced solid waste" and includes items as small as a cigarette butt tossed from a car window or as large as a rusting, abandoned car (Geller, 1982). Litter can be hazardous in several ways:

- Safety hazard: People are killed and injured each year when vehicles strike or swerve to avoid litter on highways.
- Fire hazard: Fires started in rubbish and litter destroy homes every day. Litter feeds building fires, and one-third of all forest fires are attributed to the burning of trash and debris.
- Health hazard: Litter spreads disease and breeds rats, roaches, flies and mosquitoes.
- Hazard to animals: Litter causes injury and death for wildlife, birds, fish and domestic animals.

This chapter presents a brief summary of the social and psychological research on littering behavior. The chapter also presents highlights from major national studies on the problem of roadside litter as well as information on other types of litter, including tire debris, marine debris, and urban litter.

2.1 Who litters and why?

Research conducted in 1968 for Keep America Beautiful, Inc. identified specific demographic variables related to littering. Among the findings was that twice as many males litter as females, and that adults under the age of 35 are twice as likely to litter as people aged 35-49, and three times more likely to litter than people over 50.

Much of the research conducted during the past 30 years supports those conclusions. A successful mass media campaign in Texas that targets young males has been widely acclaimed for its ability to dramatically reduce roadside litter. However, some researchers have found different results. In a series of studies involving the distribution of handbills to 18,000 supermarket shoppers, Geller et al. (1976; 1977) found that littering rates were similar for males and females. Geller et al. (1982) suggests that everyone is a potential litterer in certain situations, and therefore, it is most cost effective to focus on decreasing littering by the most frequent users of any particular environment.

Researchers who reviewed 54 studies on various environmental behavior-change

strategies found that while many of the strategies were effective in producing environmental behavior changes, the changes were short-term and followup data was insufficient to draw conclusions about behavior over longer periods of time (Dwyer et al., 1993). The researchers suggested that more emphasis should be placed on the development of "lifelong behaviors." Geller et al. (1982) suggested that many studies are merely demonstration projects designed to evaluate behavior under specific short-term conditions.

Huffman et al. (1995) reviewed 59 studies that focused on littering as a specific environmental behavior. One group of studies suggests that both the availability and visibility of trash receptacles influenced appropriate disposal (Huffman et al., 1995). In one study, cigarette litter decreased in relation to the number of ashtrays outside of a college classroom building (Cope et al., 1993).

Among the studies reviewed were several that suggested that littering is more likely to occur in areas where litter is already present than in areas that are clean. The studies suggest that the most effective way to reduce litter is to remove existing litter (Huffman et al., 1995). Cialdini et al. (1990) suggested that people litter in places where litter is present because of the perceived acceptability of littering where others have already done so. The presence of only two pieces of litter can lead a person to conclude that "everyone litters here" (Cialdini et al., 1990).

2.2 How big is the roadside litter problem?

Although roadsides are only one of many types of places where litter tends to accumulate, published litter surveys generally focus on roadside litter. Surveys of state transportation agencies in all 50 states found that highway maintenance engineers and the public view roadside litter as a major problem (Andres, 1993; Andres and Andres, 1994). Those studies, conducted for the National Research Council's Transportation Research Board, concluded that despite steady increases in efforts by volunteers, civic groups, educational groups, and corporations, there is much that needs to be done to prevent litter and to reduce the costs of managing litter (Andres, 1993; Andres and Andres, 1994). The study found that:

- Roadside litter collection and disposal costs in the United States exceeded \$131 million in 1993.
- Litter collection and disposal requires intensive use of road maintenance employees at the expense of other activities.
- State transportation agencies spend an average of 3.3% of their total maintenance budgets on roadside litter and debris programs.
- Police enforcement is not considered to be an effective deterrent to littering.
- Volunteerism is increasing as an assistance program for roadside litter collection.
- The Adopt-a-Highway program has achieved national recognition as the most effective volunteer program benefitting road maintenance operations.
- Anti-littering education programs and public media campaigns are very successful

approaches to litter prevention.

- Litter can best be fought through public education.

2.3 Tires

The Center's roadside litter surveys conducted in Florida from 1994-97 found that vehicle and tire debris was the most common litter item on the state's roadsides (FCSHWM, 1997). Rubber from a single tire can be found over a distance of 5 to 10 miles. Between 1993 and 96, the number of annual accidents caused by tire debris in Florida rose from 648 to 931.

Truckers and highway safety officials are continually debating over the role of retread tires. A spokesman for the Florida Department of Transportation's Motor Carrier Compliance office said that retread tires are the most likely source of tire debris on the state's roads. However, industry sources, such as the Tire Retread Information Bureau (TRIB) say that new and retread truck tires fail only 1% of the time if properly maintained, and that retread tires are as safe as newly manufactured tires. Underinflated tires, speeding for long distances, or overweight loads create heat and friction that will split a new tire just as quickly as a retread. Most truck tires are not designed to sustain speeds of more than 65 mph for long periods, even under normal driving conditions (Schuster, 1998).

The Florida Trucking Association and TRIB claim that the condition of tires is the most effective way to prevent tire debris on the road (Pooser, 1998). TRIB is producing labels as part of a program to help eliminate tire debris on the highways. The labels say, "For better tire maintenance, put the gauge to the tire. Don't thump 'em, pump 'em." The idea is to encourage drivers to properly check tire pressure (Brodsky, 1996).

Speed limits can affect tires. Many things happen to a tire as the speed of a vehicle increases. The current Tire and Rim Association tables are based on a maximum speed of 65 mph (Bridgestone/Firestone, Inc., 1997). As the speed of a vehicle increases, eight changes occur with respect to the tire: heat increases, the heat ages the rubber, fuel economy is reduced, irregular wear increases, maintenance costs increase, tire durability decreases, the footprint of tire changes, and damage probability increases (Bridgestone/Firestone, Inc., 1997).

If a tire is underinflated, there are additional risks: durability decreases, sidewall flexing (deflection) increases, deflection weakens steel cords, and deflection generates heat. Heat increases with speed, and as the heat continues to increase, the tire gets closer to the point where it is no longer suitable for service (Bridgestone/Firestone, Inc., 1997).

Some sources say that most of the tire debris on the highway is due to nail punctures, and that the problem is not generally related to manufacturing or retreading defects (Brodsky, 1996). In addition to underinflation and overheating, overloading, and mismatching of tires on dual-wheel positions are the other common causes of tire debris on the roads. These occur as a result of improper maintenance and inspection procedures (Brodsky, 1998). Statistics compiled by the U.S. Department of Transportation show that nearly all the tires involved in any tire-related accidents are underinflated or bald (TRIB, 1998).

2.4 Marine Litter and Debris

A telephone survey was conducted in 1995 for FDEP's Division of Marine Resources. The study focused on the attitudes and beliefs of people who spend time around saltwater on a regular basis: licensed saltwater anglers, registered boaters, and members of the general population. A total of 1413 Florida residents completed the survey (Duda and Young, 1995).

Questions ranged from awareness of saltwater resources and opinions about the performance of the appropriate environmental division, to respondents' saltwater fishing experiences and their opinions regarding fishing and boating issues. Litter was mentioned in response to some of the questions. Responses to a question about the most important problems affecting Florida's marine resources revealed that:

- Among the general population respondents and registered boaters, litter on the beach or in the water was identified as the third most important problem. The two most important problems were water pollution from agriculture and from industry.
- Among the licensed saltwater anglers, litter on the beach or in the water ranked as the fourth most important problem, behind water pollution from agriculture and from industry, and commercial overfishing.

When all three groups were asked open-ended questions such as, "What are the most important actions that a citizen can take to help conserve Florida's saltwater resources?", litter was mentioned several times within each group, with licensed saltwater anglers mentioning litter more than the other two groups.

2.5 The Problem of Urban Litter

Litter is a serious concern to urban communities throughout the United States because it indicates that citizens do not take pride in the places where they live, work, and play (KAB, 1998). At the 1997 Annual Meeting of the U.S. Conference of Mayors, which represents 1100 mayors in the nation's largest cities, litter was a major topic of discussion. Many mayors now believe that reducing litter can help to reduce some of the more serious social consequences of urban blight (KAB, 1998).

In 1998, KAB and the U.S. Conference of Mayors joined forces to seek answers to the litter issue. These two organizations shared the recognition that despite years of concern about the appearance of inner cities, and despite billions of dollars invested in urban renewal, progress has been hindered by the continuing presence of litter in urban neighborhoods (KAB, 1998). During 1998-99, KAB, USCOM, and the USCOM's Municipal Waste Management Association plan to study and report on urban litter prevention techniques, programs and costs in cities with populations over 100,000.

3. LITTER AND NEIGHBORHOOD DECLINE

Research conducted during the past 20 years has shown that the presence of litter in a neighborhood has an effect on the way residents perceive their neighborhood's safety. Concern is rising nationwide over how the physical environment affects the social environment, according to the Bureau of Justice Assistance, an agency within the U.S. Department of Justice (BJA, 1993).

3.1 Literature Review

Litter is one of several environmental cues associated with neighborhood decline (Perkins, 1992; Greenberg, 1986). Litter is a physical "symbol of disorder" or "incivility," along with vandalism, dilapidated or abandoned housing, and dirty vacant lots (Skogan, 1990; Perkins et al., 1992; Hunter, 1978). Litter-strewn streets, abandoned automobiles, or vacant houses provide places for drug dealers to hide their wares, giving criminals protection from the police and from possible rivals (BJA, 1993). A well-maintained neighborhood, on the other hand, is likely to send a message to would-be-offenders that criminal behavior will not be tolerated (BJA, 1993).

Wesley Skogan, the author of a widely acclaimed book called Decline and Disorder: Crime and the Spiral of Decay in American Neighborhoods (1990), found that people identify the incidence of crime with environmental cues. His research indicates that physical and social disorder correlate very strongly. He has described the process by which disorder creates negative changes within a community. First, disorder can disable a community's formula for controlling local activities. Second, disorder increases concern about safety and may increase the probability that crime will occur. Third, escalating levels of disorder have a negative impact on the housing market (Skogan, 1990). An increase in the number of physical symbols of disorder creates a self-reinforcing downward spiral: residents' perceptions of neighborhood problems increase, potential offenders are encouraged, and criminals from adjoining areas are attracted to the neighborhood (Hunter, 1978; Wilson & Kelling, 1982; Skogan, 1990; Green & Taylor, 1988).

Wilson and Kelling (1982) described the downward spiral of neighborhood decline theory as the "broken windows" theory. The theory suggests that if an element of disorder, such as a broken window, is not quickly repaired, a contagion effect will occur. In other words, all the windows will soon be broken:

[O]ne unrepaired broken window is a signal that no one cares, so breaking more windows costs nothing Untended property becomes fair game for people out for fun or plunder.... We suggest that "untended" behavior also leads to the breakdown of community controls (Wilson & Kelling, 1982, p. 31).

This theory may be applied to other elements of disorder such as litter, graffiti, vandalism and abandonment. Concurring research indicated that "litter begets littering" (Geller, 1980). Cialdini et al. (1990) found that individuals who encounter a perfectly clean environment tend to avoid littering in it, but once litter is introduced, an individual's reluctance to litter within a setting begins to deteriorate steadily. They conclude that a fully littered natural setting is unquestionably a descriptive norm favoring littering (Cialdini et al., 1990).

Although a cause-and-effect relationship between crime and social disorder has not been established as an absolute, various studies suggest that a correlation exists. Skogan (1990) suggests that there are “root solutions” for problems that may differ from their “root causes.” Skogan (1990) further suggests that pursuing multiple strategies concurrently is likely to be the best method for addressing the most significant problems. Psychologists have recommended that programs designed to combat crime and its associated problems approach the issue from all angles (Milan & Long, 1980). However, crime prevention consistently focuses on crime rate reduction (Tilley, 1992). What has occurred over the past three decades is not a reduction, but a somewhat steady increase in crime rates (Davidson, 1993).

It has been suggested that actually achieving a reduction in crime may not be feasible, but reducing the fear of crime might be an alternative valuable goal (Davidson, 1993). Small-scale community improvement projects have been observed to use less resources and are often easier to implement (Davidson, 1993). The scale of prevention through litter reduction, for example, would focus on what has been termed “primary prevention,” defined as prevention that focuses on the environments in which crimes occur (Jeffery, 1977).

Several researchers have examined the connection between the presence of litter in an urban neighborhood and residents’ perceptions about the neighborhood. Perkins et al. (1992) surveyed eight residents on each of 50 blocks in an urban Baltimore neighborhood. A 30-40 minute survey asked residents to assess block problems, including the presence of litter, on a three-point scale: “a big problem,” “somewhat of a problem,” or “not a problem.” The physical incivilities assessed included litter, vandalism/graffiti, dilapidated vacant lots, abandoned buildings, non-resident graffiti and young males “hanging out.” Of the physical incivilities assessed, litter had the strongest correlation with perceptions of neighborhood decline and disorder. On blocks with more litter, residents had higher perceptions of harassment in the street, loitering teens, people fighting in the street, and people selling drugs. In a previous study, Perkins et al. (1990) found objectively measured litter to be related not only to crime and fear, but also to a lessened sense of community, informal social control, and block satisfaction.

A study by DeFrances and Titus (1994) provides support for the conclusions of Perkins and his colleagues. The results suggest that environmental variables, such as litter, are likely to be a factor in the “burglar decision-making process” (DeFrances & Titus, 1994). The “burglar decision-making process” involves reading the environment in order to assess whether or not a crime target is likely to be a successful or unsuccessful one (Bennett & Wright, 1984; BJA, 1993).

De Frances and Titus looked at four signs of “neighborhood disorder”: litter, broken windows, graffiti and boarded up buildings. They found that neighborhood disorder had a statistically significant and consistent relationship with burglary outcome. The results suggest that household burglaries are more likely to be completed in neighborhoods with higher levels of disorder than in neighborhoods with lower levels of disorder, and that disorder is likely to affect target selection and entry.

Some researchers suggest that “crime is shaped by the means used to control it” (Cusson, 1994). An action can qualify as a social control if it has the potential to inhibit crime and is useful to those who want to prevent crime (Cusson, 1994). The correlation between neighborhood disorder and burglary outcome implies that crime may be reduced by improving a neighborhood’s environment (DeFrances & Titus, 1994).

An example of the successful management of crime through environmental design can be found in the Washington, D.C., subway system, known as the “Metro.” Initiatives were undertaken in the Metro to manage crime through environmental design. Strict standards of maintenance and enforcement were initially established and have been rigidly upheld. Police officers respond immediately to “quality of life” violations such as vandalism, litter, and graffiti; offenders are fined or arrested. Many trash receptacles and recycling bins are strategically placed throughout each station, making compliance and responsible disposal easy for patrons. In a statistical study comparing the crime rates for the Washington, D.C. Metro and the Metropolitan Atlanta Rapid Transit Authority (MARTA), the Metro’s crime rates were significantly lower (LaVigne, 1997). Washington’s success in maintaining low subway crime rates suggests that the environment can be manipulated to reduce criminal opportunities (LaVigne, 1997).

Neighborhood disorder also has a negative impact on property values and housing markets (Skogan, 1990). Reduced property values can result from even the perception that a residential area is dangerous, contributing to a community’s downward spiral (Davidson, 1993). In fact, it has been suggested that although actual crimes do have a negative impact on property values, the direct impact comes from the perceptions, fears, and opinions about crime (Miller, 1981).

Miller (1981) describes the five continuous stages in the downward spiral of a community. He suggests that once a neighborhood has reached the fifth stage of community and economic decline, the neighborhood will have to battle extremely high odds against its revitalization.

1. Crime is perceived by neighborhood residents;
2. Resident fear ensues and compounds as it is observed by other residents and nonresidents;
3. Potential buyers and appraisers observe the fear which results in the weakening of the neighborhood real estate market;
4. Investment money available to the neighborhood becomes scarce as lenders become wary of the crime-induced instability of the neighborhood real estate market;
5. Neighborhood vitality is increasingly undermined as crime, unstable real estate values, and the scarcity of investment capital combine with other aspects of neighborhood decline.

In summary, litter has been shown to affect the way residents perceive their neighborhood, the probability that more littering will occur, the likelihood of successful residential burglary, and community decline. The literature the Center has reviewed clearly supports the widely held belief that there is a correlation between the presence of litter and a community’s quality of life.

3.2 Litter Cleanups and Community Improvement

The Bradley Community Project, Inc. (BCP, Inc.) was a six-year effort to eliminate litter in a small Florida community of 450 residents. Bradley is located in Polk County, approximately

30 miles south of Lakeland. The project relied on code enforcement, grants, and local volunteer labor to bring about a community transformation. The results included an overall community cleanup, a new community park and playground, a new community center and newfound community pride. The project received the 1997 Keep Florida Beautiful Board of Directors Award (Palmer, 1997).

Frankie Smith, secretary of Keep Polk County Clean & Beautiful and president of BCP, Inc., said that there had been a continuous visible need for improvement within the community. The residents faced several problems: drug dealing in abandoned buildings, weekly gang wars for establishment of territory, and lack of law enforcement (Smith, 1997).

About half of Bradley's residents have actively participated in BCP, Inc. The goal was to rid Bradley of out-of-town drug dealers through these cleanups, and the plan has had great success. Leaders in the community chose to address local drug problems directly by involving the families and youth in the cleanup activities. BFI donated large waste containers for use in the organized cleanups, and continues to supply the community with two containers for permanent use. Proper disposal of waste has been a problem for many low income residents of Bradley, and the containers have made a noticeable change (Smith, 1997).

Funding for the Bradley Community Project, Inc. came from federal and corporate sources. One of the principal sponsors was IMC-Agrico, a phosphate mining company based in Polk County. The company is a subsidiary of IMC-Worldwide. IMC-Agrico works with local communities to set up Community Advisory Panels (CAPs) with 12 members who meet monthly to discuss ideas for neighborhood revitalization and quality of life issues. The CAPs work on promoting community change through residents' efforts (Jackson, 1998).

Additional support came from Cargill Fertilizer, a local church, and a local business owner who provided food for litter cleanup volunteers. Suntrust Bank of Mulberry donated a building to be used as a Community Center. The building was renovated and the Community Center opened in November 1997. Operational funding was secured through two annual fundraisers.

Ms. Smith believes that education was the key to the Bradley Project's success. Before the project began, many residents were unaware of litter codes, and there was no law enforcement officer based in Bradley. Through BCP, Inc., a building was renovated to create an office for a full-time law enforcement officer to aid the residents in the community revitalization process. Community education was facilitated further when IMC-Agrico became an Adopt-A-Highway sponsor. Four times a year, company employees and other Bradley residents clean up the highways that previously had become increasingly unsightly. IMC-Agrico provides refreshments for volunteers.

Ms. Smith reported that there has been a 100% improvement in the quality of life in Bradley, Florida. Youth morale has improved largely due to the availability of a local park that includes a play area renovated with the help of IMC-Agrico. BCP, Inc. not only works to improve aesthetic value, but has also provided aid to those who simply cannot help themselves or the community. On the whole, Bradley has become a safer more enjoyable place to live.

The neighborhood improvements accomplished in Bradley, Florida, are typical of the

improvements achieved in similar projects throughout the United States. Revitalization of the Sabin neighborhood in northeast Portland, Oregon, was accomplished through community efforts to stop the downward spiral of social disorder. The neighborhood, once known as a “war zone” where outsiders would come to dump their garbage, is now known as a neighborhood with a sense of community pride and strength (Day, 1995). The Sabin revitalization efforts have been recognized through several awards, including the 1994 Neighborhoods USA “Neighborhood of the Year.” The Sabin Community Association also won the 1993 “Spirit of Portland” Mayor’s Award for being the best neighborhood in the city (Day, 1995).

One Sabin resident said that in the momentum of the revitalization efforts, the once-plagued inner-city neighborhood has become an exciting place to live (Day, 1995). The city of Portland recently allocated \$30,000 to administer “neighborhood livability plans” which include affordable housing, revitalization, youth activity, public safety and aesthetics operations. Grassroots efforts included a mobile block watch and neighborhood greening. A Spring Cleanup is conducted each year. Efforts included transforming a corner lot that had attracted garbage, abandoned cars, and loitering people into a community garden. Free waste containers and waste disposal services have been provided to the entire neighborhood.

Supporters of Sabin’s revitalization efforts included the Sabin Community Development Corporation (CDC), Sabin Community Association, Sabin’s United Neighbors (SUN), Oregon Parks Bureau, AmeriCorps, Friends of Trees, Pacific Power & Light, Ojotuntun, and Maranatha Church. Organizations like Save Oregon from Litter and Vandalism (S.O.L.V.) and the Neighborhood Partnership Fund provided various community project grants and financial support.

4. THE IMPACT OF LITTER ON FLORIDA'S ECONOMY

4.1 Tourism

The importance of tourism to Florida's economy is undisputed. Approximately 600 million tourists travel each year, and global travel spending is expected to grow fivefold during the next 20 years (New York Times, 1998). The Center's review of statistics from a wide variety of sources confirmed that Florida holds a prominent place among global tourist destinations.

Satisfaction with tourist attractions is important because it enhances repeat visits and positive word-of-mouth promotion (Dunn Ross & Iso-Ahola, 1991; Rollins & Chambers, 1990). Displacement of visitors or shifts in site visitation could affect the economic contribution that tourism makes to a local economy (Roehl & Ditton, 1993).

Research on litter and tourism indicates that the presence of litter is the least acceptable form of interference with individuals' recreation experience (Ruddell & Gramann, 1994; Roggenbuck, Williams & Watson, 1993; Hammitt & McDonald, 1983; Noe, Hammitt & Bixler, 1997). While local visitors may adapt to degraded conditions, visitors on vacation may be more sensitive and more demanding of a quality environment because their behavior is discretionary and substitutes are available (Loundsbury & Hoopes; Roehl & Ditton, 1993). In other words, tourists who have an unpleasant experience are likely to choose a different destination on their next trip. Roehl and Ditton (1993) reported that at Padre Island National Seashore in Texas, where the beaches receive a substantial amount of debris from offshore gas and oil operations, the number of annual recreational visits declined by 12% from 1985 to 1989.

Two studies that surveyed wilderness visitors on the influence of 19 social and physical conditions found that litter interfered more seriously with their wilderness experience than any other condition. Those conditions included damaged trees, vegetation loss, and various disturbances from nearby human activities, including rowdiness, drunkenness and loud radios (Ruddell & Gramann, 1994; Roggenbuck, Williams & Watson, 1993).

A survey of 971 visitors to three national parks in the southeastern United States compared the impacts of litter, erosion, commercial development, traffic congestion and crowding. The results indicated that litter was the least acceptable of the conditions (Noe, Hammitt & Bixler, 1997). In another study of rafters and innertube floaters in three national parks in the southeast, excessive litter in the water and along the riverbanks were identified as significant concerns (Hammitt et al., 1996).

Based on experts' predictions of continued growth in global tourism, Florida has a significant stake in remaining a destination of choice. The following facts support the conclusion that Florida would have much to gain by becoming an even more attractive destination:

- Florida ranked second among U.S. states in 1995 in total domestic and international traveler spending with a total of \$42.9 billion dollars (TIA, 1998).
- The average visitor to Florida spends \$75 per day in the state, and for every 55

visitors, one job is created (FTA, 1997).

- About 47 million people visited Florida in 1997, a 5% increase over 1996 (Visit Florida, 1998).
- Miami and Orlando were two of the top five U.S. cities visited by international travelers in 1995 (TIA, 1998).
- Nearly half of Florida's tourists visited a state or national park area in 1996 (EHTAC, 1997).
- In 1997, Florida was the top choice as American travelers' preferred winter destination for the six straight year (TIA, 1997).
- Annually, \$37 billion in taxable spending is generated by tourists in Florida, and 85% of Florida's visitors do repeat business in the Sunshine State according to the Florida Attractions Association (Ross, 1998).
- The tourism industry directly employs 820,900 people in Florida (Visit Florida, April 1998).

The Florida Tourism Association is a not-for-profit organization formed to represent and unify the various state entities involved with the tourism industry. FTA members include attractions, rental car companies, hotels, motels, and government agencies. FTA's mission is to explain to residents the value of tourism to the state's economy. The economic impact of tourism fuels the amenities that Floridians enjoy (Ross, 1998). According to the FTA, one out of eight Floridians is directly employed in the tourism industry (excluding agricultural employment). Tourists contribute 20% of the state's annual sales tax revenues.

Further evidence of the tourism industry's importance can be found in the enormous amount of money that Florida spends annually to promote the state as a destination. Florida ranked fourth among U.S. states in tourism promotion in fiscal year 1996-97 with expenditures of \$23 million (TIA, 1998).

The primary entity responsible for promoting tourism is the Florida Tourism Industry Marketing Corporation, doing business as "VISIT FLORIDA" under the direction of the Florida Commission on Tourism. In 1996, the Florida Legislature approved the creation of a public/private partnership between the Commission and the state. Florida's governor oversees the Commission and acts as its chairperson. The Commission is responsible for managing and fulfilling the directives and goals established by the Office of Tourism, Trade and Economic Development. VISIT FLORIDA implements the marketing strategies designed by the Commission. VISIT FLORIDA receives approximately \$20 million annually from a \$2 per day rental car surcharge.

Tables 4.1 presents statistics compiled by the FTA. The tables demonstrate the economic benefits of tourism-related industries in Florida.

Table 4.1 Tourism-Related Employment in Florida, 1997

TOURISM-RELATED EMPLOYMENT IN FLORIDA, 1997	
Eating and Drinking Establishments	444,300
Hotels and Lodging	146,600
Amusements and Recreation	137,700
Air Transportation	70,900

Source: Tourism Fast Facts, Florida Tourism Association (1998).

4.2 Ecotourism and Heritage Tourism

The ecotourism industry has developed into a worldwide movement to conserve natural resources through and for tourism (EHTAC, 1997). The increasing popularity of ecotourism has made it a significant contributor to local economies.

In 1996, the Florida Legislature directed the Florida Commission on Tourism to create an Ecotourism/Heritage Tourism Advisory Committee (EHTAC). The Legislature charged the Committee with developing a plan to protect and promote all of the natural, coastal, historical, cultural and commercial tourism assets of the state.

The Committee defined ecotourism as:

“responsible travel to natural areas which conserves the environment and sustains the well-being of local people while providing a quality experience that connects the visitor to nature” (EHTAC, 1997).

The Committee defined heritage tourism as:

“responsible travel to historic and cultural sites that educates the community and visitors by providing a quality experience” (EHTAC, 1997).

Committee members represented Florida’s water management districts, the Florida Game

and Fresh Water Fish Commission, FDEP, the Florida Department of Community Affairs, the Florida Department of State, the Florida Department of Agriculture and Consumer Services, Florida Seminole Tourism, the U.S.D.A. Forest Service, visitor and convention bureaus, attractions, and nonprofit organizations. The Committee worked with the staffs of the Florida Tourism Industry Marketing Corporation/VISIT FLORIDA and FDEP's Division of Recreation and Parks to compile the recommendations that were included in the Committee's report.

The Committee found that ecotourism is the largest growing sector of world tourism, and it is growing at about 30% per year. The Committee's report identified several specific economic contributions made by ecotourism and heritage tourism in Florida:

- More than 6 million people visit Florida art museums annually.
- The economic value of ecotourism and heritage tourism through the arts in Metro Dade County creates an economic impact of more than \$200 million annually.
- Nearly half of Florida's estimated 43 million tourists visited a state or national park area in 1996.

Table 4.2 presents the Committee's findings with regard to the economic benefit of various ecotourism activities.

Table 4.2 Florida Ecotourism / Heritage Tourism Impacts

FLORIDA ECOTOURISM / HERITAGE TOURISM IMPACTS		
TOURISM ACTIVITY	ANNUAL ECONOMIC BENEFIT	# OF FULL-TIME RELATED JOBS
Florida State Park Visitation	\$201,000,000	6,000
Beach Visitation (21.6 million tourists)	\$15,400,000,000	359,450
Canoe Liveries (70 statewide)	\$38,500,000	N/A
Bird-Watching and Non-Consumptive Bird Use	\$477,000,000	N/A
Historic Visitation	\$796,000,000	15,740
Cultural Industry	\$1,100,000,000	800,000

Source: Report of the Ecotourism/Heritage Tourism Advisory Committee (1997).

4.3 Other Industries

The Center made numerous contacts with a wide variety of trade groups and industry associations in an effort to gather data on the economic impact of litter on private sector businesses in Florida. Through this effort, it became apparent that business and industry groups generally do not maintain records of expenses on litter management, nor do they have information available on the litter prevention or litter management programs of their members. This section briefly summarizes the Center's efforts to obtain information from business and industry groups.

Florida Restaurant Association: This association did not have any information on litter programs or restaurants' costs associated with litter management.

Florida Association of RV Parks and Campgrounds: The Center reviewed a report from this association regarding the revenues generated by members. The report includes no information on members' expenses for litter management. The association does not have any information on the costs of litter or programs to abate litter within the industry.

Florida Hotel and Motel Association: This association did not have information on programs directly related to litter. Members are involved in several recycling programs and recycling projects. The association donates supplies and assists in designing the

recycling programs. They have also conducted recycling seminars at their annual conference and at trade shows.

McDonald's Corp.: A local store manager contacted in Gainesville was not aware of a corporate or franchise program concerning litter management. McDonald's recycles cardboard, food and grease. The manager said that approximately \$200 is spent per month on landscaping, which includes litter pickup. The stores do not keep track of costs specifically related to litter. A marketing representative at the Florida Franchise Office stated that no information is available on litter costs or abatement programs.

Burger King Corp.: Several people at Burger King's corporate offices in Miami were contacted. None were aware of industry litter programs or litter costs, nor did they provide the Center with the names of anyone who could provide information about litter programs within the fast food industry. These representatives said they were not aware of any department in the company that would deal with litter abatement and costs.

Florida Malls and Associations: The Center contacted Florida mall managers and a mall trade association but was unable to obtain any information on litter management programs or costs. The Oaks Mall in Gainesville did not have any knowledge of litter programs or of any costs associated with litter management or abatement. The Center received information on waste management from the International Council of Shopping Centers but no information relating to litter management and abatement programs was included. The Council was not aware of anyone who would have information on the costs of managing litter at malls and did not know whether such information existed.

Convenience Stores: A lobbyist for the Florida Petroleum Council was not aware of any litter programs within the convenience store industry. Litter abatement expenditures are not tracked. A representative of the Florida Petroleum Marketing Council told the Center that the Council did not have any information that would be pertinent.

5. MANAGING LITTER IN FLORIDA

5.1 Keep Florida Beautiful, Inc.

The Florida Legislature established Keep Florida Beautiful, Inc. (KFB) in 1988 as a working environmental public/private partnership to coordinate Florida's litter program and to assist in implementing Florida's Solid Waste Management Act. The Legislature directed KFB to coordinate Florida's litter prevention efforts through the implementation of a statewide campaign and volunteer-based grassroots programs.

KFB is a state affiliate of Keep America Beautiful Systems (KABS) and serves as the umbrella organization for volunteer-based community KABS programs. The 53 members of KFB's Board of Directors represent business and industry, environmental organizations, civic groups and local governments. KFB's logo is the official litter control symbol for the state. To maintain continuity for statewide programs, all local programs receiving state funds for litter are required to use the KFB logo or campaign materials developed by KFB.

As of June 30, 1998, there were 37 KABS affiliates implementing grassroots programs throughout Florida. KFB provides ongoing support to the community-based affiliates, including informational briefings, training, program development, and professional growth. In 1997, KFB received Keep America Beautiful's National First Place Award for the best state program, in recognition of its efforts which made Florida the fastest growing state affiliate.

Florida's KAB programs represent the grassroots foundation of KFB's activities. They involve approximately 150,000 volunteers in a wide variety of grassroots litter prevention programs. For each dollar invested by state and local government, Florida's KAB programs provide \$7.09 in value through volunteer hours, cash contributions, and in-kind contributions.

Funding for KFB comes from membership and sponsorship contributions and state grants. In fiscal year 1996-97, KFB generated a total of \$2.3 million in in-kind contributions, and \$88,000 was received from membership contributions. Major corporate supporters include the American Plastics Council, Anheuser-Busch, Inc., AT&T, Coca-Cola Enterprises, Pepsi-Cola Company, Publix Super Markets, Inc., Republic Industries, and Waste Management, Inc.-Florida Group. More than 70 other businesses and associations provided support and in-kind contributions.

KFB coordinates the annual Great Florida Cleanup, a statewide effort that involves thousands of volunteers and saves the state hundreds of thousands of dollars in avoided litter cleanup costs. In 1998, KFB joined forces with First Brands Corporation, the maker of GLAD Bags, and the event became known as the GLAD Bag-a-Thon/Great Florida Cleanup. The GLAD Bag-a-Thon is America's largest litter cleanup event; more than 1.2 million volunteers participate annually in more than 100 cities. Florida was one of three states selected to participate in a first-ever statewide GLAD Bag-a-Thon.

The number of volunteers participating in the annual Great Florida Cleanup has increased steadily, more than doubling between 1996 and 1998. More than 51,000 volunteers participated in the 1998 GLAD Bag-a-Thon/Great Florida Cleanup. This represented an approximate 40% increase in volunteer participation above 1997's record of 31,000 participants.

With the support of Publix Super Markets and the GLAD Bag-a-Thon, KFB, in cooperation with Florida's KAB programs, was in a position to provide any volunteer or any group of volunteers with materials to help clean up their communities. In addition, through the George Jenkins Foundation, a cash incentive package was developed to further recognize community-based programs. Examples of materials provided for the GLAD Bag-a-Thon/Great Florida Cleanup included:

- 140,000 trash bags for collecting litter
- 500,000 car litter bags
- banners
- caps for volunteers
- posters, press kits and promotional materials
- funding for radio advertisements
- training for local coordinators

Other organizations that are partners in the Great Florida Cleanup include Adopt-A-Highway, Adopt-A-Shore, Florida Park Service, Florida Community College System, AT&T Cares Employee Programs, and various SCUBA Dive Clubs.

Other KFB activities include:

■ Environmental Citizenship Program / "Florida, Love It or Lose It"

KFB was instrumental in launching a statewide program to build a stronger sense of community and state identity through the civic actions of visitors and residents. The program was officially launched by Florida Lieutenant Governor Buddy MacKay and the FDEP in April 1997. The campaign's goals were to:

- increase awareness of environmental citizenship;
- educate Floridians about how they can conserve Florida's environment; and
- increase community public service volunteerism in Florida.

The "Florida, Love It or Lose It" campaign, funded by FDEP, included a series of television, radio, billboard, and print ads featuring three university football coaches encouraging Floridians to be environmental citizens and "join the team." The coaches were Bobby Bowden (Florida State University), Billy Joe (Florida A&M University), and Steve Spurrier (University of Florida). Other ads focused on Florida's unique environment and directed viewers, listeners and readers to the Florida "ENVIRO-LINE" toll-free telephone number (800-828-9338) for information about ongoing public service programs.

■ ENVIRO-LINE

The ENVIRO-LINE is sponsored by AT&T and provides communities throughout Florida with a way to inform callers about volunteer opportunities in their own counties. The ENVIRO-LINE provides volunteer information on the GLAD Bag-A-Thon/Great Florida Cleanup and also directs callers to the Adopt-A-Highway program

sponsored by the Florida Department of Transportation and to programs sponsored by the FDEP's Division of Parks and Recreation.

- Adopt-A-Shore Program and Florida Coastal Clean-Up

KFB coordinates the statewide Adopt-A-Shore program which helps to educate citizens and visitors about litter prevention by providing opportunities to adopt and clean up shoreline areas. Adopting groups commit to cleaning up the shoreline a minimum of three times per year. In 1997 there were 32 local Adopt-A-Shore coordinators and approximately 300 adopting groups which include a variety of businesses and civic and environmental organizations.

Adopt-A-Shore groups, local KAB affiliates, and hundreds of other grassroots groups and sponsors participate in the annual Florida Coastal Clean-Up, which is coordinated by the Center for Marine Conservation. In 1997, a total of more than 33,000 volunteers participated in the Florida Coastal Clean-Up.

- St. Johns River Celebration

KAB affiliates in 14 counties participate in the annual St. Johns River Celebration and River Cleanup, sponsored by the St. Johns River Water Management District. In 1998, the cleanup's third year, more than 6,000 volunteers removed 200 tons of litter and debris from the St. Johns River.

- Statewide Campaign

Despite its status as the fastest-growing KAB state affiliate, KFB has faced obstacles in its mission to develop and implement a statewide mass media campaign aimed at preventing and reducing litter. For several years, KFB requested \$2 million from the Legislature to fund the mass media campaign. No funding was appropriated in 1995, 1996, 1997 or 1998.

The statewide campaign is based on the "Don't Mess With Texas" model which reduced roadside litter by 72% and saved the Texas Department of Transportation a net \$4.1 million in roadside cleanup costs. Many leading business, civic, government, and environmental organizations had agreed to participate in the Florida campaign. KFB has stated that it is unlikely that significant progress toward the Legislature's litter reduction goal can be achieved in the absence of adequate funding.

5.2 Adopt-a-Highway Program

Since its inception in 1990, Florida's Adopt-A-Highway program has been very successful in reducing the costs of litter removal and improving the appearance of roadsides throughout Florida. Volunteers groups enter into a two-year agreement with the Florida Department of Transportation (FDOT), during which they agree to remove litter at regularly scheduled intervals. The objective of the Adopt-A-Highway program is to educate volunteers on the importance of solid waste management by giving them hands on experience in litter prevention as well as

controlling and reducing litter in the adopted sections.

Volunteers agree to:

- “Adopt” a two-mile section of a highway’
- Dedicate two years to the program
- Follow specified FDOT safety regulations
- Remove litter a minimum of four times each year.

FDOT agrees to:

- Assist with safety meetings
- Provide safety vests and litter bags
- Pick up litter at specified locations
- Post Adopt-A-Highway signs with the group’s name at the beginning and end of the group’s section.

In 1996, the Adopt-A-Highway program represented provided an economic benefit of \$1,288,000 to the state. A total of 2,951 miles were adopted by 1,364 groups and 20,460 volunteers participated in cleanups.

5.3 Adopt-a-River Program

The Adopt-A-River program has been active for more than six years in cleaning up North Florida’s waterways. The program operates on an annual budget of \$40,000 and has one full-time employee and one part-time employee. In 1997, 70% of the budget came from county contracts. This is one way counties spend their litter grant money. Approximately 20% of the funds came from government agencies such as the Suwannee River Water Management District, and the remaining 10% came from private donations from businesses and individuals.

The group meets twice a month to remove litter from the waterways in the Suwannee River Basin and has a mission to preserve and protect the rivers’ water quality and prevent further degradation. In 1997, Adopt-A-River volunteers collected more than eight tons of trash from the Suwannee River Basin. All collected trash is sorted for recyclables, weighed, recorded and disposed of properly. Adopt-A-River teaches volunteers about the potential for contamination between surface and ground water. The program aims to protect the state’s waterways by instilling awareness about the impacts of litter.

5.4 Florida’s Litter Law

Under the Florida Litter Law (403.413, Florida Statutes), it is illegal to dump litter, regardless of amount and how it is being dumped, unless authorized by law or a permit. The law defines “litter” as:

“any garbage; rubbish; trash; refuse; can; bottle; box; container; paper; tobacco product; tire; appliance; mechanical equipment or part; building or construction material; tool; machinery; wood; motor vehicle or motor vehicle part; vessel;

aircraft; farm machinery or equipment; sludge from a waste treatment facility, water supply treatment plant, or air pollution control facility; or substance in any form resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations.”

The term “dump” applies to:

all actions of “dumping, throwing, discarding, placing, depositing, or disposing of” litter.

Dumping is prohibited on public lands, roadways, and water bodies. In addition, littering cannot occur on private property unless the owner has given consent or if the owner can prove it will not be a public nuisance and will not violate any other state or local laws or regulations. If dumping does occur, penalties vary depending on the type and quantity of material discarded:

- Non-commercial dumping of less than 15 pounds or 27 cubic feet: The violator pays a civil fine of \$50 and the court decides if the violator will pick up litter or perform another labor task equal in severity to their offense.
- Non-commercial dumping between 15 pounds or 27 cubic feet and 500 pounds or 100 cubic feet: The violator is guilty of a misdemeanor of the first degree, and must pick up litter or perform some other community service task. If a motor vehicle is involved, 3 points will be assessed on the violator’s license.

- Dumping exceeding 500 pounds or 100 cubic feet, any amount of dumping for commercial purposes, or dumping of hazardous wastes: The violator is guilty of a felony of the third degree. The court may order the violator to:
 - 1) remove litter or make it harmless;
 - 2) repair or restore property damage or pay for the damages;
 - 3) perform public service to remove litter or restore a littered area.

Defendants must prove they had authority to dump and that the dumping did not cause a public nuisance. A defendant in a criminal trial cannot contest any issue in a subsequent civil action. If a person sustains damages in a felony case, the violator must pay the injured party three times the cost of damages or \$200 (the higher of the two options), and must also pay the injured party's court and attorney fees.

If litter is dumped from a vehicle or boat, the owner and/or operator is held responsible for the act. Dumping that occurs from a commercial vehicle is assumed to be dumped for commercial purposes. Any motor vehicle, vessel, aircraft, container, crane, winch, or machine used for dumping materials weighing more than 500 pounds is considered contraband and is subject to forfeiture.

County and city employees responsible for enforcing codes and ordinances may be given authority, by their governing body, to enforce the provisions of the Florida Litter Law. However, this does not permit these employees the authority to bear arms or make arrests. All law enforcement officers have the duty to enforce the provisions of the Florida Litter Law. For employees that are not law enforcement officers, the appropriate governing body determines the training standards for enforcing these provisions. In addition, this law does not limit state and local agencies from enforcing other laws regarding litter and solid waste management.

Enforcement of environmental crime, including littering and illegal dumping, is expanding in Florida. The Center spoke with several Florida law enforcement officials active in investigating littering and illegal dumping on the county and state levels.

5.4.1 Enforcement at the County Level

Random acts of littering tend to be difficult to enforce unless they are witnessed. Single littered items provide insufficient evidence as to who littered. Often, the primary focus is large-scale illegal disposal or dumping because those types of crimes usually result in higher cleanup costs.

Enforcement at the county level is increasingly active. Many counties in Florida have full-time officers specifically assigned to enforce environmental crime laws. Many use unmarked cars and dress in plain clothes. In 36 counties, law enforcement officials participate in regional workgroup meetings each month to discuss current issues in their respective regions. County representatives share information on current investigations as well as anticipated problems. Through these meetings, enforcement officials try to stay a step ahead of the violators.

Enforcement of litter laws ranges from citing someone for intentionally littering a small

number of items to arrests made for large-scale illegal disposal. Local enforcement officials do not handle all cases. Some types of cases are more pertinent to the county's codes enforcement department or FDEP regulators. County enforcement officials primarily use the Florida Litter Law for enforcement. County ordinances often are only a misdemeanor carrying minimum jail time and varying levels of fines. It is mostly used for minor acts of littering and for littering acts in progress.

From a criminal's standpoint, a large-scale illegal dumping operation can be quite lucrative. A survey after Hurricane Andrew identified illegal disposal as the second largest crime in the region. Most environmental crime cases relate to solid waste. The solid waste stream is the vehicle for dumping various types of materials including hazardous and chemical wastes and construction debris.

The investigation of environmental crimes usually does not stop repeat offenders, who often move to areas where there is less enforcement, such as a neighboring county. When law enforcement officials start cracking down on environmental crimes in one county, they frequently receive calls from colleagues in surrounding counties reporting increased problems. The surrounding counties often ask for help in setting up similar enforcement programs. The result has been increased cooperation between neighboring counties.

Florida law enforcement officials report that the key to good enforcement is to get everybody to work together. Center researchers interviewed several officers who stated that it takes a combined effort to fight environmental crimes effectively because different approaches have different effects on people. Many officers believe that both criminal and civil enforcement are needed, along with the types of educational activities conducted by Keep Florida Beautiful, Inc. and similar organizations. Some people are more responsive to a criminal enforcement approach, while others respond more to civil penalties or educational efforts.

5.4.2 Enforcement at the State Level

The FDEP's Division of Law Enforcement is responsible for the statewide enforcement of environmental crime laws. Enforcement involves a cooperative effort between several agencies, such as county and state agencies, the U.S. Environmental Protection Agency, and the Federal Bureau of Investigations.

In recent years, investigators have had to split their time between dumping and littering crimes and other types of crimes. In 1998, the Division of Law Enforcement was planning to hire 15 additional investigators to handle littering and illegal dumping cases. Some cases can be resolved within 48-72 hours, while others may last from a week to two years, depending on the case. Longer-term cases often involve land-clearing debris, construction debris, hazardous wastes, tire haulers, or waste oil haulers that have to be watched for a period of time before they are caught. The officers say violators are motivated by the large amounts of money that can be made by illegally dumping those materials.

Most people that commit environmental crimes are not career criminals, according to state law enforcement officials. For many, “once is enough,” and a misdemeanor conviction can be as effective as a felony conviction. There are serious disincentives that result from a criminal conviction, such as loss of reputation, loss of ability to get loans, losing the privilege to carry firearms, and in the case of a corporation, loss of the financial stability of the company. Plea bargains and pre-trial intervention are often an alternative offered to people who are not likely to be repeat offenders.

In most cases, the violator cleans up the dumped material after a judgment is obtained. In other cases, investigators can get the violator to clean up without obtaining a judgment. If the violator does not clean up a site, the solid waste department or road department often carries the burden of cleaning up a littered area. With chemical cases on public right of ways, the Bureau of Emergency Response performs the cleanup.

About half of all litter law investigations go to completion, which means that a judgment is obtained. Investigators say that litter cases are often as much luck as good police work. If investigators can't find a witness to the crime or an address to get a starting point, they often have trouble solving a case.

5.5 Florida's Litter and Marine Debris Grant Program

For the fiscal year 1996-97, Florida awarded grants to counties through the Litter and Marine Debris Grant Program, administered by the FDEP. The funds available through this reimbursement program totaled \$1 million. Counties applied for and were reimbursed a total of about \$877,000, leaving \$123,000 in the fund.

Counties are given two options for spending litter grant monies:

- (1) 100% of the grant award may be spent on operating costs associated with the education and prevention programs listed on the application. These costs include rent, telephone, utilities, salaries and benefits, postage, office equipment and supplies, program materials and marketing.
- (2) The grant award may be divided so that 35% is used for operating costs and projects to assist local governments with the removal of litter and debris, and the remaining 65% of the grant shall be used to fund education and prevention programs.

The education and prevention programs listed on the grant application are described below:

- The Great Florida Cleanup promotes environmental stewardship, education

concerning the effects of litter, and proper waste handling. The event is held in the month of April in support of Earth Day.

- Adopt-a-Shore coordinates public/private partnerships that maintain coastal cleanups through volunteer efforts. Educational materials focus on marine debris and its effects on water quality.
- Adopt-a-Road/Adopt-A-Street are county and city programs, respectively. These programs encourage volunteers to adopt segments of a road or street. The volunteers are educated on litter prevention and are encouraged to regularly pick up litter on their adopted segments.
- Trash Troopers is a program that coordinates volunteer litter patrol officers.
- Boater's and Angler's Pledge is a program that educates boaters and anglers about preventing litter and marine debris while they are on or around bodies of water.
- Storm Drain Stenciling involves volunteer efforts to stencil anti-litter messages on storm drains. The focus is to educate citizens about the direct connections between storm drains and waterways.
- Clean Builders Program is a program directed at builders and contractors. Those involved in the program follow guidelines for cleanliness, waste reduction and recycling. Participants receive recognition for their efforts.
- Xeriscape/Beautification is a program that addresses litter prevention through beautification. The program encourages beautification through landscaping practices that benefit the environment.
- Adopt-a-Tree is a public/private partnership that uses funds generated by tree sales to finance trees for public plantings.
- Bag it on Buses is a program that can be instituted on school buses and public transportation vehicles. Litter receptacles with plastic liners are located on the buses and maintained by volunteers or clubs. The program educates the public about proper waste disposal.

On the litter grant application, each county indicates the programs for which it intends to use grant funds. For the 1996-97 applications, the percentages of counties seeking funds for each program were as follows:

Adopt-A-Road/Street	66%
The Great Florida Cleanup	65%
Adopt-A-Shore	54%
Xeriscape/Beautification	40%
Boater's and Angler's Pledge	35%
Clean Builders Program	23%
Trash Troopers	20%
Adopt-A-Tree	18%
Storm Drain Stenciling	11%
Bag It on Busses	9%

Counties can also receive reimbursement for programs other than those listed on the grant application. Funds also can be used for a variety of enforcement activities, improvement activities, waste management, and Keep America Beautiful affiliation startup expenses. Below are some examples of county programs funded by the grants include:

- The Trash Trooper program implemented by Keep Alachua County Beautiful (KACB) involves about 60 “troopers” who patrol the streets. When they witness acts of littering or uncovered truck loads, they record the information on “tickets” that are handed in to KACB. Offenders receive a warning letter with information about litter laws and penalties. Repeat offenders are reported to county and city code enforcement officials for prosecution (Sundin, 1998).
- Escambia County used litter grant funds for the “Litter Leprechaun” program and the “Litter Barrel Run” program, which involves contractual agreements by Escambia County to service 91 trash barrels in 47 locations throughout the county.
- Jackson County used grant funds for a service agreement with a waste hauler in neighboring Bay County for the maintenance of waste containers with KFB logos on them.
- Manatee County funded Xeriscape/Beautification through their Adopt-a-Spot program.
- Pinellas County uses grant funds to maintain a litter patrol along the county’s beaches and intercoastal waterways.

In some counties, several organizations work together on litter education efforts. Polk County manages litter through the combined efforts of Keep Polk County Beautiful, Keep Winter Haven Clean and Beautiful, and Lakeland Clean and Beautiful. In Wakulla County, litter education is conducted by Keep Wakulla County Beautiful, Wakulla County Litter Control Unit,

5.6 A Survey of Florida Counties

The Center developed a survey for Florida counties that was designed to collect data on programs and costs for managing litter at the county level. The three-page survey was sent to a contact person in each county who had been identified previously, through a series of telephone calls, as a person knowledgeable about the county's litter management programs. The county contact person was identified initially from contacts listed in FDEP's Annual Solid Waste Management Report (FDEP, 1997). During phone conversations, Center staff explained the purpose of the survey. Responses were generally quite positive and the people contacted said they would respond when they received the survey.

During the process of drafting the survey, Center researchers reviewed the Litter and Marine Debris Grant files for fiscal year 1996-97 at the offices of FDEP in Tallahassee. The litter grant files provided the Center with helpful information about the litter abatement programs the counties administer and the costs associated with those programs.

A copy of the survey form is included in Appendix A. The survey was pretested with six counties and then distributed to the rest of the counties via fax or overnight delivery. Included with the survey was a copy of each county's litter grant reimbursement information for 1996-97. The package included a cover letter explaining the purpose of the survey and asking the county contact to mail or fax the answers back to the Center.

The research team began making follow-up calls a few days after sending out the surveys to verify that they had been received. Numerous additional calls were made to remind and encourage people to respond to the survey.

While some of the responses received were complete, many had information missing for some questions. Additional calls were made in an attempt to obtain as much information as possible from each county. In some cases, contacts provided the names of other people within the county who could answer some of the questions. Despite numerous calls to county road departments, county clerks, enforcement agencies, county jails, etc., the Center was unable to obtain complete information for some counties.

The responses received were entered into a database. This allowed the Center to summarize and analyze the data. Surveys were received from 43 counties (42 counties plus New Rivers Solid Waste Association which represents three counties), for a 66% response rate.

The complete results of the survey are attached in Appendix A.

5.7 Profile of a KAB Affiliate: Brevard County

Brevard County has a very active KAB affiliate, Keep Brevard Beautiful (KBB). In 1996 KBB won the Keep Florida Beautiful Award for the best overall affiliate in Florida. KBB's budget for fiscal year 1996-97 was \$186,442, with almost half of the funding coming from Brevard County (KBB, 1997). Support also came from others in the public sector and about 100 businesses and individuals. For every dollar of local, state or other government support, KBB produces a return of \$5.59 to the community.

KBB's programs focus on four primary areas of interest: beautification, education, litter control and recycling. Between the interest areas there are 16 programs and numerous special projects, events and awards. In 1996-97, KBB awarded more than 137 prizes, grants and certificates of recognition. One of the year's objectives was to involve middle school, high school and college students in programs that would fulfill the state's environmental education requirements. One of the programs KBB conducted was an Eco-Trek Summit, a one-day interactive program for middle school students and teachers.

Brevard County enforces a county litter control ordinance that is based on the Florida Litter law. The ordinance prohibits public littering or nuisance and makes unlawful the disposal, removal, scattering, and accumulation of litter and debris except in accordance with this ordinance. The ordinance specifies protection of public or private lands and water bodies. Accumulation of solid waste, litter or clean debris is described in two ways. First, it is prohibited unless accumulated on-site, in waste containers, and between regular collection days. Second, it is prohibited from accumulation in such a manner that allows the area to become infested, threatens public health, or adversely affects economic viability.

The ordinance also covers littering from vehicles carrying solid waste. Vehicles must be constructed or loaded in such a way that "prevents its load from dropping, leaking, blowing, falling, sifting," or escaping from the vehicle. Loads must be closely fit, covered and secured with a tarpaulin or the like. Owners, lessees, and operators, jointly and severally, are responsible for the cleaning and costs of damage incurred by material discharged from the vehicle.

6. STRATEGIES FOR REDUCING AND PREVENTING LITTER IN OTHER STATES

The Center made numerous contacts with people in other states who are involved in litter prevention, management, cleanup and education. Many were very helpful in providing the Center with information about their states' programs.

6.1 MEDIA CAMPAIGNS

The media campaigns reviewed for this project had several characteristics in common:

- Slogans start with the word “Don’t.”
- Funding comes from a state’s Department of Transportation or Department of Environmental Protection.
- Ads use a creative, “offbeat” approach to convey their message.
- Ads target a specific audience and have a carryover effect with other audiences.
- Ads are entertaining, memorable, and popular.
- Campaigns continue for more than one year.

This section presents a summary of several innovative programs and campaigns that have been conducted in the United States.

6.1.1 Texas: “Don’t Mess With Texas”

When Texas developed its legendary “Don’t Mess with Texas” campaign in the late 1980s, the campaign set a new standard as a highly creative and innovative advertising approach for reaching a specific target audience. A wide variety of television and radio ads targeted white males in the 18-34 age group. The targeting was based on research that showed that white males in the 18-34 group, who drove pickup trucks, were the primary source of roadside litter, followed by Hispanic males in the same age group.

The Texas ads deliver a very direct message: It’s not okay to mess with Texas, so don’t do it. The ads convey that littering is not cool, not “macho,” and not socially acceptable. The ads have remained popular for more than 10 years, and the slogan is widely recognized and is commonly seen in many places such as coffee mugs, t-shirts, bumper stickers and billboards.

The television ads feature many world-reknoned Texan performers such as Willie Nelson, Jerry Jeff Walker, and Lyle Lovett, as well as numerous other Texan singers and groups. Each of the different songs performed in the ads delivers the “Don’t Mess With Texas” message in a different way.

One ad features a group of bikers in a pool hall who, upon learning of a littering incident (“They’ve been messing with us again!”), go out on their bikes and “ride.” The next scene shows the tough-looking bikers cleaning up litter on an “Adopt-A-Highway” site. Another ad features a sea monster who emerges from the ocean, takes a look at a litter-strewn beach, and dives back in. A narrator then says: “If we don’t stop trashing our beaches, pretty soon no one’s gonna want to come and visit.”

Some ads appeal especially to sports fans. Boxer George Foreman appears in one ad as a preacher, and has the church choir join him in a resounding chorus of “Don’t Mess With Texas.” Another ad shows two wrestlers engaged in an intense wrestling match, with one of them on the floor being wrestled by the other, for most of the 30-second ad, before a narrator says: “It’s hard to believe what some folks will do when they catch someone messing with Texas highways.”

Texas reported that a year after the campaign began, roadside litter was reduced by 72%. Litter reductions in subsequent years continued but were less dramatic. The campaign, which was originally funded at \$2 million annually, has been credited with saving the Texas Department of Transportation \$4 million annually on litter pickup costs. In 1997, funding was cut to \$1.5 million, which substantially reduced the amount of air time that could be obtained for television and radio ads. Texas DOT staff had some concerns that the reduction in advertising would have an impact on the future effectiveness of the campaign.

6.1.2 Utah: “Don’t Waste Utah”

Utah’s Department of Transportation (UDOT) developed the “Don’t Waste Utah” campaign in 1989 based on the research conducted in Texas. Soon after the television ads started running, UDOT road crews reported that litter was reduced by about 40%.

The campaign targeted young male drivers between 18 and 24 and created a hero figure who would make appearances at elementary and middle schools to bring the message to children before they were old enough to drive. The hero, played by a handsome Mel Gibson look-alike, was based on the Mad Max character in the “Road Warrior” movies. Utah chose its slogan to appeal to young people who sometimes used the word “wasted” to refer to a drunken or drugged state (Roche, Deseret News, 3/30/89).

The ads were filmed on roadsides and showcased the state’s scenic beauty. The actor drives a rebuilt ‘69 Chevy like the one in the movies and had a canine sidekick. When the campaign was launched, the media featured pictures of Utah’s governor driving the Chevy around the Capitol grounds. Numerous other media reports during the first year of the campaign focused

on the actor, the dog, the modification of the car, and the ads' offbeat approach. Between 1989 and 1996, publicity included:

- 92 television stories and radio interviews;
- 197 newspaper and magazine articles;
- 483 personal appearances by the campaign's actor, who was accompanied by the dog and the car.

The campaign began with a three-year commitment of \$450,000 and continued to receive between \$150,000 and \$200,000 in subsequent years. The funds came from the same budget that paid for litter pickup. UDOT took the position that it was "a better investment to educate litterers out of their habit than to go around just picking up after them" (Salt Lake Tribune, 5/2/89). Utah, with a population of under 2 million people, was spending \$500,000 yearly on picking up litter.

Costs varied from year to year depending on television production costs, research needs, and inventory of collateral materials, such as posters, bus signs, and bumper. Startup expenses included purchasing and modifying the car. A typical year's budget might include:

Media	\$75,000
Public Relations	\$55,000
TV Production	\$45,000
Collateral Materials	\$10,000
<u>Contingency</u>	<u>\$ 5,000</u>
Total	\$190,000

The advertising agency that created the campaign donated its creative time and account management fees. Television stations initially ran two spots for the price of one, and one year they ran three spots for the price of one. All of the ads were shown during prime time. Bruce Jensen, managing director of the ad agency, told the Center that \$200,000 would not be enough money today to do what Utah did because of the higher cost of television spots.

After four months, UDOT called the campaign "the most successful campaign yet to tackle Utah's litter problem," after 53% of Utahns polled in a random survey indicated they were aware of the ads. (Salt Lake Tribune, 9/4/89). After four years, a survey showed that:

- 87% of Utahns were familiar with the campaign.
- 91% were aware of the campaign's sister program, Adopt-A-Highway.
- 75% believed "Don't Waste Utah" and "Adopt-A-Highway" were effective programs that had significantly reduced roadside litter throughout the state.

After seven years, UDOT discontinued the campaign due to the startup of major roadwork in preparation for the Winter Olympics to be held in Park City in 2002. Based on the accounts of the campaign's tremendous success, it is likely that the "Don't Waste Utah" message will not fade quickly from Utahns' minds.

6.1.3 Pennsylvania: "Don't Be A Litterbug"

Pennsylvania's Department of Environmental Protection (PDEP) began their "Don't Be a Litterbug" campaign because they wanted to prevent litter and create an educational program which did not involve fines. The program started in March 1997 after more than a year of planning. The \$600,000 annual budget comes from a \$2 tipping fee on all landfills and incinerators. The funds are deposited into a recycling fund which was created in 1988.

The campaign has reestablished the once famous "Litterbug" from the 1950's. The program features public service announcements explaining how litter affects the environment and a toll-free hotline that anyone can call to report the sighting of someone littering. This campaign also distributes litter prevention kits that include a litter bag, information on how to use the litterbug hotline, a litterbug resource directory and additional information on the litterbug.

The Pennsylvania Resources Council (PRC) owns the trademark for the Litterbug. The nonprofit citizens' action organization has been active since 1939 and strives to protect Pennsylvania by fighting litter and visual pollution. The PRC is funded by a \$500,000 budget that comes entirely from member contributions and corporate sponsors. PRC gave PDEP the right to use their image for free as long as the bug was not misused.

The litter hotline is monitored by PRC and received more than 7,000 calls during its first year. Approximately 60% of the calls are tobacco-related, more than 15% involve packaging materials, and 5% involve beverage containers. Any Pennsylvania citizen may report a litterer to the hotline. PRC asks for the litterer's tag number, a description of the car, where the littering took place, and any other additional information. PRC also asks for the caller's name, address and phone number. To reduce fictitious calls, PRC calls the callers back to verify the reports, and then sends the callers a letter thanking them for their help. PRC considers the call to be legitimate if the letter does not come back marked, "return to sender." PRC then sends a letter to the litterer that explains the effects of litter on Pennsylvania's economy. PRC also sends a litter bag for the car. It takes about six weeks from the time a littering incident is first reported until PRC's package goes out to the litterer.

6.1.4 Evansville, Indiana: "Don't Mess My Town, Clown"

In 1995, Evansville began to notice that litter was becoming a serious problem. Operation City Beautiful (OCB), the city's Keep America Beautiful affiliate since 1975, was receiving an increasing number of telephone calls from Evansville residents complaining about litter. Surveys confirmed that litter had increased between 1990 and 1995.

Evansville, with a population of 126,000, was experiencing a period of economic expansion. Companies that had recently brought jobs and dollars to the city included a Toyota manufacturing facility, a steel plant, a flour mill with a payroll of \$2.6 million, and a casino riverboat that was attracting new tourists.

OCB, with an annual budget of \$125,000 which comes solely from more than 2800 area businesses and citizens, believed it was important to ensure that Evansville remained an attractive and appealing place to visit, live, and raise a family. In 1995, OCB began planning an aggressive long-term anti-litter media campaign that included television ads, posters, mall kiosks, public bus ads, and billboards. OCB looked at campaigns in other states and in cities of similar size and decided to target its campaign message to males in the 18-35 age group. OCB concluded that “men who litter do not respond to polite requests to abstain from littering for the good of the community.”

The first ad that was developed featured football player Kevin Hardy of the Jacksonville Jaguars. Hardy is an Evansville native and was the number two National Football League draft pick in 1996. The ads and posters pictured a stern Hardy and the message “Don’t Trash My Town, Clown.” After the launch in October 1996, OCB conducted various activities through the first half of 1997 to create awareness of the campaign, including Litter Awareness Month and a poster contest for all Evansville school children. Kevin Hardy appeared on a Freedom Festival Parade float in June 1997.

A visual litter survey and photometric index survey conducted in August 1997 showed a 22% litter reduction since the 1996 anti-litter campaign began. OCB found that the reduction in litter was occurring in residential, commercial, industrial, public and rural areas throughout the city and county.

The campaign was supported by numerous in-kind contributions totaling more than \$60,000, including the creative development and coordination of the campaign, television and radio ad production, advertising space, printing costs, kiosk displays, and spokesperson appearances. OCB spent an additional \$15,000 to cover some of the printing and production costs. The donated spaces for print ads spaces included ad space on doors in restaurant and bar restrooms. Ads included 25 posters for high schools and colleges, five bus shelter posters, and 25 billboards. Total impressions for print advertising were estimated to be more than 28 million, based on traffic counts on roads where the billboards appeared and in the mall where kiosks were placed. Highway billboards seemed to reach the highest number of people.

OCB plans to continue the campaign for two more years, with funding provided by the Citizens Bank of Evansville. A second ad has been developed with the message, “Guys who Litter are Dirtbags.” The ads feature two female teenagers. The third ad features a picture of a construction worker wearing a hardhat and the message, “Real Men Don’t Litter.” OCB expected the second and third ads to be released by the summer of 1998.

In addition to the media campaign, Evansville started a litter hotline called “Grimebusters,” which is sponsored by United States Cellular and the Evansville Police Department. Anyone who sees someone littering from a car can call the Grimebusters hotline from any phone to report the incident. The caller is asked to report the date and time of the incident, the car’s license plate number, the make and color of the car and a brief description of what was seen and where. The owner of the vehicle will receive a friendly letter explaining that littering is unacceptable behavior. Littering incidents are not added to a driver’s record, nor is there a legal citation. United States Cellular donated the phone number and the only costs to OCB were costs of promoting the hotline. The Evansville Police Department is responsible for the hotline which is answered by voice mail and then an assigned officer sends a letter to the offender.

6.2 LITTER CLEANUP, EDUCATION AND PREVENTION PROGRAMS

This section summarizes some of the litter cleanup, education and prevention programs that have proven successful in other states. Section 6.3 presents information on Adopt-A-Highway programs in other states, and Section 6.4 presents an overview of litter legislation in several states.

North Carolina

North Carolina Big Sweep is a nonprofit organization that holds annual cleanups of beaches, lakes, and rivers on the third Saturday in September. The group’s annual budget is approximately \$150,000. Funding comes from public donations and from corporate donors that include RJ Reynolds and the North Carolina Soft Drink Association. North Carolina Big Sweep estimates that with its single four-hour cleanup each year, volunteers save the state \$319,000 in litter cleanup costs. Since 1987, more than 93,000 volunteers have cleaned up more than 5,400 miles of waterways and collected approximately 1,500 tons of litter.

Oregon

Stop Oregon Litter and Vandalism (SOLV) began in 1969 cleaning beaches and highways with 3,000 volunteers. In 1997, SOLV had more than 50,000 volunteers who actively cleaned up illegal dumpsites, neighborhoods and waterways. In 1996, Oregon estimated that SOLV volunteers provided a benefit to the state of about \$3.1 million in service.

SOLV’s 1996 budget was approximately \$495,000. Funding comes from contributions (83%), sale of merchandise (10%) and government grants (6%). Contributors in 1997 included Weyerhaeuser, Portland General Electric, AirTouch Cellular, NIKE, Bank of America, Cellular West, CH2M Hill, Clean Rivers Cooperative, Georgia-Pacific, Environmental Support Center, Intel Corporation, Sprint, Texaco, Wells Fargo, Reynolds Metal, Sherwin-Williams, Jantzen, Inc., National Park Service and Metro and KINK Radio.

Pennsylvania

The Pennsylvania Resources Council (PRC) sponsored two litter summits in 1998. A summit for western Pennsylvania was held in Pittsburgh, and a summit for eastern Pennsylvania was held in Philadelphia. At the summit in Pittsburgh, the participants identified key litter issues and solutions:

Issues Identified:

- Litter is a low priority.
- Pickups are not preventing more litter.
- Improperly placed trash and uncovered trucks are sources of litter.
- Littered neighborhoods seem to breed drug dealers.
- Cities want to pick up litter but they do not receive funds to do so.

Solutions Identified:

- Frequent cleanups lead to less litter.
- Help neighborhoods feel “ownership.”
- Pickup litter one neighborhood at a time.
- Open all lines of communication.
- Empty trash receptacles more frequently.
- Create an Adopt-A-Block program.
- Create an umbrella organization to help groups network.
- Create standardized rules for trash collection.

Texas

Keep Texas Beautiful (KTB) has been active since 1967 and has approximately 500 local affiliates. In 1997, affiliate communities volunteered more than 1.5 million hours and removed about 1.4 cubic yards of garbage. KTB affiliates removed litter from more than 16,000 miles of highway, 5,500 miles of lakeshores, 226,000 miles of streets and 135 miles of beaches. These affiliates had more than 335,000 minutes of television, 98,000 minutes of radio and 261,000 inches of newspaper column inches.

The annual Great Texas Trash-Off is held every year and is known as the largest one-day cleanup event in the nation. In 1997, over 120,000 Texans collected almost 7.25 million gallons of litter on one day. KTB’s Youth Environmental Education project provided the state with its first environmental curriculum. In 1993, more than 10,000 teachers were trained in ‘Texas Waste In Place’ which is a K-6 grade curriculum about litter prevention and recycling/waste reduction.

The Texas Adopt-A-Beach program began in 1986. Since then, more than 208,000 volunteers have collected more than four tons of litter. The Spring 1998 cleanup attracted more than 8,500 volunteers who picked up 139 tons of litter from 157 miles of beach. The sponsors of Texas’ 1998 Adopt-A-Beach Cleanup included Southwest Airlines and TCI Cablevision.

Virginia

V.O.I.C.E. is a business and industry task force that helps trade associations and corporations in Virginia coordinate their own litter and recycling programs. The organization was formed in 1977 to increase public involvement in litter reduction, to encourage recycling, to increase business and citizen involvement in keeping communities clean, and to provide support and coordination for governmental, civic and private litter reduction and recycling efforts.

V.O.I.C.E. receives no money from the state and is solely funded by donations from trade associations and corporations. The annual budget of approximately \$40,000 comes from members that include Anheuser-Busch, Inc., Coors Brewing Company, Miller Brewing Company, Camellia Food Stores, The Kroger Company, National Soft Drink Association, Steel Recycling Institute, Phillip Morris USA and Virginia Retail Merchants Association..

The Virginia Council for Litter Prevention and Recycling produces an annual statistical review of all the litter programs in the state. The Council has no staff of its own and its officers and committee members are program managers for litter programs throughout the state. The Council meets quarterly.

Washington

Washington's Ecology Youth Corps is a statewide program that hires teenagers to pick up litter during the spring, summer and early fall months. Funding for was increased from \$2.5 million to \$3.5 million in 1997. Funding comes from the state's litter tax. The program pays teenagers \$5.50 per hour and supplies them with gloves, vests, hats, goggles and t-shirts. For more dangerous areas, such as near cliffs or rocky areas, the Corps employs people 18 and older and pays them \$8 per hour. Teens are accompanied by adult supervisors, who are usually teachers participating in the project as a summer job. The supervisors are paid \$10-12 per hour.

During 1997, the Ecology Youth Corps collected more than 60,000 bags of litter and as of 1997, more than 6,500 people have participated. This youth group cleaned 3,347 miles of roadway, and worked a total of 5,463 hours in 1997. The Corps has four-full time employees who are regional coordinators and in the summer months there are four part-time crew checkers, 32 part-time crew supervisors, and approximately 350-400 crew members. With the guidance of the Washington's Litter Task Force, the Ecology Youth Corps has funds set aside to complete a litter composition survey in 1998.

Wisconsin

Keep Greater Milwaukee Beautiful (KGMB) has been active for 14 years and has been a Keep America Beautiful affiliate for 12 years. Approximately 50,000 volunteers are active each year and are supplied with bags, gloves, caps and thank you-coupons for the local zoo. The program has an annual budget of \$225,600 where \$12,000 is provided by the county and the

remaining funds come from from public and private donations. GLAD Bags® is the largest contributor and sponsors the annual GLAD-Bag-A-Thon® cleanup in Milwaukee. In 1996, this annual cleanup had more than 500 groups who collected more than 2,000 tons of litter.

KGMB reported that \$896,121.61 was saved in volunteer hours and \$318,568.02 was saved in donated goods and services between July 1, 1996 and June 30, 1997. Private donations during that fiscal year were \$206,111 for a combined total of more than \$1.4 million in contributions. KGMB reports that for every dollar of government money, the community receives a benefit of \$111.

6.3 Adopt-A-Highway Programs

Almost every state in the U.S. has an Adopt-A-Highway program. Each state calculates a different value received as a result of the volunteer efforts of adopting groups. This section briefly presents some highlights of Adopt-A-Highway programs in other states.

California

California's Adopt-A-Highway program began in 1989 and is coordinated by the California Department of Transportation (CalTrans). Its annual budget of \$6 million budget comes CalTrans's road maintenance budget and pays for advertisements, plastic bags, safety goggles, orange vests, gloves, and signs. It is estimated that Adopt-A-Highway volunteers save California more than \$25 million annually on litter removal, and that they have saved the state about \$120 million since the program's inception. Adopted urban areas must be cleaned weekly and rural areas must be cleaned six times a year.

New Jersey

The Adopt-A-Highway program started in 1990 and is sponsored by the New Jersey Department of Transportation (NJDOT). More than 600 volunteer groups cover 985 miles or 50% of all New Jersey state roads. Volunteers must clean their designated site a minimum of three times per year. In April 1997, NJDOT started a hotline that motorists can call to report litterers. NJDOT does not track litter cleanup costs and does not maintain a separate budget for the Adopt-A-Highway program. Therefore, there are no estimates on the economic value of volunteer hours. According to the NJDOT, New Jersey is primarily concerned with cleaning up litter to uphold the "Garden State" image.

NJDOT has identified 13 "litter hot spots" that consistently accumulate large amounts of litter. The hot spots are in highly visible, high traffic areas that are gateways into the state. Volunteer group cleans these areas every three weeks, and after persistent efforts, all 13 sites are considered to be improving. NJDOT believes that if an area is kept clean, people are less likely to litter there.

New York

New York began its Adopt-A-Highway program in 1990. As of June 1997, about 2,200 volunteer groups were active and 5,800 state-maintained miles were adopted. Volunteers make a two-year commitment and are responsible for two miles of highway. Litter must be picked up at least four times a year. The program is funded through the New York General Fund and run by the New York DOT. There is no separate budget for Adopt-A-Highway in New York and NYDOT engineers run the program along with their other duties. New York estimates that without the volunteers, it would cost the state approximately \$80 per mile to clean up the litter, for a total of about \$928,000 a year based on the number of adopted miles. The state's views this not as money saved but as a cost avoidance. DOT will post a sign acknowledging the volunteering group which costs approximately \$350 each.

North Carolina

North Carolina's Adopt-A-Highway program began in 1988. The program's budget is \$250,000 a year, which comes from NCDOT maintenance funds. In 1996, there were more than 160,000 volunteers and 13,227 state-maintained miles adopted out of 78,000 total miles. Volunteers collected more than 5.3 million pounds of litter in 1996. Volunteer groups are required to remove litter at least four times a year and North Carolina's Adopt-A-Highway provides volunteers with vests, bags, gloves, pick-up sticks and blue recycling bags.

Pennsylvania

Pennsylvania's Adopt-A-Highway program started in 1990. Of the 40,000 miles in the state, more than 16,000 are adopted. Volunteers agree to a two-year contract with Pennsylvania Department of Transportation (PennDOT) and four cleanups are required each year. The program is funded by license fees (car registration, driver's licenses) and a gas tax. Highway Beautification receives \$400,000 a year and \$300,000 of that is designated for Adopt-a-Highway to purchase signs, create commercials, printing brochures and other needed materials.

PennDOT runs the Keep Pennsylvania Beautiful (KPB) program which is not affiliated with Keep America Beautiful. In 1997, KPB had more than 250,000 volunteers participate on Keep Pennsylvania Beautiful Day which is the last weekend in April. Also, the program educates elementary school children, teaches in a fun and interesting way and initiates a one-day cleanup on Earth Day. KPB's budget is \$100,000.

Texas

The Texas DOT's Adopt-A-Highway program has had more than 4,300 groups who have adopted more than 9,000 miles of Texas highways. TxDOT supplies volunteers with reflective vests, trash bags and they haul the trash way for each clean up. In 1996, Texas saved over \$3.8 million dollars because volunteers collected litter.

Virginia

Virginia's Adopt-A-Highway program began in 1988 and is housed in the Department of Transportation (DOT). Each of the 95 counties decides which roads are eligible for adoption. As of December 1997, there were more than 14,400 state-maintained adopted miles and about 50,000 volunteers. Each group agrees to a two-year contract and cleans up its segment at least four times each year. Funding comes from different parts of DOT's budget. There is no legislation allotting funds for Virginia's Adopt-A-Highway program.

Virginia does not see Adopt-A-Highway volunteers as money savers but as a way to help redirect funds. The redirected funds are used to help other areas of the roads: cleaning unadopted roads, patching potholes, repaving roads or creating new street signs. Staff members believe that without the volunteers, maintenance on some of the state's roads might be neglected.

Washington

Washington's Adopt-A-Highway program began in 1990. As of November 1997, there were 1,650 groups with an average of 10 people in each group. The program's \$2.2 million budget is funded from a gas tax. Funding goes toward supplies and advertising. The Department of Transportation spent \$120,000 for disposal fees of litter bags collected in 1996 by both Adopt-A-Highway and Ecology Youth Corps.

In 1997, the Washington DOT started a corporate sponsorship program that allows corporations to pay from \$750 to \$10,000 per year to have a private contractor pick up and dispose of litter along a stretch of highway. The maximum stretch of highway that can be adopted under this program is 10 miles. Multiple adoptions are allowed but not on contiguous stretches. Some people in Washington are skeptical about the new program's success because the state does not allow business logos to be displayed on Adopt-A-Highway signs.

Wisconsin

Wisconsin's Adopt-A-Highway program began in 1989 and had 39,315 volunteers in September 1997 that worked in groups of 10-15 people. In 1997, 97% of all state highways were adopted. Wisconsin's program requires all volunteers to be over the age of 16 and to sign a waiver relieving the state of any liabilities due to injuries or damage. The \$1 million annual budget comes from the Wisconsin DOT operating funds. This money is spent on supplies, salaries and advertising. DOT uses a countless supply of trash bags since their large volunteer group performs cleanups 4-5 times a year. Another expense within the program is the replacement of Adopt-A-Highway signs which have a life span of 7-10 years and cost about \$300 each. Wisconsin's DOT spends a total of about \$21 million a year on roadside costs including litter pickup, mowing, weed control, nonnative plant control, and cutting of trees.

6.4 Legislation in Other States

This section presents a brief overview of legislative efforts undertaken in other states to support litter reduction, education and prevention program.

Louisiana

In March 1996, the Louisiana Legislature passed the Statewide Beautification Law to provide for litter reduction and elimination which would “enhance the tourist, recreational, and economic development of the state.” Under this law, the Louisiana Litter Reduction and Public Action Commission and the litter reduction and public action section were created within the Office of Solid and Hazardous Waste in the Department of Environmental Quality (DEQ). Amendments in 1998 provided additional provisions to the original law and established new programs for litter abatement. The legislation contains some noteworthy provisions:

- Littering is prohibited in all public areas, roadways and waterways, and on private property not owned by the litterer. Offenders’ sentences usually include a fine and community service hours. Sentences vary depending on the type and severity of the violation and the number of previous convictions. In cases of three or more convictions, sentences include driver’s licence suspension for a year and jail time.

Violations not committed in the presence of an enforcement officer can be brought to court if there is evidence that indicates the defendant committed the offense. Any article found in dumped litter displaying the name of a person shall be permissive rebuttal that a person has violated the law.

Collected fines are distributed to the state treasury for the Keep Louisiana Beautiful Fund, to the law enforcement agency that issued the citation, to the office of the district attorney who prosecuted the defendant, and to the local governing authority where the offense was committed (funds can only be used for litter abatement in litter-free zones).

- Litter Receptacles: Parking areas of 15 parking spaces or more must have litter receptacles to aid in litter abatement. These receptacles must accommodate at least 15 gallons and may bear the statewide logo (designed by the section).
- People against littering: Under this program, local litter watch committees are able to encourage the issuing of litter tickets, to monitor the number of litter tickets written, and to encourage litter pickups by prisoners.
- Litter-free Zones: Public rights-of-way are litter-free zones. In these areas, littering also includes the posting of temporary signs (i.e., political campaign signs).

New Jersey

The Clean Communities Act, passed in 1986 and administered by New Jersey's Department of Environmental Protection (DEP), created a statewide litter reduction program through the implementation of local programs that stress the importance of litter pickup, litter removal, litter education and enforcement. The Clean Communities Act is funded by a tax on items determined to be most likely to become litter. The 15 categories of items include:

- Beer and other malt beverages
- Cigarette and tobacco products
- Cleaning agents and toiletries
- Distilled spirits
- Food for human or pet consumption
- Glass containers
- Groceries
- Metal containers
- Motor vehicle tires
- Newsprint and magazine paper stock
- Drugstore sundry products (excluding all prescription drugs)
- Paper and household products
- Plastic or fiber containers made of synthetic material (excludes reusable containers; this is known as the "Tupperware clause")
- Soft drinks and carbonated waters
- Wine

Manufacturers pay 1% of sales within New Jersey. Retailers with annual in-state sales of more than \$250,000 pay .000225%; retailers whose annual sales of these items is under \$250,000 are exempt. The litter tax is not applicable to wholesalers or cooperatives that distribute to independent retailers, to avoid double taxation. The tax generates average revenues of \$11.5 million per year. The revenue goes to the Clean Communities Account. This money is dedicated to Clean Communities programs and is distributed annually: 80% for municipal grants, 10% for county grants, 5% for DEP Division of Parks & Forestry, and 5% for DEP Division of Solid Waste. To be eligible for a grant, a municipality or county must confirm adoption of one of the several Clean Communities programs and develop a cleanup program to supplement the existing litter pickup program. Grant recipients must submit an annual report to New Jersey's DEP.

New Jersey's litter legislation also provides that a person who throws, drops, discards or places any litter of any nature upon public or private property other than in a receptacle is committing a petty disorderly person's offense. Upon conviction, a person may be sentenced up to 30 days in jail, a fine of up to \$500, or both. The court may also require 20-40 hours of community service, including litter pickup and removal. A person convicted within one year of a previous conviction for the same offense could receive up to 60 days in jail, a fine of up to \$1,000, or both, and 40-80 hours of community service, including litter pickup and removal. Fines go to the municipality where the violation occurred, to be used for litter control activities.

New York

New York's Returnable Container Law was enacted in 1982 after a 10-year campaign for the legislation. Industry opposed the law and was looking for alternatives. Proponents organized a 600-mile walk across the state to gain the votes of key legislative districts, and the Returnable Container Law passed by a slim margin. New York's Department of Conservation (DEC) oversees the Returnable Container Law, which applies to beer, carbonated soft drink, wine cooler, carbonated, mineral and soda water containers. The deposit is at least 5 cents and there is a 1.5-cent handling fee paid by the distributor to the dealer or operator.

All containers must be accepted unless the container does not have a refund value or if the container is broken or corroded. The operators of the redemption centers are paid the refund by the manufacturer or distributor. As of September 1996, the redemption rate was about 76%, a decrease of 2% from 1995. The redemption rate for beer containers was about 80%, for soda containers it was about 71%, and for wine products it was about 51%. Consumers paid \$247.9 million in deposits and redeemed \$187.6 million.

Oregon

Oregon's Beverage Container Act became law in 1971 and was viewed as a litter control measure. After the bill's first year, almost 4 million beverage containers were returned for deposit. Litter from beverage containers decreased 83% within the first two years, according to the state's Department of Environmental Quality. Two years after the law was passed, the total litter in Oregon was nearly cut in half and the return rate for beverage containers exceeded 90%.

Tennessee

In 1983, an environmental court was established in Memphis (Shelby County) to develop and implement the consequence strategies necessary to reduce the incidence of environmental-code violations (Potter et al., 1995). The court's use of negative consequences has been a successful incentive for citizens to comply with environmental codes. The court is responsible for all cases dealing with building, zoning, health, housing, and fire code violations. Additionally, the court has been found to be a relatively inexpensive, effective way to promote behavior change.

When the Memphis Environmental Court was created, it became part of an existing division of the municipal court, with limited jurisdiction: they handled civil cases and were only able to assess fines as punishment. In 1991, the Legislature expanded the jurisdiction of the court by founding the Shelby County Environmental Court. The court now oversees both civil and criminal cases, while sentences include fines, jail time, and community service. The Tennessee Legislature recently reduced the amount of a fine for littering and added a 14-hour minimum community service requirement for offenders to pick up litter. They also introduced a reward program which gives people \$100 for reporting someone who was convicted of littering or dumping.

The court presides over several thousand cases each year, including all environmental violations, not just littering and illegal dumping. The court collected more than \$2 million in 1997 from all environmental convictions. The revenue from fines is placed in a general county fund. This money, along with tax revenues, is used to fund all governmental agencies. The court itself receives its funding annually from the Legislature.

The Shelby County Environmental Court has one judge, one administrative assistant, two clerks, three attorneys general, and three bailiffs. It is difficult to calculate how much it costs to run the environmental court because the bailiffs are paid for by the Sheriff's Department, the clerks are paid for by the General Sessions Court Office, and the Attorney General's Office pays for the attorneys general. The costs to maintain the environmental court (excluding the above mentioned departments' expenditures) are estimated at \$150,000.

While this court was modeled after an environmental court in Indianapolis, Indiana, the Shelby County Environmental Court now serves as a model to develop other environmental courts. According to Keep America Beautiful, the Shelby court is the most active environmental court in the country. The judge of the Shelby County Environmental Court and KAB have been making a cooperative effort to help other areas establish environmental courts. In 1998, there are more than 68 environmental courts around the country.

Virginia

Virginia collects taxes from carbonated drink manufacturers and from businesses that sell items that eventually become litter (e.g., snack food packages, beverage bottles, cigarette packs). Revenues go into Virginia's Litter Control and Recycling Fund which was established in 1977. The legislation states that one goal of the Virginia Department of Environmental Quality (VDEQ) is to control and prevent litter in Virginia by supporting and coordinating all local, regional and statewide programs regarding litter.

Revenue from the taxes is used for local, regional and statewide litter prevention and recycling grants; 75% is distributed as a noncompetitive grant to localities and is divided based on the population and road size within each locality, 20% is available as competitive grants to fund statewide and regional educational programs, and 5% is given to VDEQ for administrative costs. In FY 1995/1996, more than \$9 million was given to 147 localities within Virginia.

One tax is the Soft Drink Excise Tax, which is collected from every wholesaler or distributor of carbonated soft drinks. The tax is based on the gross receipts of each wholesaler or distributor from the sale of soft drinks. The tax ranges from \$50 for a business with gross receipts less than \$100,000 to \$6,000 for a business with gross receipts more than \$10 million

A second tax is the Virginia Litter Tax, which applies to every person in Virginia engaged in business as a manufacturer, wholesaler, distributor or retailer of products described below where either the package, wrapping or the container contributes to litter:

Beer and other malt beverages
Cigarettes and tobacco products
Cleaning agents and toiletries
Distilled spirits
Food for human or pet consumption
Glass containers
Groceries
Metal containers
Motor vehicle parts
Newspapers and magazines
Nondrug drugstore sundry products
Paper products and household paper
Plastic or fiber containers made of synthetic material
Soft drinks and carbonated waters
Wine

An annual tax of \$10 collected from every establishment that manufacturers, sells or distributes these items. An additional \$15 is collected annually from companies that sell groceries, soft drinks and carbonated drinks and beer and malt drinks. Vending machines are not considered a separate establishment but the owner will be taxed annually for goods that are stored or assembled for the purpose of supplying the vending machine. Revenues go into state's Litter Control and Recycling Fund. A Litter and Recycling Fund Advisory Board oversees the distribution of funds. The board consists of five people - 1 citizen, 1 program manager, and 3 corporate representatives. The board is administratively supported by VDEQ.

Washington

Washington's Waste Reduction, Recycling, and Model Litter Control Act, formerly known as the Model Litter Control and Recycling Act, ratified by voters in 1972, was the first law of its kind in the country. The law directed the state's Department of Ecology to conduct permanent, ongoing programs to control and remove litter "to the maximum extent possible." The law created a program for that would "employ youth to remove litter from places and areas that are most visible to the public." The law designated a minimum of 40% and a maximum of 50% of revenue received from the state's litter tax to be expended on the youth employment program, which became known as the Ecology Youth Corps. A maximum of 60% of litter tax revenues were to be spent on public education and awareness programs to control litter, as well as efforts to encourage recycling and develop markets for recyclable materials. The law also makes it for any owner of a motor vehicle or watercraft not to have in its possession and use a litter bag, and violators are subject to a fine of \$25.

Washington's litter tax, approved in lieu of a consumer deposit on glass bottles, placed a .015% tax (i.e., \$150 tax for every \$1 million in sales) on 13 categories of items:

- Beer and other malt beverages
- Cigarettes and tobacco products
- Cleaning agents and toiletries
- Food for human or pet consumption
- Household paper and paper products
- Glass containers
- Groceries
- Metal containers
- Nondrug drugstore sundry products
- Newspapers and magazines
- Plastic or fiber containers made of synthetic materials
- Soft drinks and carbonated waters
- Wine

The tax is paid by various businesses, including grocery and drug stores, fast-food restaurants, wholesale beverage companies, and paper companies, and is collected by the Department of Revenue. About \$12 million in revenue was projected to be available for the 1997-1999 and was to be allocated as follows: 50% to the Ecology Youth Corps and Department of Corrections for litter pickup, 20% to local governments for litter reduction, and 30% to waste recycling, reuse and education efforts.

In 1997, the Department of Ecology formed a 17-member Litter Task Force to examine the effectiveness of the state's litter control measures and make recommendations for improving litter prevention and pickup. Members represented state agencies, county and local governments, state legislators, business, and industry. Task force members made a commitment to a standard of zero litter throughout the state and pledged to work together to accomplish that goal.

Littering in Washington is a Class I civil infraction. Amounts of litter that are 1 cubic foot or less are subject to a penalty of \$50. Littering in amounts greater than 1 cubic foot is subject to a penalty of \$250 and a cleanup fee of \$25 per cubic foot of litter. Half of all litter fines collected by the state or local government entity enforcing the provisions must be distributed to that local governmental entity. A judge may require a litter violator to remove the litter from the property as an alternative, or in addition, to the monetary penalty and cleanup fee. In 1996, this law was amended to require that a person who litters in a state park perform 24 hours of community service in that park, as long as the park has agreed to participate in the community service program. The community service requirement is in addition to the monetary penalties. If an out-of-state resident litters, a fine of \$300 will be in place of the community service project.

7. CONCLUSIONS

The current project (1997-98) was conducted in response to FDEP's request for information about the economic and social impacts of litter. Additionally, FDEP had requested that the Center explore litter prevention strategies of other states to identify effective ways of reducing litter on a statewide basis.

The Center's research suggests the following conclusions and additional research needs:

1. The presence of litter in a neighborhood can have a significant economic and social impact on the quality of life of the neighborhood's residents. Litter has been identified as a significant element of the "downward spiral" of decline which is associated with increased fears and perceptions that the neighborhood is unsafe. Additional research is needed to quantify the economic and social impacts associated with litter in urban neighborhoods.
2. The tourism industry generates about \$37 billion annually for Florida's economy. The Center attempted to collect data on the costs of litter to the tourism industry, but no specific data could be obtained on litter's cost to hotels, cultural destinations, theme parks, etc. Additional research is needed to determine the economic impact of litter on Florida's tourism industry.
3. The Center's attempts to obtain information on litter cleanup costs incurred by the restaurant industry, malls and convenience stores revealed that at the corporate level, there is no knowledge of the costs associated with cleaning up litter. To obtain real-world data on the direct economic impacts of litter on Florida's businesses, it may be necessary to conduct on-site surveys at a variety of business locations in selected cities.
4. Grass roots efforts to prevent litter in Florida are increasing. As of 1998, the state had 38 affiliates of Keep America Beautiful Systems. The number of volunteers participating in cleanups has been increasing each year. Future research should examine several of Florida's "success stories" through in-depth case studies of what is working and why.
5. Several states found that statewide media campaigns were effective in raising awareness about litter and reducing roadside litter. However, the states have not followed a consistent methodology for measuring their campaigns' success. Future research should re-visit the impact of mass media campaigns and the development of realistic measures of success.
6. The Center sent a survey to every county in Florida to obtain data on the economic impact of litter at the county level. The survey revealed that there is no consistent method for accounting for litter management costs. Additional research is needed to determine the cost of managing litter at the county and local levels. On-site surveys at selected county and city offices may produce more data than the Center was able to obtain with its fax and phone survey.

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Ms. Brunson gave a presentation on the "Broken Windows" theory at the 1997 Annual Conference of Keep America Beautiful, Inc. in Washington, D.C.

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Dr. Perkins provided the Center with three of his articles along with several of his surveys on perceptions of neighborhood decline. He directed the Center to many valuable sources, and continuously corresponded with updates and inquiries.

Smith, Frankie, Secretary, Keep Polk County Clean & Beautiful, Inc., Bradley Community Project, Inc., Polk County Public Schools, 215 East Main Street, Bartow, Florida 33830. Phone (941) 533-8423; (941) 428-1740. Fax: (941)534-3562

Ms. Smith provided the Center with information about the Bradley Community Project. She was extremely generous with her time, and she provided a very personal account of what can take place through community revitalization efforts.

Wilson, Victoria, Community Relations, Director, Philapride, Inc., 1818 Market Street, Suite 3510, Philadelphia, PA 19103. Phone (215) 575-2210. Fax (215) 575-2222. E-mail: vicca@aol.com

Ms. Wilson works with gangs and graffiti. She gave a presentation on her research at the "Broken Windows" workshop conducted as part of the 1997 Keep America Beautiful Annual Conference. She provided the Center with additional contacts in related fields of research and suggested several literature sources.

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Ray and Patricia Ashton are actively involved in the ecotourism industry. They work as consultants with a team of international associates who collectively promote the preservation of the environment through working relationships with the tourism industry. Mr. Ashton's insights and information concerning ecotourism were very helpful.

Barrett, Carlene. Marketing Administrative Assistant, Florida Department of Environmental Protection, Division of Recreation and Parks, Mail Station 535, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. Phone: (850) 414-8558 (Suncom: 994-8558). Fax: (850) 922-4925. E-mail: barrett_c@ngw.dep.state.fl.us

Ms. Barrett provided the Center with information about the Ecotourism/Heritage Tourism Advisory Committee Report and the Florida tourism industry.

Bragg, Becky. Director of Marketing, Canoe Outpost-Peace River, 2816 NW County Road 661, Arcadia, Florida 34266, Phone: (800) 268-0083 or (941) 494-1215. Fax: (941) 494-4391. E-mail: canoe fla@desoto.net. URL: <http://www.canoeoutpost.com>

Ms. Bragg provided the Center with information concerning the costs of litter and litter pickup along the Peace River. This information provided a picture of the tourism industry as it is affected by littering and dumping. She has had experience with tourists affected by litter problems and was able to give us first-hand knowledge of these effects.

Holland, Stephen, Ph.D. Director, Center for Tourism Research, University of Florida, Gainesville, FL 32611, Phone: (352) 392-4048 ext. 224

Dr. Holland provided suggestions about sources that would help to define the relationship between tourists and depreciative behavior such as litter.

Knight, Robin. Media/Marketing, Visit Florida, 661 East Jefferson Street, Suite 300, Tallahassee, FL 32301, Phone: (850) 488-5607 ext. 322. Fax: (850) 224-2938. E-mail: rknight@flausa.com URL: <http://www.flausa.com>

Ms. Knight was very helpful in explaining to Center staff the role of Visit Florida and the organization's relationship to the Governor and the Florida Commission on Tourism.

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Jan Monahan provided information concerning the Florida Tourism Association and provided the names of additional contacts.

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Donna Ross provided helpful suggestions and input that helped to shape the Center approach to researching the Florida tourism industry.

CHAPTER 5

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Mr. Hursh met with Center staff during their visit to Harrisburg and provided extensive information about the "Don't Be A Litterbug" campaign conducted by the Department of Environmental Protection.

Morash, Bob. Pennsylvania Department of Transportation, 555 Walnut Street, Forum Place, 7th Floor, Harrisburg, PA 17101-1900. Phone: (717)783-5692

Mr. Morash met with Center staff during their visit to Harrisburg and provided extensive information about Keep Pennsylvania Beautiful and the state's Adopt-A-Highway program.

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Web site: <http://www.psyc.memphis.edu/pages/specials/behcomm/scec.htm>

Virginia

Duell, John. Norfolk Environmental Commission, 3500 Gramby Street, Norfolk, VA 23504
Phone (757) 441-1347.

Duvall, Charles R, Jr. Executive Director, Virginia Organized Industries for a Clean Environment (V.O.I.C.E.), 2307 E. Broad Street, Richmond, VA 23223. Phone (804) 644-7884. Fax (804) 644-7886.

Green, Carol. Coordinator, Wise County Clean Team, P.O. Box 570, Wise, VA 24293. Phone: (540) 328-1000. E-mail: wcct@compunet.net
<<http://www.netscope.net/~KVB>>
<<http://www.geocities.com/RainForest/5646/history.html>>

Hundley, Robert L. Executive Director, Keep Virginia Beautiful, 1906 North Hamilton Street, Suite F, Richmond, VA 23230. Phone (804) 355-0085. Fax (804) 355-0085.

Percel-Mays, Donna. Adopt-A-Highway, Virginia Department of Transportation, 1401 East Broad Street, Room 302, Richmond, VA. Phone (800) 774-3382.

Washington

Anderson, Rick. Washington House of Representatives, Natural Resources Committee, P.O. Box 40600, Olympia, WA 98504. Phone (360) 786-7114. Fax: (360) 786-7018.

Lambacher, Gary. Director, Ecology Youth Corps, Eastern Regional Office, 4601 Monroe Street, Suite 202, Spokane, WA 99205-1295, Phone: (509) 456-2926 Fax: (509) 456-6175

Willard, Ray. Director, Adopt-A-Highway, Washington Department of Transportation, 310 SE Maplepark Dr., Olympia, WA 98504. Phone: (360) 705-7865. E-mail: Willarr@wsdot.wa.gov

Wisconsin

Kunde, Jennifer. Program Coordinator, Keep Greater Milwaukee Beautiful, Inc., 1313 West Mount Vernon Avenue, Milwaukee, WI 53233-2620. Phone: (414) 272-5462 Fax: (414) 272-5060

Mindak, Barbara. Wisconsin Adopt-A-Highway, P.O. Box 7916, Madison, WI 53707. Phone: (608) 266-8138.

APPENDIX A

LITTER IN FLORIDA:

A COUNTY SURVEY

LITTER IN FLORIDA: A COUNTY SURVEY

The Center developed a survey for Florida counties that was designed to collect data on programs and costs for managing litter at the county level. This Appendix presents the results of the survey.

The survey appears on the following three pages. The survey was sent to a contact person in each county who had been identified previously, through a series of telephone calls, as a person knowledgeable about the county's litter management programs. The county contact person was identified initially from contacts listed in FDEP's Annual Solid Waste Management Report (FDEP, 1997). During phone conversations, Center staff explained the purpose of the survey. Responses were generally quite positive and the people contacted said they would respond when they received the survey.

During the process of drafting the survey, Center researchers reviewed the Litter and Marine Debris Grant files for fiscal year 1996-97 at the offices of FDEP in Tallahassee. The litter grant files provided the Center with helpful information about the litter abatement programs the counties administer and the costs associated with those programs.

The survey was pretested with six counties and then distributed to the rest of the counties via fax or overnight delivery. Included with the survey was a copy of each county's litter grant reimbursement information for 1996-97. The package included a cover letter explaining the purpose of the survey and asking the county contact to mail or fax the answers back to the Center.

The research team began making follow-up calls a few days after sending out the surveys to verify that they had been received. Numerous additional calls were made to remind and encourage people to respond to the survey.

While some of the responses received were complete, many had information missing for some questions. Additional calls were made in an attempt to obtain as much information as possible from each county. In some cases, contacts provided the names of other people within the county who could answer some of the questions. Despite numerous calls to county road departments, county clerks, enforcement agencies, county jails, etc., the Center was unable to obtain complete information for some counties.

The responses received were entered into a database. This allowed the Center to summarize and analyze the data. Surveys were received from 43 counties (42 counties plus New Rivers Solid Waste Association which represents three counties), for a 66% response rate.

LITTER IN FLORIDA: A COUNTY SURVEY

A. Contact Information

1. **COUNTY:** _____
2. Contact Name: _____
3. Contact Title: _____
4. Department: _____
5. Address: _____
6. Phone: _____
7. Fax: _____
8. E-Mail: _____

B. Litter Education, Prevention, and Volunteer Cleanup Programs

9. The table below lists programs for which counties may be reimbursed from state Litter Grant funds. For each program that your county conducted during 1996-97, please provide the total amount spent by the county, and the total amount reimbursed from Litter Grant funds.

PROGRAM	Conducted in 1996-97? ✓ if yes	Total Expenditures in 1996-97	Total Amount Reimbursed from Litter Grant funds
The Great Florida Clean-up			
Adopt-A-Shore			
Adopt-A-Road/Street			
Trash Troopers			
Boaters and Anglers Pledge			
Storm Drain Stenciling			
Clean Builders Program			
Xeriscape/Beautification			
Adopt-A-Tree			
Bag It on Buses			

10. Did the county spend money in 1996-97 on any other programs that are not listed in question #9 above, or on any other litter education activities, including advertising?

Yes___ No___ Don't Know___

If yes, on a separate sheet, please attach a list that includes the name and a brief description of each program or activity, and the total amount spent by the county for each program or activity in 1996-97.

11. Is there a Keep Florida Beautiful affiliate in your county?

Yes___ No___ Don't Know___

If "no" or "don't know," go to question 12.

If "yes," please answer questions 11a - 11c:

11a. What is the name of the affiliate? _____

11b. What was the total amount given by the county to the affiliate in 1996-97? \$ _____

11c. Of the amount stated in 11b., how much was reimbursed from Litter Grant funds? \$ _____

12. Do businesses and/or business organizations sponsor or support volunteer cleanups in your county?

Yes___ No___ Don't Know___

If "no" or "don't know," go to question 13.

If "yes," please answer questions 12a. and 12b:

12a. Please list the 5 most important types of support provided by businesses in 1996-97 (such as bags, gloves, employee labor, supplies, etc.)

(1) _____

(2) _____

(3) _____

(4) _____

(5) _____

12b. What was the total value of business support of volunteer litter cleanups in your county in 1996-97?

\$ _____

13. Does the county measure the effectiveness of litter education and prevention programs?

Yes___ No___ Don't Know___

If "no" or "don't know," go to question 14.

If "yes," please answer question 13a.:

13a. Please list the 5 most important methods of measuring the effectiveness of litter education and prevention programs:

(1) _____

(2) _____

(3) _____

(4) _____

(5) _____

C. Litter Pickup Costs

14. What department is responsible for litter pickup in your county?

___ Solid Waste

___ Public Works

___ Other (describe) _____

15. What was the total expenditure by the county in 1996-97 for litter pickup? \$ _____

16. What was the total expenditure by the county in 1996-97 for litter pickups that were required to comply with NPDES Stormwater Permitting regulations? \$ _____

D. Community Service and Inmate Cleanups

17. Do courts in your county include litter cleanups as an option for fulfillment of community service hours?

Yes___ No___ Don't Know___

If "no" or "don't know," go to question 18.

If "yes," please answer questions 17a. and 17b:

17a. What were the county's costs (if any) in 1996-97 for community-service cleanups? \$_____

17b. What was the value of the benefit received by the county from these cleanups? \$_____

18. Are county jail inmates used in the county to pick up litter?

Yes___ No___ Don't Know___

If "no" or "don't know," go to question 19.

If "yes," please answer questions 18a. and 18b:

18a. What were the county's costs (if any) in 1996-97 for jail inmate cleanups? \$_____

18b. What was the value of the benefit received by the county from these cleanups? \$_____

19. Are state prison inmates used in the county to pick up litter?

Yes___ No___ Don't Know___

If "no" or "don't know," go to question 20.

If "yes," please answer questions 19a. and 19b:

19a. What were the county's costs (if any) in 1996-97 for state prison cleanups? \$_____

19b. What was the value of the benefit received by the county from these cleanups? \$_____

E. Enforcement

20. Does the county enforce the Florida Litter Law (Fla. Stat. 403.413)?

Yes___ No___ Don't Know___

If "no" or "don't know," go to question 21.

If "yes," please answer questions 20a.-20d.

20a. How many full-time litter officers are employed by the county? _____

20b. How many Florida Litter Law citations were issued in the county in 1996-97? _____

20c. What was the county's total cost for Florida Litter Law enforcement in 1996-97? \$_____

20d. What was the county's 1996-97 revenue from Florida Litter Law fines and penalties? \$_____

21. Does the county have a litter ordinance?

Yes___ No___ Don't Know___

If "no" or "don't know," go to question 22.

If "yes," please answer questions 21a.-21d.

21a. How many litter ordinance citations were issued in 1996-97? _____

21b. What was the county's total cost for litter ordinance enforcement in 1996-97? \$_____

21c. What was the county's 1996-97 revenue from litter ordinance fines and penalties? \$_____

21d. Please attach a copy of your county's litter ordinance.

22. Please tell us the dates of your county's fiscal year: Beginning_____ Ending_____

23. **Is there anything else** that you would like to tell us with regard to litter management and litter education in your county? We welcome any additional information and comments. Please attach additional sheets.

Thank you for completing this survey. Your help is greatly appreciated!

RESULTS

Section A: Contact Information

1. **County:**

The Center received 43 responses to the survey. One of the responses was from the New River Solid Waste Association, which represents Baker, Bradford, and Union counties. Therefore, a total of 45 counties are represented.

Alachua	Duval	Lake	Pinellas
Bay	Flagler	Madison	Putnam
Brevard,	Gadsden	Manatee	Santa Rosa
Broward	Gilchrist	Nassau	Seminole
Charlotte	Hamilton	New River SWA	St Lucie
Citrus	Hardee	Okaloosa	St. Johns
Clay	Hernando	Okeechobee	Sumter
Collier	Highlands	Orange	Suwannee
Dade	Hillsborough	Osceola	Volusia
Desoto	Indian River	Palm Beach	Walton
Dixie	Lafayette	Pasco	

2. **Contact Title:**

The wide variety in the titles of the individuals who responded to the survey are an indication that counties assign responsibility for litter management in many different ways. The number of responses for each Contact Title are listed below:

Administrative Assistant	2
Assistant Director	1
Chief, Service Department	1
County Engineer	1
Director	7
Educational Specialist	1
Executive Manager	1
Executive Secretary	1
Extension Director	1
Grant Coordinator	1
KAB affiliate staff	6
Landfill Supervisor	1
Landscape Architect	1
Program Coordinator	2

Recycling Coordinator includes Recycling Director, Recycling Manager, and Recycling Specialist)	14
Senior Coordinator	1
Solid Waste Superintendent	1
TOTAL:	43

3. **Department:**

The departments of the individuals who responded to the survey also varied widely. Almost half were in solid waste departments, while others were in county administration, extension service, or utilities departments.

County Administration	1
Environmental Services	2
Extension Service	1
KAB affiliate	7
Landfill	2
Neighborhood Department	1
Public Works	6
Recycling Division	1
Solid Waste	20
Utilities	2
TOTAL:	43

Section B: Litter Education, Prevention, and Volunteer Cleanup Programs

9. *The table below lists programs for which counties may be reimbursed from state Litter Grant funds. For each program that your county conducted during 1996-97, please provide the total amount spent by the county, and the total amount reimbursed from Litter Grant funds.*

The 10 programs listed in this question are the programs that are described in the Litter Grant reimbursement application. A total of 35 counties responded to this question. Those counties reported that they spent a total of \$444,076 on these programs during 1996-97. It should be noted that not all the programs were conducted in every county during 1996-97. Some counties conducted only one or two of the listed programs, while others conducted several of them.

Programs	Conducted in 1996-97? ✓ if yes	Total Expenditures in 1996-97	Total Amount reimbursed from Litter Grant funds
Great Florida Clean-up	25	\$121,885	\$76,934
Adopt-A-Shore	21	\$82,760	\$40,061
Adopt-A-Road/Street	28	\$118,418	\$79,520
Trash Troopers	6	\$14,526	\$17,033
Boaters and Anglers Pledge	11	\$16,653	\$6,773
Storm Drain Stenciling	5	\$7,285	\$2,215
Clean Builders Program	5	\$13,521	\$3,100
Xeriscape/Beautification	15	\$51,507	\$15,794
Adopt-A-Tree	5	\$15,521	\$7,400
Bag It on Buses	1	\$0	\$0
Totals	122	\$442,076	\$248,830

10. *Did the county spend money in 1996-97 on any other programs that are not listed in question #9 above, or on any other litter education activities, including advertising?*

Yes	23
No	13
Don't Know	5

If yes, on a separate sheet, please attach a list that includes the name and a brief description of each program or activity, and the total amount spent by the county for each program or activity in 1996-97.

A number of localized programs were listed.

11. *Is there a Keep Florida Beautiful affiliate in your county?*

Yes	23
No	20
Don't Know	0

If “yes,” please answer questions 11a - 11c:

- 11a. *What is the name of the affiliate?*

A total of 23 counties provided the name of their local KAB affiliate.

- 11b., 11c. The chart below presents the responses received to Questions 11b. And 11c.

- 11b. *What was the total amount given by the county to the affiliate in 1996-97?*

- 11c. *Of the amount stated in 11b., how much was reimbursed from Litter Grant funds?*

The 21 counties that answered this question gave a total of \$682,781 to local KAB affiliates, of which \$278,177 was reimbursed by litter grant funds.

County	Total Amount Given to Affiliate	Amount Reimbursed by Litter Grant	Unreimbursed County Money to Affiliate
Brevard	\$84,166	\$19,166	\$65,000
Broward	\$149,000	\$0	\$149,000
Clay	\$19,380	\$19,166	\$214
Collier	\$8,000	\$8,000	\$0
Gadsden	\$15,000	\$10,000	\$5,000
Hernando	\$19,166	\$19,166	\$0
Highlands	\$5,000	\$0	\$5,000
Hillsborough	\$69,000	\$19,000	\$50,000
Indian River	\$14,260	\$14,260	\$0
Lake	\$19,000	\$19,000	\$0
Manatee	\$36,666	\$19,166	\$17,500
Nassau	\$7,970	\$5,000	\$2,970
New River SWA	\$29,014	\$29,014	\$0
Orange	\$675	\$675	\$0
Palm Beach	\$84,166	\$19,166	\$65,000
Pasco	\$14,000	\$14,000	\$0
Pinellas	\$19,166	\$19,166	\$0
Putnam	\$20,266	\$19,166	\$1,100
Santa Rosa	\$54,166	\$19,166	\$35,000
St. Johns	\$8,820	\$0	\$8,820
Volusia	\$5,900	\$5,900	\$0
Totals	\$682,781	\$278,177	\$404,604

12. *Do businesses and/or business organizations sponsor or support volunteer cleanups in your county?*

Yes	34
No	8
Don't Know	1

If “yes,” please answer Questions 12a. and 12b:

12a. *Please list the 5 most important types of support provided by businesses in 1996-97 (such as bags, gloves, employee labor, supplies, etc.)*

Type of Business Support	# of Counties
Labor	24
Equipment/Supplies	14
Bags	13
Food/Drink	10
Cash/Donations	8
Gloves	8
Disposal	7
Advertising/Promotion	6
Prizes/Gift Certificates	4
Containers	3
Signs/Banners/Brochures/Flyers/Posters	2
Education	1
Event Coordination	1
T-Shirts	1
Tents	1
Vehicles	1
Vests	1

12b. *What was the total value of business support of volunteer litter cleanups in your county in 1996-97?*

A total of 17 counties responded with a dollar amount that they had calculated for the benefit of business support for litter management and prevention efforts. The total for those counties was \$2,538,007. The chart below shows the amounts listed by each of the responding counties.

County	Value of Business Support
Alachua	\$53,104
Bay	\$2,000
Clay	\$5,678
Collier	\$500,000
Dade	\$560
Gilchrist	\$250
Hernando	\$2,950
Hillsborough	\$1,000,000
Manatee	\$10,067
Nassau	\$103,256
New River SWA	\$7,392
Palm Beach	\$2500
Pinellas	\$673,855
Putnam	\$22,395
Santa Rosa	\$150,000
St. Lucie	\$0
Volusia	\$4,000
Total	\$2,538,007

13. *Does the county measure the effectiveness of litter education and prevention programs?*

Yes	23
No	17
Don't Know	3

If “yes,” please answer question 13a.:

13a. *Please list the 5 most important methods of measuring the effectiveness of litter education and prevention programs.*

The photometric index used by KAB affiliates was listed by 14 counties as the method used to measure the effectiveness of county programs. Other methods include visual observation, measurements of the weight and volume of litter collected, number of volunteers and volunteer hours, and manual litter surveys. The chart below presents the responses.

Methods of Measuring Effectiveness of Programs	# of Counties
Photometric Index	14
Visual Observation	8
Weight Removed	6
Measure Amount of Litter	6
Number of Volunteers	5
Manual Litter Survey	4
Number of Volunteer Hours	3
Community Feedback	2
4R's Program	1
Audubon Society Results	1
Behavior Survey	1
Clean Campus Scores	1
Cost/Benefit Analysis	1
Great Florida Cleanup Results	1
Number of Cleanups	1

Number of Illegal Dumps Reported to Code Enforcement	1
School Essay Contest	1
School Projects	1
Trash Troopers Results	1
Written Evaluation	1

Section C: Litter Pickup Costs

14. *What department is responsible for litter pickup in your county?*

A total of 43 counties answered this question. The responses indicate that while the majority of counties place the responsibility for litter pickup in the Public Works or Solid Waste departments, numerous other county departments may also be involved in litter pickup.

Department	Number
Public Works	24
Solid Waste	17
Highway/Road and Bridge	8
KAB Affiliate	8
Sheriff/Community Service	6
Adopt-a-Road/Adopt-a-Street	3
Corrections	3
Transportation	2
Adopt-a-Shore	1
Aquatic Services	1
Codes Enforcement	1
Environmental Council	1
FDOC	1
FDOT	1
Parks and Recreation	1

Pollution Control	1
Storm Water Management	1
Work Crews	1

15. *What was the total expenditure by the county in 1996-97 for litter pickup?*

A total of 27 counties provided a dollar amount for litter pickup. Broward County reported spending \$4 million during the 1996-97 year, while expenditures in the other counties range from \$360 to \$442,000. The chart below presents the responses, which total \$5,530,766 for the 27 counties.

Eight counties responded to this question by indicating “N/A,” or “Not Available.” Five counties indicated the amount spent as “0.” Flagler County indicated that litter pickup is incidental to roadside and stormwater conveyance system maintenance. Hardee County indicated that this expenditure could not be calculated because the program responsible for litter pickup is also responsible for many other tasks. Nassau County reported that its expenditures are not categorized and therefore it is not possible to determine how much time and money is dedicated to litter pickup.

The chart below presents the responses to this question.

County	Expenditure
Brevard	\$35,216
Broward	\$4,000,000
Charlotte	\$12,500
Clay	\$6,143
Collier	\$100,385
Duval	\$5,000
Gadsden	\$25,000
Gilchrist	\$360
Hernando	\$25,729
Hillsborough	\$17,600
Indian River	\$54,603
Lafayette	\$442,000
Lake	\$45,000

Madison	\$500
Manatee	\$401,246
Okaloosa	\$2,000
Okeechobee	\$1,400
Orange	\$50,000
Palm Beach	\$45,000
Pasco	\$4,784
Pinellas	\$62,000
Putnam	\$3,500
St. Johns	\$28,000
St. Lucie	\$30,000
Sumter	\$10,000
Suwannee	\$37,000
Volusia	\$85,800
Total	\$5,530,766

16. *What was the total expenditure by the county in 1996-97 for litter pickups that were required to comply with NPDES Storm water Permitting regulations?*

Three counties provided dollar amounts in response to this question. The low response rate to this question may be due to the fact that all counties are not yet required to have NPDES Stormwater Permits. Only counties whose 1990 census population was greater than 100,000 in unincorporated areas are required to have the permit at present. Phase II of the NPDES Stormwater program is projected to go into effect on May 1, 1999. The population quotas for this phase will be more stringent, therefore requiring more counties to have the permit. These counties must be in compliance by May 2002.

A total 16 counties reported that they spent \$0 on litter pickups in connection with NPDES permitting, and 24 counties responded that the information was not available.

The chart below presents the responses to this question.

County	Expenditure
Collier	\$6,000
Dade	\$800,000
Manatee	\$368,601
Total	\$1,174,601

Section D: Community Service and Inmate Cleanups

17. *Do courts in your county include litter cleanups as an option for fulfillment of community service hours?*

Yes	29
No	11
Don't Know	3

If “yes,” please answer questions 17a. and 17b:

17a. *What were the county's costs (if any) in 1996-97 for community-service cleanups?*

17b. *What was the value of the benefit received by the county from these cleanups?*

The chart below presents the responses to questions 17a. and 17b. The counties that provided dollar amounts in response to this question spent a total of \$84,000 and received a total benefit of \$447,861. This equates to about a \$5 benefit for every \$1 spent in connection with community service cleanups.

County	Community Service Cost	Community Service Benefit
Brevard	0	\$6,102
De Soto	\$2,000	\$0
Duval	\$30,000	N/A
Manatee	\$0	\$288,760
Palm Beach	\$2,000	\$50,000
Santa Rosa	\$50,000	\$100,000
Seminole	\$0	\$2,999
Totals	\$84,000	\$447,861

18. *Are county jail inmates used in the county to pick up litter?*

Yes	29
No	11
Don't Know	3

If “yes,” please answer questions 18a. and 18b:

18a. *What were the county’s costs (if any) in 1996-97 for jail inmate cleanups?*

18b. *What was the value of the benefit received by the county from these cleanups?*

The chart below presents the responses from counties that incurred costs and/or received an economic benefit from using county jail inmates for litter cleanups. The counties that provided dollar amounts in response to this question spent a total of \$513,210 and received a total benefit of \$1,253,612. This equates to about a \$2.50 benefit for every \$1 spent in connection with using county jail inmates for litter cleanups.

Several counties responded that they could not provide exact figures in answer to this question because the costs were not separated from other costs, and the benefit had not been calculated. Citrus County responded that it receives a “considerable” benefit. Duval County started its jail inmate cleanup program recently and therefore did not have figures available for 1996-97. St. Lucie reported that although the benefit is not calculated, using jail inmates is the least expensive way to have litter picked up in the county.

County	Jail Cleanup Costs	County Benefits
Brevard	0	\$389,378
Clay	\$9,464	**
Collier	\$0	\$42,545
Lake	\$1,000	\$15,000
Manatee	\$401,246	\$781,190
Okeechobee	\$0	\$2,500
Palm Beach	\$500	\$20,000
Putnam	\$1,000	N/A
Seminole	\$0	\$2,999
St. Lucie	\$100,000	-
Totals	\$513,210	\$1,253,612

* Brevard County reported that its cost for county jail labor is included in its \$35,216 total expenditure for litter pickup.

** Clay County reported that it considers the jail inmate program to be a “break-even” program.

19. *Are state prison inmates used in the county to pick up litter?*

Yes	22
No	17
Don't Know	4

If “yes,” please answer questions 19a. and 19b:

19a. *What were the county’s costs (if any) in 1996-97 for state prison cleanups?*

19b. *What was the value of the benefit received by the county from these cleanups?*

The chart below presents the responses from counties that incurred costs and/or received an economic benefit from using state prison inmates for litter cleanups. The counties that provided dollar amounts in response to this question spent a total of \$52,340 and received a total benefit of \$650,300. This equates to about a \$12.50 benefit for every \$1 spent in connection with using state prison inmates for litter cleanups.

Several counties reported unquantified benefits. Madison County described this program as “priceless.” Lafayette County described its cost as “minimal.” Hamilton County does not separate the benefit associated with litter pickup from other tasks performed by state prison inmates.

County	State Prison Cleanup Cost	State Prison Cleanup Benefit
Collier	\$0	\$346,000
Gadsden	\$10,000	\$200,000
Gilchrist	\$0	\$16,800
Lafayette	---	\$10,000
Madison	\$500	---
Okaloosa	\$21,840	\$37,500
Suwannee	\$20,000	\$40,000
Totals	\$52,340	\$650,300

Section E: Enforcement

20. *Does the county enforce the Florida Litter Law (Fla. Stat. 403.413)?*

Yes	28
No	12
Don't Know	3

If “yes,” please answer questions 20a.-20d.

20a. *How many full-time litter officers are employed by the county?*

20b. *How many Florida Litter Law citations were issued in the county in 1996-97?*

20c. *What was the county's total cost for Florida Litter Law enforcement in 1996-97?*

20d. *What was the county's 1996-97 revenue from Florida Litter Law fines and penalties?*

The chart below presents the responses received for these questions. The responses suggest that because of different accounting methods, it is probably impossible to get reliable data on the costs of litter law enforcement at the county level.

Several counties explained why it was difficult for them to provide the information requested in these questions. For example:

- Desoto, Highlands, and Lafayette counties do not have separate expense records for enforcement of the Florida Litter Law because enforcement is one of the many duties of the Sheriff's Department..
- Hamilton County said expenditures for enforcement of the Florida Litter Law come under their \$2,000 expense for their county litter ordinance.
- Pinellas County responded that all sheriff's officers are full-time litter officers with regard to illegal dumping, but not for littering.

County	Full-Time Litter Officers	Citations Issued	County Costs	County Revenue from Fines/Penalties
Dade	11	0	\$906,900	\$0
Hillsborough	7	1,000	\$476,000	\$0
Lake	1	3	\$55,000	\$0
Madison	0	2	\$0	\$300
Manatee	0	34	\$0	N/A
Orange	2	N/A	N/A	N/A
Palm Beach	2	N/A	\$120,000	N/A
Putnam	90	N/A	N/A	N/A
Santa Rosa	2	N/A	\$85,000	N/A
St. Johns	1	72	N/A	N/A
Volusia	5	45	\$150,000	N/A
Walton	1	N/A	N/A	N/A
Totals	122	1156	\$1,792,900	\$300

21. *Does the county have a litter ordinance?*

Yes 28
No 10
Don't Know 5

If “yes,” please answer questions 21a.-21d.

21a. *How many litter ordinance citations were issued in 1996-97?*

21b. *What was the county's total cost for litter ordinance enforcement in 1996-97?*

21c. *What was the county's 1996-97 revenue from litter ordinance fines and penalties?*

Ten counties responded with data in answer to these questions. The chart below presents the responses.

County	Citations	County Costs	County Revenues from Fines/Penalties
Collier	50	\$10,000	\$1,380
Dade	404	\$906,900	\$115,429
Hamilton	8	\$2,000	0
Madison	10	0	\$500
Manatee	N/A	\$3,060	N/A
Orange	60	0	0
Palm Beach	N/A	\$120,000	N/A
Santa Rosa	93	\$85,000	N/A
St. Johns	4	N/A	N/A
St. Lucie	1,020	\$350,000	\$11,000
Totals	1649	\$1,476,960	\$128,309

21d. Please attach a copy of your county's litter ordinance.

County litter ordinances were received from the following counties:

Bay
 Brevard
 Collier
 Dade
 Desoto
 Duval (Jacksonville Municipal Ordinance)
 Indian River
 Madison
 Manatee
 Nassau
 Palm Beach
 Santa Rosa
 St. Lucie
 Suwannee